ARIZONA DEPARTMENT OF HEALTH SERVICES

Case Definitions for Communicable Morbidities

2024

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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://www.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 Surveillance. 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 illness, 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).

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

Background

Acute flaccid myelitis (AFM) is characterized by rapid onset of flaccid weakness in one or more limbs and distinct abnormalities of the spinal cord gray matter on magnetic resonance imaging (MRI). AFM is a subtype of acute flaccid paralysis (AFP), defined as acute onset of flaccid weakness absent features suggesting an upper motor neuron disorder. The term 'AFP' is a generalized 'umbrella' term, and includes multiple clinical entities including paralytic poliomyelitis, AFM, Guillain-Barré syndrome (GBS), acute transverse myelitis, toxic neuropathy, and muscle disorders.

Clinical Criteria

- An illness with onset of acute flaccid* weakness of one or more limbs, AND
- Absence of a clear alternative diagnosis attributable to a nationally notifiable condition**

Laboratory/Imaging Criteria for Surveillance

Confirmatory laboratory/imaging evidence

- A magnetic resonance image (MRI) showing spinal cord lesion with predominant gray matter involvement† and spanning one or more vertebral segments, AND
- Excluding persons with gray matter lesions in the spinal cord resulting from physician diagnosed malignancy, vascular disease, or anatomic abnormalities.

Presumptive laboratory/imaging evidence

- MRI showing spinal cord lesion where gray matter involvement† is present but predominance cannot be determined, AND
- Excluding persons with gray matter lesions in the spinal cord resulting from physician diagnosed malignancy, vascular disease, or anatomic abnormalities.

Supportive laboratory/imaging evidence

- MRI showing a spinal cord lesion in at least some gray matter† and spanning one or more vertebral segments, AND
- Excluding persons with gray matter lesions in the spinal cord resulting from physician diagnosed malignancy, vascular disease, or anatomic abnormalitites.

Other Classification Criteria

- Autopsy findings that include histopathologic evidence of inflammation largely involving the anterior horn of the spinal cord spanning one or more vertebral segments, AND

- Excluding persons with gray matter lesions in the spinal cord resulting from physician diagnosed malignancy, vascular disease, or anatomic abnormalities, AND
- Absence of a clear alternative diagnosis attributable to a nationally notifiable condition.**

** Low muscle tone, limp, hanging loosely, not spastic or contracted.*

***Cases with a clear alternative diagnosis attributable to a nationally notifiable condition (NNC) should be reported only once using the event code for the NNC to avoid duplicate reporting.*

† Terms in the spinal cord MRI report such as "affecting 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.

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

Case Classification

Confirmed

- Meets clinical criteria with confirmatory laboratory/imaging evidence, OR
- Meets other classification criteria.

Probable

Meets clinical criteria with presumptive laboratory/imaging evidence.

Suspect

- Meets clinical criteria with supportive laboratory/imaging evidence, AND
- Available information is insufficient to classify case as probable or confirmed.

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

Most Recent ADHS Revision Year	2022
Most Recent CDC/CSTE Revision Year	2022
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	2022: Added other classification criteria; clarified clinical criteria absence of clear alternative diagnosis attributable to a national notifiable condition via footnote. 2021: Updated clinical description, confimatory and presumptive laboratory evidence, and confirmed, probable, and suspect case classifications. Added supportive laboratory evidence and other classification criteria. 2020: Updated presumptive laboratory evidence and added a suspect case classification. Changes based on modifications to CDC/CSTE definition. 2018: Updated clinical description. National experts in AFM surveillance will determine the final case classification. 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.

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

Amebiasis is an infection caused by the protozoan parasite *Entamoeba histolytica* that may be either intestinal or extraintestinal.

Intestinal amebiasis may result in an illness of variable severity ranging from mild, chronic diarrhea and abdominal pain to fulminant dysentery.

Extraintestinal infection may occur with either abscess (e.g., hepatic abscess) or radiographic findings consistent with extraintestinal infection. Liver involvement is most common, but other sites include pleura, peritoneum, pericardium and brain.

Laboratory Criteria for Surveillance

Confirmatory laboratory evidence

- Intestinal amebiasis:
  - Demonstration of cysts or trophozoites of *E. histolytica* in stool (e.g., light microscopy of stained specimen, or ova & parasite (O&P) exam), OR
  - Demonstration of trophozoites in tissue biopsy or ulcer scrapings by culture or histopathology.
- Extraintestinal amebiasis:
  - Demonstration of specific antibody against *E. histolytica* as measured by IHA (indirect hemagglutination), or other immunodiagnostic test (e.g., enzyme immunoassay (EIA)).

Supportive laboratory evidence

- Intestinal amebiasis:
  - 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

A clinically compatible case that meets the confirmatory laboratory criteria.

Probable

A clinically compatible case that is epidemiologically linked to either a confirmed intestinal or extraintestinal amebiasis 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 considered a clinically compatible case. Serology is used for the diagnosis of extraintestinal disease only, and should be disregarded when considering intestinal infection. However, a positive serologic test does not necessarily indicate extraintestinal amebiasis if other components of the extraintestinal amebiasis are not met.

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

Most Recent ADHS Revision Year	2020
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A

Description of changes	2020: Revised the criteria for extraintestinal amebiasis (clinical description, laboratory evidence) and clarified that compatible symptoms must be present for all classifications (confirmed, probable, suspect). 2019: Added supportive laboratory criteria and suspect classification to allow for CIDT. Added probable classification for epi-linkage.

ANAPLASMOSIS	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 5 WORKING DAYS

CASE DEFINITION

Background

Anaplasmosis is a tickborne disease caused by the bacterium *Anaplasma phagocytophilum*. Ixodes scapularis, or the blacklegged tick, is the primary vector in the northeastern and midwestern United States. The western blacklegged tick, *Ixodes pacificus*, is the principal vector along the West Coast. Anaplasmosis is not known to be endemic in Arizona.

Clinical Description

Anaplasmosis typically presents 5 to 14 days after a tick bite with a combination of nonspecific clinical symptoms, such as fever, fatigue, and headache. Illness is often accompanied by laboratory abnormalities including leukopenia, thrombocytopenia, and mildly elevated liver enzymes.

Clinical Criteria

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

Laboratory Criteria for Surveillance

Confirmatory laboratory evidence

- Detection of *A. phagocytophilum* DNA in a clinical specimen via amplification of a specific target by polymerase chain reaction (PCR) assay, nucleic acid amplification tests (NAAT), or other molecular testing; OR
- Serological evidence of a four-fold change[1] in IgG-specific antibody titer to *A. phagocytophilum* antigen by indirect immunofluorescence assay (IFA) in paired serum samples (one taken in the first two weeks after illness onset and a second taken two to ten weeks after acute specimen collection)[2]; OR
- Demonstration of anaplasmal antigen in a biopsy or autopsy sample by immunohistochemical methods; OR
- Isolation of *A. phagocytophilum* from a clinical specimen in cell culture with molecular confirmation (e.g., PCR or sequencing).

Presumptive laboratory evidence

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

[1] A four-fold change in titer is equivalent to a change of two dilutions (e.g., 1:64 to 1:256).
[2] A four-fold rise in titer should not be excluded as confirmatory laboratory criteria if the acute and convalescent specimens are collected within two weeks of one another.

Case Classifications**

Confirmed

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

Probable

- Meets presumptive laboratory evidence with fever as reported by patient or healthcare provider AND at least one other objective or subjective clinical evidence criterion (excluding chills/sweats); OR
- Meets presumptive laboratory evidence without a reported fever but with chills/sweats AND:
    - at least one objective clinical evidence criterion; OR
    - two other subjective clinical evidence criteria.

Suspect

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

*** Patients should not be classified as cases for both anaplasmosis and ehrlichiosis based on serologic evidence alone.*

Criteria to Distinguish a New Case from an Existing Case

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

Comment

Diagnostic testing for anaplasmosis is complicated by the close genetic relationship between *Anaplasma* and *Ehrlichia* species. Blood smears may reveal morulae within the cytoplasm of infected cells, and while they cannot always conclusively distinguish between *Anaplasma* and some *Ehrlichia* species, smears are the only rapid diagnostic available, and in combination with surveillance data, the results can be informative. Serologic testing is commonly used to diagnose anaplasmosis, but as with other closely related species, antibodies to *Anaplasma* and *Ehrlichia* can cross-react.

In addition to the relatively low specificity of single positive serologic assay results, antibodies can persist for months or years following infection and may be detected in individuals with no clinical evidence of disease; overall, a single, mildly elevated titer is a poor indicator of current infection. The presence of IgG antibodies may reflect past exposures, and data suggest that IgG antibodies reactive to *A. phagocytophilum* in asymptomatic individuals may be more common than previously thought. While accurately interpreting a single IgG test result is challenging, IgM antibodies have also proven to be unreliable indicators of infection. Organism-specific IgM tests are typically only reactive during the first 40 days after infection and are less sensitive than tests that detect IgG antibodies.

Some of the tests included in the previous case definition (specifically ELISA and dot ELISA) are no longer widely available and lack reliability, especially when compared to species-specific molecular methods. A national analysis of surveillance data for anaplasmosis from 2008-2017 shows a clear shift toward molecular testing in recent years. As of 2017, molecular methods were the diagnostic used in

75% of reported anaplasmosis cases. Other methods, such as antigen detection by immunohistochemistry, isolation in cell culture, or serological evidence of a four-fold change in IgG-specific antibody titer by indirect immunofluorescence assay (IFA) in paired serum samples, while definitive, are rarely reported. In addition, when acute and convalescent serum samples documenting a four-fold change in IgG-specific antibody titer are reported, many are rejected as laboratory evidence as samples were collected outside of the previous case definition's time parameters.

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

Most Recent ADHS Revision Year	2024
Most Recent CDC/CSTE Revision Year	2024
ADHS Case Definition Matches CDC/CSTE?	Yes

Description of changes	2024: • ADHS case definition revised to match CDC/CSTE. • Removes 'Undetermined' option from case definition. • Added language to offer guidance on classifying cases with serology only reports for both *Ehrlichia* and *Anaplasma* spp. • Establish criteria for identifying new cases for surveillance purposes. Clinical criteria changes: • Separates clinical evidence criteria into objective and subjective categories. • Added fatigue/malaise as subjective clinical evidence. • Removes the requirement for fever as a clinical evidence criterion from confirmed cases. Lab criteria changes: • Removes ELISA, dot-ELISA, and single IgM test results from laboratory evidence for case classification (alone these are unreliable indicators of infection). • Added language to specify that specimens for serology and microscopy be collected within 60 days of illness onset. • Extended window for collecting convalescent specimen to up to 10 weeks. • Raised actionable IgG titer level to ≥1:128 from 1:64. 2018: Anaplasmosis split from ehrlichiosis, compatible with the listing in the reportable disease rules. ADHS case definitions revised in 2012 to match CDC/CSTE.

ANTHRAX (*Bacillus anthracis*)	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 24 HOURS

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 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 Surveillance

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

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

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

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 Surveillance

- 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 within12 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

Most Recent ADHS Revision Year	2017 (with 2020 addition of a hyperlink to the Case Classification Algorithm)
Most Recent CDC/CSTE Revision Year	2015
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	2020: Added a hyperlink to the Case Classification Algorithm. 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. 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. 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.

	2014: Clinical criteria revised to accept subjective fever or chills in place of measured temperature; modification of laboratory criteria to exclude “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. 2013: Section moved from West Nile Virus to Arboviral Diseases. Material within the section is identical.

BABESIOSIS	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 5 WORKING DAYS

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 Surveillance

For the purposes of surveillance:

Laboratory confirmatory evidence

- 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 evidence

- Demonstration of a *Babesia microti* Indirect Fluorescent Antibody (IFA) total immunoglobulin (Ig) or IgG antibody titer of greater than or equal to (≥) 1:256 (or ≥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 (≥) 1:256; OR

- Demonstration of a *Babesia duncani* IFA total Ig or IgG antibody titer of greater than or equal to (≥) 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:

a. In the transfusion recipient:

   i. 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
   ii. At least one of these transfused blood components was donated by the donor described below; AND
   iii. Transfusion-associated infection is considered at least as plausible as tick-borne transmission; AND

b. In the blood donor:

   i. Donated at least one of the RBC or platelet components that was transfused into the above recipient; AND
   ii. 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

Most Recent ADHS Revision Year	2011
Most Recent CDC/CSTE Revision Year	2011
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	N/A

BASIDIOBOLOMYCOSIS	PROVIDERS SUBMIT A REPORT WITHIN 5 WORKING DAYS

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 Surveillance

- 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

Most Recent ADHS Revision Year	2006
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	N/A

BOTULISM	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 24 HOURS

CASE DEFINITION

Subtypes

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

Botulism, Foodborne

Clinical Description
Ingestion of botulinal 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 Surveillance

- 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 Surveillance

- 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 Surveillance

- 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

Most Recent ADHS Revision Year	2012
Most Recent CDC/CSTE Revision Year	2011
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	ADHS case definition was edited in 2012 to match CDC/CSTE

BOTULISM, INFANT	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 24 HOURS

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 Surveillance

- 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

Most Recent ADHS Revision Year	2011
Most Recent CDC/CSTE Revision Year	2011
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	N/A

BRUCELLOSIS	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY

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 Surveillance

Confirmatory laboratory evidence

- Culture and identification of classical *Brucella* spp.[1] (such as *Brucella melitensis*, etc.) 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 laboratory evidence

- *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 classical *Brucella* spp.[1] DNA in a clinical specimen by PCR assay.

[1] See Comment for list of species

Case Classification

Confirmed

A clinically compatible illness with confirmatory laboratory evidence.

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 confirmatory 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

Due to the reclassification of *Ochrobactrum* species to the genus *Brucella* based on gene-content studies done in 2020, several *Ochrobactrum* species are now been classified by clinical laboratories as *Brucella* species (e.g., *Ochrobactrum anthropi* and is classified as *Brucella anthropi).* Reference: the Society of Microbiology guidelines.

The following **classical** *Brucella* species cause brucellosis and count as a report of brucellosis:

- *Brucella abortus*
- *Brucella canis*
- *Brucella ceti*
- *Brucella inopinata*
- *Brucella melitensis*
- *Brucella microti*
- *Brucella neotomae*
- *Brucella pinnipedialis*
- *Brucella ovis*
- *Brucella papionis*
- *Brucella suis*
- *Brucella vulpis*

The *Brucella* strains below do not cause brucellosis but different rare infections typically occurring through the use of contaminated hospital equipment. Therefore a lab report identifying the following *Brucella* strains should not count as a report of brucellosis:

- *Brucella anthropi*
- *Brucella ciceri*
- *Brucella cytisi*
- *Brucella daejeonesis*
- *Brucella endophytica*
- *Brucella gallinifaecis*
- *Brucella grignonensis*
- *Brucella haematophilia*
- *Brucella intermedia*
- *Brucella lupini*
- *Brucella orzae*
- *Brucella pecoris*
- *Brucella pituitosa*
- *Brucella pseudintermedia*
- *Brucella pseudogrignonensis*
- *Brucella rhizosphaerae*
- *Brucella thiophenivorans*
- *Brucella tritici*

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

Most Recent ADHS Revision Year	2024
Most Recent CDC/CSTE Revision Year	2010
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	2024: The Comments section was added to reflect the reclassification of *Ochrobactrum* spp. to *Brucella* spp. and to distinguish between these newly classified species that do not cause brucellosis from the classical *Brucella* species that do cause brucellosis.

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 Surveillance

Confirmatory laboratory evidence
Isolation of *Campylobacter* spp. from a clinical specimen.

Presumptive laboratory evidence
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 surveillance.

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

Most Recent ADHS Revision Year	2017
Most Recent CDC/CSTE Revision Year	2015
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	2017: Added criteria to distinguish a new case from an existing case to match 2014 CDC/CSTE case definition. 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. 2012: CDC/CSTE added suspect laboratory criteria for surveillance and case classification, based on non-culture testing; ADHS edited the 2012 case definition to match CDC/CSTE.

CANDIDA AURIS	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 24 HOURS

Cases should be reported under the emerging or exotic disease requirement. Enter in MEDSIS under the *Candida auris* morbidity.

CASE DEFINITION

Clinical Description

Clinical manifestation of *Candida auris (C. 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 intra-abdominal 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.

Laboratory Criteria for Surveillance

Confirmatory laboratory evidence

- Detection of *C. auris* in a specimen from a swab obtained for the purpose of colonization screening using either culture or validated culture-independent test (e.g., nucleic acid amplification test [NAAT]), OR
- Detection of *C. auris* in a clinical specimen obtained during the normal course of care for diagnostic or treatment purposes using either culture or a validated culture-independent test (e.g., NAAT).

Case Classification

Confirmed

- ***Candida auris* case, screening:** Person with confirmatory laboratory evidence from a swab collected for the purpose of screening for *C. auris* colonization regardless of site swabbed.*
- ***Candida auris* case, clinical:** Person with confirmatory laboratory evidence from a clinical specimen collected for the purpose of diagnosing or treating disease in the normal course of care.**

*Typical screening specimen sites are skin (e.g., axilla, groin), nares, rectum, or other external body sites. Swabs collected from wound or draining ear as part of clinical care are considered clinical specimens.‡

**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. This does not include swabs collected for screening purposes (see *Candida auris* case, screening).

‡Because it can be difficult to differentiate screening specimens from clinical specimens based on microbiology records, any swabs except wound swabs or draining ear swabs can be assumed to be for screening unless specifically noted otherwise. Laboratories do not need to change their practice; public health wants to identify all *C. auris* whether from screening or clinical specimens.

Criteria to Distinguish a New Case from an Existing Case

A patient who is colonized or infected with *C. auris* is considered colonized indefinitely. The following provides guidance for health departments to distinguish a new case for patients who test positive for *C. auris* in either a screening swab (i.e., screening case) or in a clinical specimen (i.e., clinical case).

- For screening cases, count patient only once as a screening case; do not count if patient has been previously identified as a clinical or screening case. A person with a 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).
- For clinical cases, count patient only once as a clinical case, even if the patient has already been counted separately as a screening case. A person with a clinical case should not be counted as a screening case thereafter because all clinical cases are considered to also be colonized with *C. auris* (e.g., patient with clinical *C. auris* specimen who later has positive screening swab is not counted as a screening case).

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

Most Recent ADHS Revision Year	2023
Most Recent CDC/CSTE Revision Year	2023
ADHS Case Definition Matches CDC/CSTE?	Yes

Description of changes	2023: Case definition revised to match CDC/CSTE case definition. Removed Presumptive Laboratory Evidence, Epidemiologic Linkage, and Probable and Suspect Case Classifications. 2019: Case definition revised to match CDC/CSTE case definition. 2018: New CDC/CSTE case definition; added to Arizona case definition manual.

CARBAPENEM-RESISTANT ENTEROBACTERALES (CRE)	LABORATORIES SUBMIT A REPORT WITHIN 5 WORKING DAYS

CASE DEFINITION

Laboratory Criteria for Surveillance

Enterobacter spp., E.coli, Klebsiella spp., or any other *Enterobacterales species* (see Appendix 2) isolated from any specimen AND

- **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 phenotypic test* result for carbapenemase production in a specimen, OR
  - Positive molecular test** result detecting a carbapenemase gene*** (with or without organism identification), OR
  - Detection of carbapenemase gene*** by next generation sequencing (NGS)‡

*Phenotypic testing methods include but are not limited to: metallo-β-lactamase test, modified Hodge test, Carba NP, carbapenem inactivation method (CIM), modified carbapenem inactivation method (mCIM), EDTA-modified carbapenem inactivation method (eCIM), or immunochromatography tests (ICT).

**Molecular tests for carbapenemase genes include but are not limited to: Xpert Carba-R, VERIGENE, Streck ARM-D, Cepheid, validated laboratory-developed NAAT.

***Common carbapenemase genes found in CRE include: bla_{KPC}, bla_{NDM}, bla_{VIM}, bla_{IMP}, and bla_{OXA-48}.

‡It is not necessary to report organisms with known chromosomal carbapenemase genes, including but not limited to SME+ *Serratia marcescens*, unless they have additional non-chromosomal carbapenemase genes.

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 Enterobacterales 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) organisms. The Arizona definition includes other mechanisms of resistance.

Sub-classifications of CRE

CRE cases should be further stratified according to:

a) The organism identified (*E.coli, Enterobacter* spp., *Klebsiella* spp., or other Enterobacterales), 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).
c) Clinical versus screening
    a. Stratified by whether the specimen was clinical (i.e., collected for the purpose of diagnosing or treating disease in the course of normal care) versus screening (i.e., collected for the detection of colonization and not for the purpose of diagnosing or treating disease). Because it can be difficult to differentiate screening specimens from clinical specimens based on microbiology records, screening cases should generally be limited to CRE identified in rectal, peri-rectal, or stool specimens.

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 (see laboratory criterion B), OR
    - Positive on a phenotypic test for carbapenemase production (see laboratory criterion B)

    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

- A specific organism/carbapenemase combination in a person should be counted as a separate case from other organism/carbapenemase combinations in the same person (e.g., KPC+ *K. pneumoniae* vs. NDM+ *E. coli*). A specific organism/carbapenemase combination can include a carbapenemase gene(s) without an organism detected (e.g., NDM+ no organism vs. NDM+ *E. coli*).
- A person classified as a clinical case should not be counted as a screening case thereafter for the same organism/carbapenemase combination (e.g., patient with known NDM+ *E. coli* infection who later has NDM+ *E. coli* colonization should not be counted as a separate case).
- A person classified as a screening case can be later counted as a clinical case with the same organism/carbapenemase combination (e.g., patient with NDM+ *E. coli* peri-rectal screening swab who later develops NDM+ *E. coli* blood stream infection would be counted twice, once in each category). This is the only way that the same organism/carbapenemase combination can be counted twice for the same person.
- A case with a known carbapenemase but unknown organism should only be counted once for that carbapenemase (e.g., an NDM+ screening case is later screened at a different facility and tests NDM+ positive and no organism is identified again).

Reporting and Isolate Submission

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

Isolate submission

Enterobacterales 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 should be reported urgently to public health (and isolate submitted to ASPHL) as it could signify a novel carbapenemase.

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 i*mi* 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

CASE DEFINITION SUMMARY

Most Recent ADHS Revision Year	2023
Most Recent CDC/CSTE Revision Year	2023
ADHS Case Definition Matches CDC/CSTE?	No
Description of changes	2023: Updated laboratory criteria and criteria to distinguish a new case to reflect the new CDC/CSTE case definition for Carbapenemase-Producing Organisms (CPO). Changed from Enterobacteriaceae family to Enterobacterales order, excluding references to the administrative code, to reflect the reclassification and change in nomenclature. 2019: Updated the criteria to distinguish a new case from an existing case to reflect what is in the 2018 CDC/CSTE case definition. 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. Arizona definition is broader than the national definition, which is for only three genera of Enterobacteriaceae (*E. coli*, *Enterobacter* spp., and *Klebsiella* spp.) and only one mechanism (carbapenemase producers).

	2017: adopted 2015 CSTE case definition using modified expanded definition of CRE 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.

CARBAPENEMASE PRODUCING (CP) OR PAN-RESISTANT CARBAPENEM-RESISTANT ACINETOBACTER BAUMANNII (CRAB)	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 24 HOURS

Cases should be reported under the emerging or exotic disease requirement. Enter in MEDSIS under the Carbapenem-resistant Acinetobacter (CRA) morbidity.

CASE DEFINITION

Laboratory Criteria for Surveillance

Acinetobacter baumannii complex isolated from any specimen AND

- Demonstrating laboratory evidence of carbapenemase production through one of the following (for laboratories performing any of this testing):
    - Positive molecular test** result detecting a carbapenemase gene***, OR
    - Detection of carbapenemase gene*** by next generation sequencing (NGS)

OR

- Demonstrating pan-resistance
    - Resistant for all antibiotics tested by antimicrobial susceptibility testing.

**Molecular tests for carbapenemase genes include but are not limited to: Xpert Carba-R, VERIGENE, Streck ARM-D, Cepheid, validated laboratory-developed NAAT.

***Common carbapenemase genes found in *Acinetobacter baumannii complex* are plasmid-mediated oxacillinases with carbapenemase activity (e.g., OXA-23-like, OXA-24/40-like, OXA-58-like) and could also include bla_{KPC}, bla_{NDM}, bla_{VIM}, bla_{IMP}, and bla_{OXA-48}.

Case Classification

Confirmed

A case that meets laboratory criteria.

Sub-classifications of CRAB

CRAB cases should be further stratified according to:

a) the mechanism of resistance (carbapenemase-producing (CP) CRAB, CRAB that is likely non-CP-CRAB, or insufficient information to classify as CP-CRAB or likely non-CP-CRAB).
b) Clinical versus screening
    a. Stratified by whether the specimen was clinical (i.e., collected for the purpose of diagnosing or treating disease in the course of normal care) versus screening (i.e., collected for the detection of colonization and not for the purpose of diagnosing or treating disease). Because it can be difficult to differentiate screening specimens from clinical specimens based on microbiology records, screening cases should generally be limited to CRAB identified in rectal, peri-rectal, axilla, groin, or stool specimens. Laboratories may also note screening specimens from other sites (e.g., wound, tracheostomy or central line sites).

Criteria to Distinguish a New Case from an Existing Case

- A specific organism/carbapenemase combination in a person should be counted as a separate case from other organism/carbapenemase combinations in the same person (e.g., OXA-23+ *Acinetobacter baumannii complex* vs. OXA-24+ *Acinetobacter baumannii complex*).
- A person classified as a clinical case should not be counted as a screening case thereafter for the same organism/carbapenemase combination (e.g., patient with known OXA-23+ *Acinetobacter baumannii complex* infection who later has OXA-23+ *Acinetobacter baumannii complex* colonization should not be counted as a separate case).
- A person classified as a screening case can be later counted as a clinical case with the same organism/carbapenemase combination (e.g., patient with OXA-23+ *Acinetobacter baumannii complex* axilla/groin screening swab who later develops OXA-23+ *Acinetobacter baumannii complex* blood stream infection would be counted twice, once in each category). This is the only way that the same organism/carbapenemase combination can be counted twice for the same person.

Reporting and Isolate Submission

Acinetobacter baumannii complex meeting laboratory criteria 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.

Isolate submission

Acinetobacter baumannii complex isolates meeting the above laboratory criteria should be submitted to ASPHL for additional testing.

- *Acinetobacter baumannii complex* isolates that do not meet the above laboratory criteria but demonstrate carbapenem resistance (minimum inhibitory concentrations (MIC) of ≥8 mcg/ml for meropenem, imipenem, and doripenem) 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. 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.

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

Most Recent ADHS Revision Year	2023
Most Recent CDC/CSTE Revision Year	2023
ADHS Case Definition Matches CDC/CSTE?	No
Description of changes	New CDC/CSTE case definition for Carbapenemase-Producing Organisms (CPO); added to Arizona case definition manual in 2023 as CP-CRAB to reflect the new CDC/CSTE definition.

CARBAPENEMASE-PRODUCING (CP) OR PAN-RESISTANT CARBAPENEM-RESISTANT PSEUDOMONAS AERUGINOSA (CRPA)	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 24 HOURS

Cases should be reported under the emerging or exotic disease requirement. Enter in MEDSIS under the Carbapenem-resistant Pseudomonas (CRP) morbidity.

CASE DEFINITION

Laboratory Criteria for Surveillance

Pseudomonas aeruginosa isolated from any specimen AND

- Demonstrating laboratory evidence of carbapenemase production through one of the following (for laboratories performing any of this testing):
    - Positive phenotypic test* result for carbapenemase production in a specimen, OR
    - Positive molecular test** result detecting a carbapenemase gene***, OR
    - Detection of carbapenemase gene*** by next generation sequencing (NGS)

OR

- Demonstrating pan-resistance
    - Resistant for all antibiotics tested by antimicrobial susceptibility testing.

*Phenotypic testing methods include but are not limited to: metallo-β-lactamase test, modified Hodge test, Carba NP, carbapenem inactivation method (CIM), modified carbapenem inactivation method (mCIM), EDTA-modified carbapenem inactivation method (eCIM), or immunochromatography tests (ICT).

**Molecular tests for carbapenemase genes include but are not limited to: Xpert Carba-R, VERIGENE, Streck ARM-D, Cepheid, validated laboratory-developed NAAT.

***Common carbapenemase genes found in *Pseudomonas aeruginosa* include: bla_{KPC}, bla_{NDM}, bla_{VIM}, bla_{IMP}, and bla_{OXA-48}.

Case Classification

Confirmed

A case that meets laboratory criteria.

Note: 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-CRPA.

Sub-classifications of CRPA

CRPA cases should be further stratified according to:

a) the mechanism of resistance (carbapenemase-producing (CP) CRPA, CRPA that is likely non-CP-CRPA, or insufficient information to classify as CP-CRPA or likely non-CP-CRPA).
b) Clinical versus screening
    a. Stratified by whether the specimen was clinical (i.e., collected for the purpose of diagnosing or treating disease in the course of normal care) versus screening (i.e., collected for the detection of colonization and not for the purpose of diagnosing or

treating disease). Because it can be difficult to differentiate screening specimens from clinical specimens based on microbiology records, screening cases should generally be limited to CRPA identified in rectal, peri-rectal, or stool specimens.

Criteria to Distinguish a New Case from an Existing Case

- A specific organism/carbapenemase combination in a person should be counted as a separate case from other organism/carbapenemase combinations in the same person (e.g., VIM+ *Pseudomonas aeruginosa* vs. IMP+ *Pseudomonas aeruginosa*).
- A person classified as a clinical case should not be counted as a screening case thereafter for the same organism/carbapenemase combination (e.g., patient with known VIM+ *Pseudomonas aeruginosa* infection who later has VIM+ *Pseudomonas aeruginosa* colonization should not be counted as a separate case).
- A person classified as a screening case can be later counted as a clinical case with the same organism/carbapenemase combination (e.g., patient with VIM+ *Pseudomonas aeruginosa* peri-rectal screening swab who later develops VIM+ *Pseudomonas aeruginosa* blood stream infection would be counted twice, once in each category). This is the only way that the same organism/carbapenemase combination can be counted twice for the same person.

Reporting and Isolate Submission

Pseudomonas aeruginosa meeting laboratory criteria 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.

Isolate submission

Pseudomonas aeruginosa isolates meeting the above laboratory criteria should be submitted to ASPHL for additional testing.

- *Pseudomonas aeruginosa* isolates that do not meet the above laboratory criteria but demonstrate carbapenem resistance (minimum inhibitory concentrations (MIC) of ≥8 mcg/ml for meropenem, imipenem, and doripenem) 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. 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: Negative PCR for all known resistance mechanisms if accompanied by positive phenotypic test for carbapenemase production should be reported urgently to public health (and isolate submitted to ASPHL) as it could signify a novel carbapenemase.

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

Most Recent ADHS Revision Year	2023
Most Recent CDC/CSTE Revision Year	2023
ADHS Case Definition Matches CDC/CSTE?	No
Description of changes	New CDC/CSTE case definition for Carbapenemase-Producing Organisms (CPO); added to Arizona case definition manual in 2023 as CP-CRPA to reflect the new CDC/CSTE definition.

CHAGAS INFECTION AND RELATED DISEASE (American trypanosomiasis)	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 5 WORKING DAYS

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 America's, 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. In the absence of a more likely diagnosis, the acute phase can include the following symptoms:

- 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 or indeterminate 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 Surveillance

Confirmatory laboratory evidence

- 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
- Positive diagnostic serology (IgG) confirmed by a positive serology at the CDC*

**No single serological (IgG) test has the sensitivity and specificity to be relied on alone, thus two different serological (IgG) tests should be used.*

Presumptive laboratory evidence

- One or more positive diagnostic serology (IgG) not confirmed by a positive serology at CDC (excludes blood donor screening—see Notes below); OR
- Reactive blood donor screening AND a secondary positive diagnostic serology (IgG) not confirmed by a positive serology at the CDC.

Notes:
Patients with positive blood donor screening should have a diagnostic T. cruzi serological (IgG) test done at a commercial lab. A positive blood donor screening in the absence of additional testing does not meet the laboratory criteria, and should be classified as 'not a case'.

'Additional' or 'confirmatory' antibody tests performed by a blood screening agency do not count as diagnostic tests (See Comments).

Patients with positive diagnostic T. cruzi serological (IgG) testing should have confirmatory testing performed at the CDC.

Cases with negative CDC serological test results are ruled out, and should be classified as 'not a case'.

Case Classification

Confirmed

A case that meets the confirmatory laboratory criteria.

Probable

A clinically-compatible, symptomatic case that meets the presumptive laboratory criteria.

Suspect
An asymptomatic 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 (or indeterminate) 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**

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

Criteria to Distinguish a New Case From an Existing Case

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

Comments

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 of 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.

Additionally, only the IgG results need to be considered when using presumptive testing criterion of a single serological diagnostic assay. Per communications with CDC (2019), the IgM assays are non-specific; in general, positive IgM tests have been confirmed as infections only when the patients also tested positive for IgG.

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

Most Recent ADHS Revision Year	2024
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	2024: Confirmatory and presumptive laboratory criteria have been partially reworded to improve clarity. Additional notes have been added to aid in case classification. A note to the probable case classification has been added to ensure that among symptomatic cases, only clinically compatible cases are counted in this category. Additional equivalent name of 'chronic indeterminate phase' was added to the chronic intermediate phrase. 2020: Specified that single serological testing should rely on the IgG results. 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.

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 Surveillance
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

Most Recent ADHS Revision Year	2010
Most Recent CDC/CSTE Revision Year	2010
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	N/A

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.

***CHLAMYDIA TRACHOMATIS* INFECTION**	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 5 WORKING DAYS

CASE DEFINITION

Clinical Description

Chlamydia infection has a variable clinical course based on the serotype causing infection. Infection with *Chlamydia trachomatis* may result in urethritis, epididymitis, cervicitis, acute salpingitis, or other syndromes when sexually transmitted. However, infection with *C. trachomatis* may be asymptomatic. Perinatal infections may result in conjunctivitis and pneumonia among newborns. Other syndromes caused by *C. trachomatis* include lymphogranuloma venereum (LGV) and trachoma.

Laboratory Criteria for Surveillance

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

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.

LGV

LGV is a specific type of chlamydial infection, caused by the serovars L1, L2, and L3 of *C. trachomatis*. The following provides guidance for the classification of cases of *C. trachomatis* infection caused by LGV serovars.

Symptomatic LGV can be divided into three stages.

- The primary stage can include a small ulcer or lesion at the site of inoculation (genital, rectal, or oral/oropharyngeal sites).
- The secondary stage can include a syndrome featuring cervical, inguinal, and/or femoral lymphadenopathy that may rupture or an anorectal syndrome featuring proctocolitis (including mucoid or hemorrhagic rectal discharge, anal pain, constipation, fever, and/or tenesmus).
- Late stage LGV typically involves sequelae, such as genital elephantiasis, lymph node scarring, chronic colorectal fistulas and strictures, perirectal abscesses, and/or anal fissures.

LGV may also be asymptomatic.

Classification of LGV

Verified
A person with detection of LGV-specific antigen or nucleic acid in a clinical specimen. This includes asymptomatic cases.

Likely
A person with:

- Demonstration of *C. trachomatis* in a clinical specimen by detection of antigen or nucleic acid OR isolation of *C. trachomatis* by culture; AND
- Demonstration of clinical symptoms or signs consistent with LGV; AND
- No negative test for LGV-specific antigen or nucleic acid in a clinical specimen.

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

Most Recent ADHS Revision Year	2022
Most Recent CDC/CSTE Revision Year	2022
ADHS Case Definition Matches CDC/CSTE?	Yes

Description of changes	2022: LGV added back to the chlamydia definition to align with latest CSTE case definition. 2016: Nucleic acid detection added to the laboratory criteria for surveillance. 2013: LGV separated from ADHS chlamydia case definition.

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 Surveillance

- 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

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

COCCIDIOIDOMYCOSIS (Valley fever)	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 5 WORKING DAYS

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:

- Cough
- Fever or chills or night sweats
- Shortness of breath
- Chest or flank pain
- Headache
- Unintentional weight loss
- Myalgia (muscle pain)
- Arthralgia (joint pain) or bone pain
- Fatigue
- Abnormal lung findings on chest imaging (e.g., pulmonary infiltrates, nodule, or cavitary lesions) or report of pneumonia
- Single or multiple skin lesions
- Bone or joint abnormality (e.g., osteomyelitis, pathologic fracture)
- Meningitis, encephalitis, or focal brain lesion
- Abscess, granuloma, or lesion in other body system
- Erythema nodosum or erythema multiforme rash.

Laboratory Criteria for Surveillance

For the purposes of surveillance, laboratory evidence includes at least one of the following:

- Cultural, histopathologic, or cytopathological evidence of presence of *Coccidioides* species.
- Demonstration of *Coccidioides*-specific nucleic acid or proteins in a clinical specimen or isolate using a validated molecular assay (e.g., PCR, DNA Probe, MALDI-TOF).
- Detection of coccidioidal antibodies in serum, CSF, or other body fluids using:
    - Enzyme immunoassay (may be abbreviated as EIA or ELISA)
    - Immunodiffusion (may be abbreviated as ID, IMD, IMDF, IDTP, IDCF
    - Complement fixation (CF) with a titer of 1:2 or higher
    - Lateral flow assay (LFA)
    - Tube precipitin
    - Latex agglutination
- Detection of *Coccidioides* species antigen in serum, urine, CSF, or other body fluids.

Case Classification

Confirmed

A case that meets laboratory evidence.

Criteria to Distinguish a New Case from an Existing Case

A new case is a case not known to be previously reported and counted in any public health jurisdiction in the United States. There is no standardized system to check if a coccidioidomycosis case has been reported in another state; however, if it is known that a case was previously diagnosed or reported out-of-state, that case should not be reported again.

Reactivation of coccidioidomycosis can occur, particularly among patients with previous coccidioidomycosis who are later treated with immunosuppressive medications. Potential cases of reactivation should not be counted or reported unless they are known to have not been previously diagnosed or reported.

Multiple cases of coccidioidomycosis for the same patient should only be reported if reactivation of a previous infection can be ruled out (i.e., patient was reinfected) by whole genome sequencing (i.e., sequencing data indicate infection from distinct *Coccidioides* spp. lineages/strains).

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

Most Recent ADHS Revision Year	2023
Most Recent CDC/CSTE Revision Year	2023
ADHS Case Definition Matches CDC/CSTE?	No

Description of changes	2023: A more extensive list of clinical signs and findings has been added to match the CSTE definition; lab criteria have been updated to include cytopathological evidence, CF with a tier of 1:2 or greater and the elimination of the skin test. These match the CSTE case definition for high-incidence jurisdictions. 2020: Removed titer restrictions within the laboratory criteria to be consistent with laboratory reference ranges and the national case definition. Also, included additional laboratory tests (i.e., LFA and detection of *Coccidioides* species antigen). 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.

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 Surveillance

- 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 https://www.cdc.gov/ticks/forms/Tick_TBRD_FILL_508.pdf

CASE DEFINITION SUMMARY

Most Recent ADHS Revision Year	2005 or before
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	N/A

CONJUNCTIVITIS, ACUTE	REPORT OUTBREAKS ONLY

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 Surveillance
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

Most Recent ADHS Revision Year	2006
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	N/A

COVID-19 (2019 NOVEL CORONAVIRUS)	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 Novel Coronavirus. Also, see Multisystem Inflammatory Syndrome in Children (MIS-C) for individuals aged <21 years.

CASE DEFINITION

Laboratory Criteria for Surveillance

Laboratory evidence should use a method approved or authorized by the FDA or designated authority:

Confirmatory[1] laboratory evidence

- Detection of SARS-CoV-2 RNA in a clinical or post-mortem respiratory specimen using a molecular amplification test; OR
- Detection of SARS-CoV-2 by genomic sequencing[2].

Presumptive[1] laboratory evidence

- Detection of SARS-CoV-2 by antigen test in a clinical or post-mortem respiratory specimen.

Supportive[1] laboratory evidence

- Detection of SARS-CoV-2 specific antigen by immunocytochemistry; OR
- Detection of SARS-CoV-2 RNA or specific antigen using a test performed without CLIA oversight, on a case-by-case basis.

[1]The terms confirmatory, presumptive, and supportive are categorical labels used here to standardize case classifications for public health surveillance. The terms should not be used to interpret the utility or validity of any laboratory test methodology.

[2]Some genomic sequencing tests that have been authorized for emergency use by the FDA do not require an initial polymerase chain reaction (PCR) result to be generated. Genomic sequencing results may be all the public health agency receives.

Case Classification

Confirmed

Meets confirmatory laboratory evidence.

Probable

Meets presumptive laboratory evidence.

Additional Guidance
COVID-19-associated death classification is based on death certificates indicating COVID-19 or an equivalent term as an immediate, underlying, or contributing cause of death.

A person meeting the case definition for COVID-19 and for MIS-C should be entered in MEDSIS under both morbidities, and classified appropriately for each. For example, a confirmed MIS-C case will likely also count as a confirmed or probable COVID-19 case.

Supportive laboratory evidence may be helpful in providing additional information during a public health investigation, but should **not** be reported into MEDSIS in the absence of confirmatory or presumptive positive lab testing.

Criteria to Distinguish a New Case from an Existing Case (i.e., reinfections)
A new case should be created if a previously infected person meets the confirmed or probable case definition more than 3 months after the symptom onset date or first positive specimen collection date (whichever is earlier) from their previous infection. A new case should **not** be created or counted if within 3 months of a previously reported infection in the same individual except as outlined below.

Evidence of infection in the same person of SARS-CoV-2 from two distinct lineages or variants, based on whole genome sequencing, should be considered as separate cases even if within 3 months. ADHS will provide assistance, as needed, for identifying whether the sequencing results represent distinct lineages.

Per CDC, available evidence suggests that most recovered adults would have a degree of immunity for at least 90 days following initial diagnosis of laboratory-confirmed COVID-19 infection. The risk of reinfection may be increased in the future with exposure to SARS-CoV-2 variant virus strains that are not neutralized by immune antisera or possibly due to waning immunity. However, research is still ongoing and guidance will be updated as additional evidence emerges. Therefore, if a person who has recovered from COVID-19 has new symptoms of COVID-19, the person may need an evaluation for reinfection, especially if the person has had close contact with someone infected with COVID-19.

Some individuals (e.g., severely immunocompromised persons) can shed SARS-CoV-2 detected by molecular amplification tests >90 days after infection. For severely immunocompromised individuals, clinical judgment should be used to determine if a repeat positive test is likely to result from long-term shedding and, therefore, not be counted as a new case. CDC defines severe immunocompromised as certain conditions, such as being on chemotherapy for cancer, untreated human immunodeficiency virus (HIV) infection with CD4 T lymphocyte count <200, combined primary immunodeficiency disorder, and receipt of prednisone >20mg/day for more than 14 days.

Contact ADHS if you believe there is a reinfection within 3 months or if a case with a positive test more than 3 months after the symptom onset date appears to be the same case upon investigation.

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

None

CASE DEFINITION SUMMARY

Most Recent ADHS Revision Year	2023
Most Recent CDC/CSTE Revision Year	2023
ADHS Case Definition Matches CDC/CSTE?	No
Description of changes 4/5/2020	New CDC/CSTE case definition; added to Arizona case definition manual in April 2020. Compared to CDC/CSTE definition, ADHS has simplified the epidemiologic linkage by removing the travel-associated component, and more concisely defining “risk cohort” as well as what constitutes a close contact.
Description of changes 6/16/2020, based upon county health department input	Added language to the probable case classification using the vital record criterion, to clarify how to interpret confirmatory testing that has been conducted. When death certificate indicates COVID-19 was the cause of death or attributed to cause of death, if the test was within 3 days of death classify a case according to test results, if longer than 3 days prior to death then ignore test results, and classify according to death certificate.

Description of changes 9/16/2020	Removed serology as presumptive evidence, and moved serology into a suspect case classification. Removed negative test exclusion criterion (within 3 days of death) for classifying probable cases meeting vital records criteria. Include antigen-positive tests as probable cases regardless of meeting clinical criteria or epidemiologic linkage. Change new case creation to 3 months instead of 4 months based on revised CDC guidance.
Description of changes 3/29/2021	Removed supportive laboratory evidence and the suspect case classification. Added clarification that infections from two distinct lineages should be considered separate cases.
Description of changes 5/10/2021	Added clarification that reinfection after vaccination (i.e., vaccine breakthrough) in the same person should be considered a new case.
Description of changes 9/8/2021	Added genomic sequencing to confirmatory laboratory evidence. Added self tests/at-home tests to presumptive laboratory evidence. Added clarification on criteria to distinguish a new case from an existing case.
Description of changes 4/4/2022	Updated Additional Guidance to include the CSTE COVID-19 associated deaths guidance.
Description of changes 6/20/2022	Updated guidance on when to classify self tests/at-home tests as presumptive laboratory evidence, including when they should not be reported.
Description of Changes 2023	Removed clinical criteria and epidemiologic linkage. Also, removed antigen tests performed without CLIA oversight, and vital records criteria from the probable case classification. Updated death classification criteria.

CREUTZFELDT-JAKOB DISEASE	PROVIDERS SUBMIT A REPORT WITHIN 5 WORKING DAYS

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 Surveillance

Confirmatory laboratory evidence

- 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 (NPDPSC) 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 laboratory evidence

- 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 NPDPSC.

- 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/npdpsc/ 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

Variant 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

Most Recent ADHS Revision Year	2006
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	N/A

CRONOBACTER, INFANT	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 24 HOURS

Cases should be reported under the emerging or exotic disease requirement. Enter in MEDSIS under the *Cronobacter, Infant* (CBI) morbidity.

CASE DEFINITION

Background

Cronobacter species (spp.) are opportunistic pathogens that can cause illnesses and outbreaks of invasive infections in infants. *Cronobacter* spp. can survive in very dry places, hospitals, and home environments for a long period of time. Previous investigations of *Cronobacter* infection in infants have been linked to powdered infant formula. Initiating reportable surveillance for *Cronobacter* in infants (persons under 12 months of age) is crucial and it allows for prompt detection, enhances investigation efforts, and helps coordinated response efforts.

Clinical Criteria

In the absence of a more likely alternative diagnosis, an acute illness in an infant characterized by an invasive infection, including but not limited to meningitis, cerebral abscess, sepsis, necrotizing enterocolitis, or urinary tract infection.

Laboratory Criteria for Surveillance

Confirmatory laboratory evidence

Isolation by culture of Cronobacter spp. in a clinical specimen from a normally sterile site (e.g., blood or cerebrospinal fluid).

Supportive laboratory evidence

Isolation of Cronobacter spp. in a clinical specimen from a non-sterile site (e.g., stool or rectum, urine, skin, respiratory secretions, or broncho-alveolar lavage, etc.).

Epidemiologic Linkage Criteria

Epidemiologic risk factors within 7 days prior to illness onset in an infant:

- Consumption of powdered infant formula (PIF) implicated as the source of infection, OR
- Exposure to a non-PIF product, such as breast milk, implicated as the source of infection, OR
- Residing in a congregate setting (e.g., a neonatal intensive care unit [NICU]) with an active Cronobacter spp. outbreak.

Case Classifications

Confirmed

- Meets clinical criteria AND confirmatory laboratory evidence.

Probable

- Meets clinical criteria AND epidemiologic linkage criteria AND supportive laboratory evidence.

Suspect

- Meets clinical criteria AND supportive laboratory evidence, OR
- Meets clinical criteria AND epidemiologic linkage criteria.

Criteria to Distinguish a New Case from an Existing Case

A case should never be counted as a new case unless when:

- An infant originally counted as a suspect case with supportive laboratory evidence with specimen collection date for that classification within 90 days prior but now meets the confirmed case classification,
  OR
- WGS results indicate that a new positive specimen and a prior positive specimen are genetically distinct.

Comments

An infant is considered as a patient under the age of 12 months.

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 Cronobacter, Infant Investigation Form http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms

CASE DEFINITION SUMMARY

Most Recent ADHS Revision Year	2024
Most Recent CDC/CSTE Revision Year	2024
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	New CDC/CSTE case definition; added to Arizona case definition manual in 2024. Added background and comment sections.

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 Surveillance

Confirm*atory *laboratory evidence
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 laboratory evidence
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 surveillance 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

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

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 flatus, nausea, fatigue, and low-grade fever. Vomiting also may be noted. Relapses and asymptomatic infections can occur.

Laboratory Criteria for Surveillance
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

Most Recent ADHS Revision Year	2010
Most Recent CDC/CSTE Revision Year	2010
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	N/A

CYSTICERCOSIS	PROVIDERS SUBMIT A REPORT WITHIN 5 WORKING DAYS

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 Surveillance

Determination 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

Most Recent ADHS Revision Year	2006
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	N/A

DENGUE (Dengue, Severe dengue, Dengue-like illness)	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY

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/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 Surveillance

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 laboratory evidence

- 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[1] 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.

Presumptive laboratory evidence

- 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).

Supportive laboratory evidence

- 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.

[1] *In non-endemic areas such as Arizona, neutralization test (e.g., plaque reduction neutralization test) results in combination with detection of IgM anti-DENV in a serum specimen or CSF provide strong evidence of recent dengue virus infection. In conversations with CDC and other states, the final decision is often to interpret the dengue case definition with some flexibility (and in line with other arboviruses) and classify these as confirmed dengue cases.*

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

Most Recent ADHS Revision Year	2024
Most Recent CDC/CSTE Revision Year	2015
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	2024: Added a note regarding confirmatory testing (in presence of positive IgM and neutralization test anti-DENV) 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.

DIARRHEA, NAUSEA, OR VOMITING	REPORT OUTBREAKS ONLY

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

Most Recent ADHS Revision Year	2006
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	N/A

DIPHTHERIA	PROVIDERS SUBMIT A REPORT WITHIN 24 HOURS

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

- 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 Surveillance

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

Most Recent ADHS Revision Year	2019
Most Recent CDC/CSTE Revision Year	2019
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	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.

EHRLICHIOSIS	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 5 WORKING DAYS

CASE DEFINITION

Background

Ehrlichiosis is the general name given to the diseases caused by obligate intracellular bacteria in the genus *Ehrlichia* within the family Anaplasmataceae. *Ehrlichia* species are tickborne pathogens and are the most commonly reported species transmitted by *Amblyomma americanum,* the lone star tick. The majority of reported human infections are caused by either *Ehrlichia chaffeensis* or *Ehrlichia ewingii*. Most cases of ehrlichiosis occur across the south-central, southeastern, and mid-Atlantic states, although *Ehrlichia muris eauclairensis,* which is transmitted by *Ixodes scapularis*, the blacklegged tick, has been reported from travelers to, or residents of, Minnesota and Wisconsin.

Clinical Description

Ehrlichiosis typically presents 5 to 14 days after a tick bite with a combination of nonspecific clinical symptoms, such as fever, fatigue, and headache. Illness is often accompanied by laboratory abnormalities including leukopenia, thrombocytopenia, and mildly elevated liver enzymes. Ehrlichiosis is not known to be endemic in Arizona.

Clinical Criteria

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

Laboratory Criteria for Surveillance

Confirmatory laboratory evidence

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

Presumptive laboratory evidence

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

- Microscopic identification of intracytoplasmic morulae in leukocytes in a sample taken within 60 days of illness onset.

** Ehrlichia chaffeensis infection was formerly included in the category Human Monocytic Ehrlichiosis (HME); Ehrlichia ewingii infection was formerly included in the category Ehrlichiosis (unspecified, or other agent); Ehrlichia muris eauclairensis infection was formerly included in the category Undetermined Anaplasmosis/Ehrlichiosis.*

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

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

Case Classification**

Confirmed

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

Probable

- Meets presumptive laboratory evidence with fever as reported by patient or healthcare provider AND at least one other objective or subjective clinical evidence criterion (excluding chills/sweats); OR
- Meets presumptive laboratory evidence without reported fever but with chills/sweats AND:
  - at least one objective clinical evidence criterion; OR
  - two other subjective clinical evidence criteria.

Suspect

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

*** Patients should not be classified as cases for both anaplasmosis and ehrlichiosis based on serologic evidence alone.*

Criteria to Distinguish a New Case from an Existing Case

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

Comment

Diagnostic testing for ehrlichiosis is complicated by the close genetic relationship between *Anaplasma* and *Ehrlichia* species. Blood smears may reveal morulae within the cytoplasm of infected cells, and while they cannot always conclusively distinguish between *Anaplasma* and some *Ehrlichia* species, smears are the only rapid diagnostic available, and, in combination with surveillance data, the results can be informative. Serologic testing is commonly used to diagnose ehrlichiosis, but antibodies to *Anaplasma* and *Ehrlichia* can cross-react. The previous case definition for *E. chaffeensis* infection includes single positive immunoglobulin M (IgM) or immunoglobulin G (IgG) serologic assay results as laboratory evidence for probable cases, which is problematic.

In addition to the relatively low specificity of single positive serologic assay results, antibodies can persist for months or years following infection and may be detected in individuals with no clinical evidence of disease; overall, a single, mildly elevated titer is a poor indicator of current infection. The presence of IgG antibodies may reflect past exposures, and data suggest that IgG antibodies reactive to *Ehrlichia* spp. in asymptomatic individuals may be more common than previously thought. While accurately interpreting a single IgG test result is challenging, IgM antibodies have also proven to be unreliable indicators of infection. Further, some of the tests mentioned in the previous case definition (specifically ELISA and dot-ELISA) are no longer widely available and lack reliability.

Nationally, as of 2017, molecular methods were used to diagnose 40% of ehrlichiosis cases. Other methods, such as detection of antigen by immunohistochemistry, isolation in cell culture, or serological evidence of a fourfold change in IgG-specific antibody titer by indirect immunofluorescence assay (IFA) in paired serum samples are rarely reported. Additionally, when acute and convalescent serum samples documenting a four-fold change in IgG specific antibody titer are reported, many are rejected as samples were collected outside of the previous case definition's time parameters.

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

Most Recent ADHS Revision Year	2024
Most Recent CDC/CSTE Revision Year	2024
ADHS Case Definition Matches CDC/CSTE?	Yes

Description of changes	2024: • ADHS case definition revised to match CDC/CSTE. • Establishes new sub-categories for ehrlichiosis: *Ehrlichia chaffeensis*, *Ehrlichia ewingii*, *Ehrlichia muris eauclairensis*, and unspeciated *Ehrlichia*. • Removes 'Undetermined' option from case definition. • Added language to offer guidance on classifying cases with serology only reports for both *Ehrlichia* and *Anaplasma* spp. • Establish criteria for identifying new cases for surveillance purposes. Clinical criteria changes: • Separates clinical evidence criteria into objective and subjective categories. • Added nausea/vomiting as subjective clinical evidence. • Added fatigue/malaise as subjective clinical evidence. • Removes the requirement for fever as a clinical evidence criterion from confirmed cases. Lab criteria changes: • Removes ELISA, dot-ELISA, and single IgM test results from laboratory evidence for case classification (alone these are unreliable indicators of infection). • Added language to specify that specimens for serology and microscopy be collected within 60 days of illness onset. • Extended window for collecting convalescent specimen to up to 10 weeks. • Raised actionable IgG titer level to ≥1:128 from 1:64. 2018: Anaplasmosis split from ehrlichiosis, compatible with the listing in the reportable disease rules. ADHS case definitions revised in 2012 to match CDC/CSTE.

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*
- Carbapenemase-producing (CP) or pan-resistant carbapenem-resistant *Acinetobacter baumannii* (CP-CRAB)
- Carbapenemase-producing (CP) or pan-resistant carbapenem-resistant *Pseudomonas aeruginosa* (CP-CRPA)
- Cronobacter, Infant
- Influenza A Novel Virus
- Mpox (Monkeypox)
- Strongyloidiasis
- 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, AND
- 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

Most Recent ADHS Revision Year	Before 2012
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	N/A

ENCEPHALITIS, PARASITIC	PROVIDERS SUBMIT A REPORT WITHIN 24 HOURS

CASE DEFINITION

Parasitic encephalitis may be caused by free-living amebae, 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

Most Recent ADHS Revision Year	2017
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	2017: Split into four separate case definitions: Granulomatous Amebic Encephalitis (GAE) *Acanthamoeba* Disease excluding keratitis, Granulomatous Amebic Encephalitis (GAE)

	Balamuthia mandrillaris Disease, Primary Amebic Meningoencephalitis (PAM) *Naegleria fowleri* Disease, and Acanthamoeba keratitis (moved to non-reportable diseases). Definitions for free-living amebic infections moved into Encephalitis, parasitic in 2013.

ENCEPHALITIS, VIRAL	PROVIDERS SUBMIT A REPORT WITHIN 1 WORKING DAY

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

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

None

CASE DEFINITION SUMMARY

Most Recent ADHS Revision Year	2019
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	2019: Case definition modified to clarify its use. Case classifications have been removed.

***ESCHERICHIA COLI*, SHIGA TOXIN-PRODUCING**	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY

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 Surveillance

Confirmatory laboratory evidence

- 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 laboratory evidence

- 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 surveillance

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 surveillance:
    - 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 surveillance 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

Most Recent ADHS Revision Year	2018
Most Recent CDC/CSTE Revision Year	2018
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	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. 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. 2014: Modifications were made to the supportive laboratory results to match the 2014 CDC/CSTE case definitions. 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.

FOODBORNE DISEASE OUTBREAK	PROVIDERS SUBMIT A REPORT WITHIN 24 HOURS

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 Surveillance
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

Most Recent ADHS Revision Year	2011
Most Recent CDC/CSTE Revision Year	2011
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	N/A

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 Surveillance
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

Most Recent ADHS Revision Year	2011
Most Recent CDC/CSTE Revision Year	2011
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	N/A

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

Most Recent ADHS Revision Year	2013
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	Separated from *Burkholderia pseudomallei* in 2013 to reflect distinct clinical presentation.

GONORRHEA	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 5 WORKING DAYS

CASE DEFINITION

Clinical Description

Gonorrhea is a sexually transmitted infection caused by *Neisseria gonorrhoeae.* Gonococcal infection can result in urethritis, epididymitis, cervicitis, acute salpingitis, proctitis, pharyngitis, or other syndromes when sexually transmitted. However, infections at the endocervix, pharynx, and rectum are often asymptomatic. Perinatal exposure to endocervical infection may result in gonococcal conjunctivitis in newborns. Disseminated gonococcal infection (DGI) is an additional syndrome caused by *N. gonorrhoeae*.

Laboratory Criteria for Surveillance

Confirmatory laboratory evidence

- Isolation of *Neisseria gonorrhoeae* by culture of a clinical specimen, minimally with isolation of typical gram-negative, oxidase-positive diplococci, OR
- Detection of *N. gonorrhoeae* in a clinical specimen by:
    - nucleic acid amplification (e.g., polymerase chain reaction [PCR]), OR
    - hybridization with a nucleic acid probe

Presumptive laboratory evidence

- Observation of gram-negative intracellular diplococci in a urethral or an endocervical smear

Case Classification

Confirmed

Meets confirmatory laboratory evidence.

Probable

Meets presumptive laboratory evidence in the absence of confirmatory laboratory evidence.

Criteria to Distinguish a New Case from an Existing Case

For surveillance purposes, a new case of *N. gonorrhoeae* infection meets the following criteria:

- There is no evidence of a prior *N. gonorrhoeae* infection that has been reported as a case; OR
- There is evidence of a prior *N. gonorrhoeae* infection that has been reported as a case, but the prior infection's specimen collection date or treatment date was >30 days prior to the current infection's specimen collection date; OR
- There is evidence of a prior *N. gonorrhoeae* infection that has been reported as a case with a treatment date ≤30 days from the current infection's specimen collection date, AND there is evidence of re-infection.*

*Reinfection can occur from condomless sexual intercourse with a new partner, with an untreated partner, or with a treated partner prior to eradication of partner's infection (seven days post-treatment and after resolution of symptoms, if present).

Additional details can be found at https://www.cdc.gov/std/laboratory/de-duplication-guidance-june2016.pdf.

DGI

DGI occurs when *N. gonorrhoeae* from a mucosal site infection (urogenital, pharyngeal, rectal) invades the bloodstream and spreads to distant sites in the body. Clinical manifestations of DGI include petechial or pustular acral skin lesions, tenosynovitis, asymmetric polyarthralgia, bacteremia, oligoarticular septic arthritis, or on rare occasions, endocarditis, osteomyelitis, or meningitis. The following provides guidance for the classification of cases of *N. gonorrhoeae* infection that result in DGI.

Classification of DGI

Verified

Isolation or detection of *N. gonorrhoeae* from a disseminated site of infection (e.g., skin, synovial fluid, blood, or cerebrospinal fluid [CSF]) by culture or nucleic acid amplification test (NAAT).

Likely

Clinical manifestations of DGI without other known causes AND isolation or detection of *N. gonorrhoeae* from a mucosal site of infection by culture or nucleic acid amplification test (NAAT).

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

Most Recent ADHS Revision Year	2023
Most Recent CDC/CSTE Revision Year	2023
ADHS Case Definition Matches CDC/CSTE?	Yes

Description of changes	2023: Updated narrative section, clarifications on laboratory criteria, additional information on DGI and DGI classification, updated criteria to distinguish a new case. Removed antigen testing. 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.

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 amebae 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 amebae 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 Surveillance

Confirmatory laboratory evidence

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 surveillance

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. rhysodes*, *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

Most Recent ADHS Revision Year	2017
Most Recent CDC/CSTE Revision Year	2017
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	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.

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 ameba 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 amebae 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 Surveillance

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 surveillance

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

Most Recent ADHS Revision Year	2017
Most Recent CDC/CSTE Revision Year	2017
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	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.

***HAEMOPHILUS INFLUENZAE*, INVASIVE DISEASE**	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY

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 Surveillance

Confirmatory laboratory evidence

- 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 laboratory evidence

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

Case Classification

Confirmed

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

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

Most Recent ADHS Revision Year	2015
Most Recent CDC/CSTE Revision Year	2015
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	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. 2013: Minor revisions to ADHS case definition to better match CDC/CSTE.

HANSEN'S DISEASE (Leprosy)	PROVIDERS SUBMIT A REPORT WITHIN 5 WORKING DAYS

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* or *Mycobacterium lepromatosis*. 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 Surveillance

- 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

Most Recent ADHS Revision Year	2020
Most Recent CDC/CSTE Revision Year	2013
ADHS Case Definition Matches CDC/CSTE?	Yes (with exception of *Mycobacterium lepromatosis* in clinical description)
Description of changes	2020: Addition of *Mycobacterium lepromatosis* to the clinical description. 2013: ADHS case definition was updated to match the new 2013 CDC/CSTE case definition.

HANTAVIRUS INFECTION	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY

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 Surveillance

- 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

Most Recent ADHS Revision Year	2015
Most Recent CDC/CSTE Revision Year	2015

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

HEMOLYTIC UREMIC SYNDROME POST-DIARRHEAL (HUS, TTP)	PROVIDERS SUBMIT A REPORT WITHIN 1 WORKING DAY

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 Surveillance

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/mm^3, 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

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

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 Surveillance

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

Most Recent ADHS Revision Year	2019
Most Recent CDC/CSTE Revision Year	2019
ADHS Case Definition Matches CDC/CSTE?	No
Description of changes	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. Confirmed case definition matches CDC/CSTE case definition. Probable case definition is not part of the CDC/CSTE case definition (see 2013 explanation below). 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 CDC/CSTE case definition also does not specify criteria for what constitutes "elevated" liver aminotransferase levels.

HEPATITIS B, ACUTE	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 5 WORKING DAYS

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

- Jaundice; OR
- Elevated serum alanine aminotransferase (ALT) levels >200 IU/L; OR
- Total bili ≥ 3.0 mg/dL

Laboratory Criteria for Surveillance

Confirmatory laboratory evidence

Tier 1:

- Detection of IgM anti-HBc AND:
  - Detection of HBeAg; OR
  - Detection of HBsAg†; OR
  - Detection of HBV DNA††

  OR
- Detection of HbeAg, HBsAg†, or HBV DNA within 12 months of a negative HBsAg test (i.e. HBsAg seroconversion)

Tier 2:

- Detection of HBsAg† AND IgM anti-HBc is not done or not available; OR
- Detection of HBV DNA†† AND IgM anti-HBc is not done or not available

Presumptive laboratory evidence

- Detection of IgM anti-HBc AND HBsAg, HbeAg, HBV DNA are negative or not done

† If information on HBsAg test method is available and HBsAg confirmatory neutralization was performed as recommended, HBsAg positive by confirmatory neutralization.
†† DNA detection by nucleic acid test, including qualitative, quantitative, or genotype testing

Case Classification

Confirmed

- Meets Tier 1 confirmatory laboratory evidence criteria; OR
- Meets clinical criteria AND meets Tier 2 confirmatory laboratory evidence.

Probable

- Meets clinical criteria AND has presumptive laboratory evidence.

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

Most Recent ADHS Revision Year	2024
Most Recent CDC/CSTE Revision Year	2024
ADHS Case Definition Matches CDC/CSTE?	Yes

Description of changes	2024: ADHS case definition was updated to match the approved CDC/CSTE. 2016: Clarification added about confirmatory HBsAg test results from the same specimen. 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 probable before 2013.

HEPATITIS B, CHRONIC	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 5 WORKING DAYS

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 Surveillance

Confirmatory laboratory evidence

- Detection of HBsAg† in two clinical specimens taken ≥ 6 months apart, OR
- Detection of HBeAg in two clinical specimens taken ≥ 6 months apart, OR
- Detection of [HBsAg† OR HBeAg] AND total anti-HBc, OR
- Detection of HBsAg† AND HBeAg, OR
- Detection of HBV DNA.

Presumptive laboratory evidence

- Detection of [HBsAg† OR HBeAg] AND IgM anti-HBc test negative, not done, or result not available

† If information on HBsAg test method is available and HBsAg confirmatory neutralization was performed as recommended, HBsAg positive by confirmatory neutralization.

Case Classification

Confirmed

Meets confirmatory laboratory evidence.

Probable

Meets presumptive laboratory evidence.

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

Most Recent ADHS Revision Year	2024
Most Recent CDC/CSTE Revision Year	2024
ADHS Case Definition Matches CDC/CSTE?	Yes

Description of changes	2024: ADHS case definition was updated to match the approved CDC/CSTE. 2016: Clarification added about confirmatory HBsAg test results from the same specimen.

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 Surveillance
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

Most Recent ADHS Revision Year	2017
Most Recent CDC/CSTE Revision Year	2017
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	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.

HEPATITIS C, ACUTE	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 5 WORKING DAYS

CASE DEFINITION

Clinical Description

All HCV cases in each classification category should be >36 months of age, unless known to have been exposed non-perinatally.

Clinical Criteria

One or more of the following:

- Jaundice, OR
- Peak elevated total bilirubin levels ≥ 3.0 mg/dL, OR
- Peak elevated serum alanine aminotransferase (ALT) levels >200 IU/L,

AND

The absence of a more likely diagnosis (which may include evidence of acute liver disease due to other causes or advanced liver disease due to pre-existing chronic HCV infection or other causes, such as alcohol exposure, other viral hepatitis, hemochromatosis, etc.)

Laboratory Criteria for Surveillance

Confirmatory laboratory evidence

- Positive hepatitis C virus detection test: Nucleic acid test (NAT) for HCV RNA positive (including qualitative, quantitative, or genotype testing), OR
- A positive test indicating presence of hepatitis C viral antigen(s) (HCV antigen)

Presumptive laboratory evidence

A positive test for antibodies to hepatitis C virus (anti-HCV).

Case Classification

Confirmed

- A case that meets clinical criteria and has confirmatory laboratory evidence, OR
- A documented negative HCV antibody followed within 12 months by a positive HCV antibody test (anit-HCV test conversion) in the absence of a more likely diagnosis, OR
- A documented negative HCV antibody **OR** negative hepatitis C virus detection test (in someone without a prior diagnosis of HCV infection) followed within 12 months by a positive hepatitis C virus detection test (HCV RNA test conversion) in the absence of a more likely diagnosis.

Probable

- A case that meets clinical criteria and has presumptive laboratory evidence, AND
- Does not have a hepatitis C virus detection test reported, AND
- Has no documentation of anti-HCV or HCV RNA test conversion within 12 months.

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, unless there is laboratory evidence of re-infection.

*Based on ADHS guidelines

Comment

A new acute case is an incident case that is over the age of 36 months and has not previously been reported meeting case criteria for chronic hepatitis C or for whom there is laboratory evidence of re-infection. Cases under the age of 36 months should be classified as Perinatal HCV unless the exposure mode is not perinatal (e.g., healthcare acquired).

CDC encourages all jurisdictions to track negative HCV viral detection tests to document both spontaneous clearance of infection or sustained viral response to HCV treatment. Cases that have evidence of having cleared the infection at time of initial report or are considered false positive should not be reported to CDC.

Acute cases determined via anti-HCV test conversion do not need to have a positive HCV viral detection test reported to be considered confirmed acute cases.

A new probable acute case may be reclassified as confirmed acute if a positive HCV viral detection test is reported in the same reporting year (e.g., prior to data closing for the calendar year).

Collection of risk history data is recommended for probable and confirmed acute HCV cases. Timing of risk history data to collect ranges from 2 weeks to 12 months prior to symptom onset or diagnosis. The time frame to employ depends on the method of classification (e.g. if a case meets clinical criteria and has a positive HCV detection test, a risk history time frame of 2 weeks to 6 months prior to onset should be used; for a case classified via anti-HCV test conversion or HCV RNA test conversion, 2 weeks to 12 months prior to onset should be considered).

If evidence indicating resolution of infection is received after a confirmed acute case has been reported to CDC, the case report does not need to be modified as it was a confirmed case at the time of initial report. However, negative HCV viral detection test results received on confirmed acute case, subsequent to an initial positive result, should be appended to case reports, as feasible, and considered for the purpose of data analysis by each jurisdiction.

For probable acute cases, the presence of a negative HCV viral detection test result, in the absence of criteria that would allow for confirmation, indicates that a case should not be classified as probable acute and should not be reported to CDC.

A confirmed acute case may be classified as a confirmed chronic case if a positive HCV viral detection test 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 viral detection test). For purposes of incidence and prevalence calculations, confirmed acute and chronic HCV cases should be counted.

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

Most Recent ADHS Revision Year	2020
Most Recent CDC/CSTE Revision Year	2020
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	2020: Changes are based on modifications to CDC/CSTE definition and affect all sections (Clinical Criteria, Laboratory Criteria, Classification, Comments). 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. 2013: ADHS case definition updated to match CDC/CSTE definition.

HEPATITIS C, CHRONIC	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 5 WORKING DAYS

CASE DEFINITION

Clinical Description

All HCV cases in each classification category should be >36 months of age, unless known to have been exposed non-perinatally.

Clinical Criteria

One or more of the following:

- Jaundice, OR
- Peak elevated total bilirubin levels ≥ 3.0 mg/dL, OR
- Peak elevated serum alanine aminotransferase (ALT) levels >200 IU/L,

AND

The absence of a more likely diagnosis (which may include evidence of acute liver disease due to other causes or advanced liver disease due to pre-existing chronic HCV infection or other causes, such as alcohol exposure, other viral hepatitis, hemochromatosis, etc.)

Laboratory Criteria for Surveillance

Confirmatory laboratory evidence

- Positive hepatitis C virus detection test: Nucleic acid test (NAT) for HCV RNA positive (including qualitative, quantitative, or genotype testing), OR
- A positive test indicating presence of hepatitis C viral antigen(s) (HCV antigen)

Presumptive laboratory evidence

A positive test for antibodies to hepatitis C virus (anti-HCV).

Case Classification

Confirmed

- A case that does not meet **OR** has no report of clinical criteria, AND
- Has confirmatory laboratory evidence, AND
- Has no documentation of anti-HCV or HCV RNA test conversion within 12 months.

Probable

- A case that does not meet **OR** has no report of clinical criteria, AND
- Has presumptive laboratory evidence, AND
- Has no documentation of anti-HCV or RNA test conversion within 12 months, AND
- Does not have an HCV RNA detection test reported.

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, unless there is evidence of re-infection.

*Based on ADHS guidelines

Comment

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%), and 10-20% develop cirrhosis over the next 20-30 years. Among HCV-infected persons with cirrhosis, there is an annual risk of 1-5% for developing hepatocellular carcinoma. 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.[1]

CDC encourages all jurisdictions are encouraged to track negative HCV viral detection tests to document both spontaneous clearance of infection or sustained viral response to HCV treatment. Cases that have evidence of having cleared the infection at time of initial report or are considered false positive should not be reported to CDC.

If evidence indicating resolution of infection is received after a confirmed chronic case has been reported to CDC, the case report does not need to be modified as it was a confirmed case at the time of initial report. However, negative HCV viral detection test results received on confirmed chronic cases, subsequent to an initial positive result, should be appended to case reports, as feasible, and considered for the purpose of data analysis by each jurisdiction.

Evidence for re-infection may include a case of confirmed chronic HCV infection that has at least two sequential negative HCV viral detection tests reported, indicative of treatment initiation and sustained virologic response, followed by a positive HCV viral detection test. Under current treatment recommendations, those two negative tests should be at least three months apart; however, the timing may change as standard of care for HCV treatment evolves. Other evidence of reinfection should be considered, including a report of a new genotype on a case that has previously cleared a different genotype. Jurisdictions are encouraged to ensure that cases of HCV treatment failure are not classified as new cases of HCV infection to the extent that it can be determined. Jurisdictions tracking re-infection should also consider collecting data on prior treatment completion (when relevant and possible to document), treatment failure, change in reported genotype if that applies, and the known time frame for reinfection.

For probable chronic cases, the presence of a negative HCV viral detection test result, in the absence of criteria that would allow for confirmation, indicates that a case should not be classified as probable chronic and should not be reported to CDC.

A new chronic case is a newly reported case that does not have evidence of being an acute case of HCV infection. A confirmed acute case may be classified as a confirmed chronic case if a positive HCV viral detection test 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 viral detection test). For purposes of incidence and prevalence calculations, confirmed chronic HCV cases should be counted.

Jurisdictions are also encouraged to track and classify possible re-infection cases that may have been previously submitted to CDC as a confirmed or probable chronic HCV infection case. Jurisdictions tracking re-infection should also consider collecting data on prior treatment completion (when relevant

and possible to document), treatment failure, change in reported genotype if that applies, and the known time frame for reinfection.

[1]Statistics 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

Most Recent ADHS Revision Year	2020
Most Recent CDC/CSTE Revision Year	2020
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	2020: Changes are based on modifications to CDC/CSTE definition and primarily affect the Comments. 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. 2013: ADHS definition was edited to match CDC/CSTE by removing an outdated laboratory criterion for surveillance

HEPATITIS C, PERINATAL	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 5 WORKING DAYS

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 for Surveillance

- 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

Most Recent ADHS Revision Year	2018
Most Recent CDC/CSTE Revision Year	2018
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	2018: New CDC/CSTE case definition.

HEPATITIS D	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 5 WORKING DAYS

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 Surveillance

- 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

Most Recent ADHS Revision Year	2013
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	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 Surveillance

Confirmatory laboratory evidence

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 laboratory evidence

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

Most Recent ADHS Revision Year	2014
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	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.

HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION AND RELATED DISEASE	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 5 WORKING DAYS

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 for Surveillance

- 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 surveillance 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/µL 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/µL or CD4+ T-lymphocyte percentage of total lymphocytes of 14--28.

HIV Infection, Stage 3 (AIDS)
CD4+ T-lymphocyte count of <200 cells/µL 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/µL 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 Surveillance

- 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(I) 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

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

INFLUENZA	LABORATORIES SUBMIT A REPORT WITHIN 5 WORKING DAYS

CASE DEFINITION

Laboratory Criteria for Surveillance

- 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 surveillance.

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.

If different flu seasons, count as separate cases.

When two or more different types (A, B) or subtypes (H3, H1) are identified from the same individual, these should be treated as separate cases, unless one or both results are from rapid diagnostic tests. For example, the following results should be treated as two separate cases:

- PCR type A and PCR type B
- PCR A(H3) and PCR A(H1N1)

While the following pairs would each be treated as a single case:

- rapid A+ and rapid B+ (categorized as type unknown)
- rapid A+ and PCR B+ (categorized as type B)

For questions, consult with the ADHS influenza team (flu@azdhs.gov) or refer to the current season's Influenza Case Classification Guide in MEDSIS > Resources > Surveillance and Investigation Resources > Influenza Resources.

*Based on ADHS guidelines

CONTROL MEASURES

None

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Most Recent ADHS Revision Year	2023
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	2023: Removed the Clinical Description from the case definition. 2020: Removed appendix with Influenza Case Classification Guide, and listed the relevant components in the “Critieria to Distinguish a New Case”. 2019: Removed comment about usage of rapid diagnostic tests to align with the changes starting in Summer 2018 regarding how rapid tests are counted.

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 Surveillance
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

Most Recent ADHS Revision Year	2006
Most Recent CDC/CSTE Revision Year	2004
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	N/A

INFLUENZA A NOVEL VIRUS	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 24 HOURS

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 Surveillance
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 unsubtypable 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

Most Recent ADHS Revision Year	2013
Most Recent CDC/CSTE Revision Year	2013
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	2013: New CDC/CSTE case definition.

LEGIONELLOSIS (Legionnaires' disease)	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY

CASE DEFINITION

Clinical Description

Legionellosis is associated with three clinically and epidemiologically distinct illnesses: Legionnaires' disease, Pontiac fever, or extrapulmonary legionellosis.

Clinical compatibility for surveillance purposes for each of these illnesses is defined below:

Clinical Compatibility	Legionnaires' disease	Pontiac fever	Extrapulmonary legionellosis
Pneumonia (clinical or radiographic)	Yes	No	No
Other clinical features	Fever, myalgia, and cough. These symptoms are typical but not required; additional symptoms (e.g., shortness of breath, headache, confusion, nausea, diarrhea) may be present.	A milder illness without pneumonia. A flu-like illness, often with fever, chills, headache, myalgia, fatigue, malaise; less often with symptoms such as cough or nausea.	Clinical evidence of disease at an extrapulmonary site. *Legionella* can cause disease at sites outside the lungs (for example, associated with endocarditis, wound infection, joint infection, graft infection).

Laboratory Criteria for Surveillance

Confirmatory laboratory evidence

- Isolation of any *Legionella* organism from respiratory secretions, lung tissue, pleural fluid, or extrapulmonary site.
- Detection of any *Legionella* species from lower respiratory secretions, lung tissue, pleural fluid, or extrapulmonary site by a validated nucleic acid amplification test.
- Detection of *Legionella pneumophila* serogroup 1 antigen in urine using validated reagents.
- Seroconversion, a fourfold or greater rise in specific serum antibody titer to *Legionella pneumophila* serogroup 1, using validated reagents.

Supportive laboratory evidence

- Seroconversion, a 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).
- Seroconversion, a fourfold or greater rise in antibody titer, to multiple species of *Legionella* using pooled antigen.
- Detection of specific *Legionella* antigen or staining of the organism in lower respiratory secretions, lung tissue, pleural fluid, or extrapulmonary site associated with clinical disease by direct fluorescent antibody (DFA) staining, immunohistochemistry (IHC), or other similar method, using validated reagents.

Epidemiologic Linkage

Epidemiologic link to a setting with a positive environmental sampling result of *Legionella* (such as from a cruise ship, public accommodation, cooling tower, etc.).

Case Classification

Confirmed

A clinically compatible case that meets at least one of the confirmatory laboratory criteria[1].

Probable

- Legionnaires' Disease: A clinically compatible case with an epidemiologic link during the 10 days before onset of symptoms.
- Pontiac fever: A clinically compatible case with an epidemiologic link during the 3 days before onset of symptoms.

Suspect

A clinically compatible case that meets at least one of the supportive laboratory criteria[1].

[1]For extrapulmonary legionellosis there must be laboratory evidence of *Legionella* at an extrapulmonary site.

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.*

On a case-by-case basis the following critieria can be used, regardless of the interval between laboratory results: An individual should be considered a new case if their previous illness was followed by a period of recovery prior to acute onset of clinically compatible symptoms and subsequent laboratory evidence of infection.

*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

Most Recent ADHS Revision Year	2020
Most Recent CDC/CSTE Revision Year	2020
ADHS Case Definition Matches CDC/CSTE?	No
Description of changes	2020: Moved nucleic acid amplification test (i.e., PCR) from supportive to confirmatory laboratory evidence, added extrapulmonary legionellosis as an illness, and added an epidemiological link which is used in a new probable case classification. These changes are based on modifications to CDC/CSTE definition. The ADHS epidemiological linkage requires more

	definitive confirmation of the source than the criteria in the CDC/CSTE definition. ADHS clinical criteria also differ slightly from the CDC/CSTE definition. The ADHS Epidemiological Classification section (travel and healthcare association) did not change in 2020 and is not defined in the CDC/CSTE case definition. 2019: Clinical compatibility language was clarified (pneumonia is sufficient for clinical compatibility for Legionnaire's disease) and the classification table removed. 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.

LEPTOSPIROSIS	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY

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 Surveillance

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 laboratory evidence

- 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 laboratory evidence

- *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

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

LISTERIOSIS (*Listeria monocytogenes*)	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY

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 Surveillance

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 surveillance; 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 surveillance from products of conception; OR
- A clinically compatible neonate whose mother meets confirmatory or presumptive laboratory evidence for surveillance 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 surveillance; 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

Most Recent ADHS Revision Year	2019
Most Recent CDC/CSTE Revision Year	2019
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	2019: Clarified classification of maternal and neonatal cases by adding epi linkages and accounting for isolation of *L. monocytogenes* from neonatal specimens or products of conception; included CIDT in the laboratory criteria (classified as probable); and accounted for *L. monocytogenes* isolated from non-sterile sites (classified as suspect). Changes based on modifications to CDC/CSTE definition. Mid-2019 revision: Clarified that serological testing should not be considered CIDT, per CDC.

LYME DISEASE	PROVIDERS SUBMIT A REPORT WITHIN 5 WORKING DAYS

CASE DEFINITION

Clinical Presentation

A systemic, tick-borne disease characterized by **one of the following early or late-stage manifestations**, as reported by a healthcare provider, and in the absence of another known etiology:

- Erythema migrans (EM) rash: For purposes of surveillance, EM is defined as a skin lesion (observed by a healthcare provider) 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.

  Note: 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. 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.

- 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.

  Note: Objective joint swelling may sometimes be followed by chronic arthritis in one or a few joints.

- 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.

  Note: 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

  Note: Atrioventricular conduction defects may sometimes be associated with myocarditis.

Laboratory Criteria for Surveillance

For the purposes of surveillance, the laboratory evidence includes:

Confirmatory laboratory evidence

- A positive culture for *Borrelia burgdorferi* or *B. mayonii*, OR
- Detection of *B. burgdorferi* or *B. mayonii* in a clinical specimen by a *B. burgdorferi* group-specific NAAT assay, OR

- Detection of *B. burgdorferi* group-specific antigens by immunohistochemical assay on biopsy or autopsy tissues, OR
- Positive serologic tests[1] in a two-tier or equivalent format, including:

    - Standard two-tier test (STTT):
        - a positive or equivocal first-tier screening assay, often an enzyme immunoassay [EIA] or immunofluorescence assay [IFA] for IgM, IgG, or a combination of immunoglobulins, followed by
        - a concordant positive IgM[2] or IgG[3] immunoblot interpreted according to established criteria, OR
    - Modified two-tier test (MTTT):
        - Positive or equivocal first-tier screen, followed by
        - a different, sequential positive or equivocal EIA in lieu of an immunoblot as a second-tier test[4]

Presumptive laboratory evidence

- A positive single-tier IgG[3] WB test for Lyme disease, without positive or equivocal first-tier screening assay.

[1]Currently, there are no serologic tests available for B. mayonii infection, but cross-reactivity with B. burgdorferi testing may occur.

[2]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.*

[3]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.*

[4]The MTTT algorithm should be performed using assays specifically cleared by the US Food and Drug Administration (FDA) for this purpose. (Mead et al, 2019)

** Depending upon the assay, OspC could be indicated by a band of 21, 22, 23, 24, or 25 kDa.*

Case Classification

Low-incidence jurisdictions are those with a disease incidence of <10 confirmed cases / 100,000 population for a period of three consecutive years. Once ≥10 confirmed cases / 100,000 population have been observed in a low-incidence jurisdiction for a period of three consecutive years, they become a high-incidence jurisdiction for the purposes of surveillance and should permanently switch reporting criteria. Arizona is currently considered a low-incidence jurisdiction.

A clinically compatible case is defined as a case that meets the clinical criteria defined above (under Clinical Presentation).

Low-incidence jurisdictions (as defined above)

- **Confirmed**: A clinically compatible case that meets confirmatory laboratory criteria.
- **Probable**: A clinically compatible case that meets presumptive laboratory criteria.
- **Suspect**:
    - A case that meets confirmatory or presumptive laboratory criteria, but no clinical information is available, OR
    - A case of erythema migrans rash with no laboratory evidence of infection.

Note: This CSTE case definition is intended solely for public health surveillance purposes and does not recommend diagnostic criteria for clinical partners to utilize in diagnosing patients with Lyme Disease.

Criteria to Distinguish a New Case from an Existing Case

A new case is one that has not been reported within the same calendar year (January through December). Using a calendar year allows case counting which more closely corresponds with the seasonality of Lyme disease than using a number of months between case reports.

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”.

High-incidence jurisdictions are those with an average Lyme disease incidence of at least 10 confirmed cases / 100,000 for the previous three reporting years. At the time of this statement (spring 2021), those jurisdictions are: Connecticut, Delaware, Maine, Maryland, Massachusetts, Minnesota, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermond, Virginia, West Virginia, Wisconsin, and the District of Columbia (http://www.cdc.gov/lyme/stats/tables.html).

For high-incidence jurisdictions a probable case must meet confirmatory laboratory evidence and a suspect case must meet presumptive laboratory evidence.

For determining incidence for case classification and reporting purposes, calculations should be made at the state or territory level. Case classification for reporting should not be differentially applied at the subdivision level.

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

Most Recent ADHS Revision Year	2023

Most Recent CDC/CSTE Revision Year	2022
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	2023: Moved case classification of high-incidence jurisdictions to the comments section. 2022: Added differentiation of case classification based on incidence; increased specificity within the probable case classification used by low-incidence states by removing “other physician diagnoses”; single-tier IgG immunoblot moved to presumptive testing; updated and expanded laboratory criteria for evidence of infection; updated criteria to distinguish a new case from an existing case. 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. 2013: ADHS definition changed to match CDC/CSTE.

LYMPHOCYTIC CHORIOMENINGITIS	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY

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 Criteria for Surveillance

Confirmatory laboratory evidence

- Isolation of the lymphocytic choriomeningitis virus
- Polymerase chain reaction (PCR) for LCMV

Presumptive laboratory evidence

- 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

Most Recent ADHS Revision Year	Before 2013
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	N/A

MALARIA	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 5 WORKING DAYS

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 Surveillance

- 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 unspeciated 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

Most Recent ADHS Revision Year	2017
Most Recent CDC/CSTE Revision Year	2014
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	2017: Added criteria to distinguish a new case from an existing case to match 2013 CDC/CSTE case definition. 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 unspeciated parasite; modifications were made to match the 2014 CDC/CSTE case definition.

MEASLES (Rubeola)	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 24 HOURS

CASE DEFINITION

Clinical Description

An acute illness characterized by:

- A generalized, maculopapular rash lasting ≥3 days; AND
- A temperature ≥101.0°F (≥38.3°C); AND
- Cough, coryza, or conjunctivitis.

Laboratory Criteria for Surveillance

- 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 surveillance listed above; OR
- Direct epidemiologic linkage to a case confirmed by one of the laboratory criteria for surveillance 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 ≥101°F/38.3°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

Most Recent ADHS Revision Year	2013
Most Recent CDC/CSTE Revision Year	2013
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	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.

MELIOIDOSIS (*Burkholderia pseudomallei)*	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY

CASE DEFINITION

Clinical Description

Clinical presentation of the disease varies on a case-by-case basis. The following characteristics are typical of melioidosis (also known as Whitmore's Disease).

- 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.

Clinical Criteria

In the absence of a more likely diagnosis, at least one of the following signs or symptoms:

- Fever (temperature > 38.0°C [100.4°F])
- Muscle aches
- Ulcer
- Nodule
- Skin abscess
- Pneumonia
- Headache
- Chest pain
- Anorexia
- Respiratory distress
- Abdominal discomfort
- Joint pain
- Disorientation
- Weight loss
- Seizure
- Organ abscess (liver, lung, spleen, prostate, or brain)
- Encephalomyelitis/meningitis/extra-meningeal disease

Laboratory Criteria for Surveillance

Confirmatory laboratory evidence

- Isolation of *B. pseudomallei* from a clinical specimen.

Presumptive laboratory evidence

- Evidence of a fourfold or greater rise in *B. pseudomallei* antibody titer by indirect hemagglutination assay (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 nucleic acid amplification test) in a clinical specimen

Supportive laboratory evidence

- Single *B. pseudomallei* total antibody titer of greater than or equal to 1:40 by serology in one or more serum specimens.

Epidemiologic Linkage

A person with at least one of the following findings:

- History of travel to or residency in a region endemic for melioidosis, OR
- Known exposure to *B. pseudomallei* as a result of intentional release or known product/source exposure (outside of laboratory), OR
- Known exposure to *B. pseudomallei* as a result of an occupational risk (i.e. laboratory exposure)

Vital Records Criteria

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

Other Criteria

- A person whose healthcare record contains a recent diagnosis of melioidosis.

Case Classification

Confirmed

A case that meets the confirmatory laboratory criteria, with or without clinical evidence.

Probable

A case that meets:

- Clinical criteria AND presumptive laboratory evidence AND epidemiologic linkage, OR
- Vital records criteria AND presumptive laboratory evidence AND epidemiologic linkage, OR
- Other criteria AND presumptive laboratory evidence AND epidemiologic linkage.

Suspect

A case that meets:

- Clinical criteria AND supportive laboratory evidence AND epidemiologic linkage, OR
- Vital records criteria AND supportive laboratory evidence AND epidemiologic linkage, OR
- Other criteria AND supportive laboratory evidence AND epidemiologic linkage.

Criteria to Distinguish a New Case from an Existing Case

Recurrent melioidosis can be defined as a re-presentation with *B pseudomallei* culture-positive clinical disease occurring <18 months following initial diagnosis and after the time designated for treatment completion (both intravenous and oral phases) for the previous episode, irrespective of whether the patient was adherent to the therapy or initially lost to follow-up. Recurrent cases will not be counted as a new case for surveillance purposes. Epidemiological and exposure information can be used to determine if it is a new or recurrent infection, as can whole genome sequencing, if an isolate is available.

An infection would be counted as a new infection if a person is culture-positive within an 18-month time period with an isolate that is distinct from the previous infection by whole genome sequencing.

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

Most Recent ADHS Revision Year	2023
Most Recent CDC/CSTE Revision Year	2023
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	2023: Expanded the list of clinical signs and symptoms; added a suspect case classification and moved the epidemiological criteria in a separate section. Also Vital Records and Other criteria and the criteria to distinguish a new case were added to match the CDC/CSTE definition. 2013: edited content to match CDC/CSTE. Moved *B. mallei* to a separate case definition.

MENINGOCOCCAL INVASIVE DISEASE	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 24 HOURS

CASE DEFINITION

Clinical Description

Meningococcal disease presents most commonly as meningitis and/or meningococcemia that may progress rapidly to purpura fulminans, shock, and death. However, other manifestations may be observed.

Laboratory Criteria for Surveillance

Confirmatory laboratory evidence

- 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 laboratory evidence

- 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 surveillance.

Probable

A case that meets the presumptive laboratory criteria for surveillance.

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

Most Recent ADHS Revision Year	2015
Most Recent CDC/CSTE Revision Year	2015
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	2015: PCR of normally sterile sites specimen moved from a presumptive to confirmatory test, matching the CDC/CSTE change.

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 Surveillance

Confirmatory laboratory evidence

- 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 cefoxitin**, 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 *S. aureus* MIC (Minimum Inhibitory Concentration) Tests			
	Susceptible	**Intermediate**	**Resistant**
Oxacillin	≤ 2 µg/ml	N/A	≥ 4 µg/ml
Cefoxitin	≤ 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.

** Cefoxitin is used as a surrogate for oxacillin; report oxacillin susceptible or resistant based on the cefoxitin result. If both cefoxitin and oxacillin are tested against *S. aureus* and either result is resistant, the organism should be reported as oxacillin resistant.

Presumptive laboratory evidence

Identification of MRSA 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 laboratory criteria for surveillance.

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 R9-6-358 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

Most Recent ADHS Revision Year	2020

Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	2020: Presumptive laboratory evidence added to allow for tests other than culture. Presumptive laboratory evidence used for a new probable definition. 2017: MIC values updated and table added.

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
Severe illness Fever[1] *and* pneumonia or acute respiratory distress syndrome (based on clinical or radiological evidence)	and	A history of travel from countries in or near the Arabian Peninsula[2] within 14 days before symptom onset, *or* close contact[3] with a symptomatic traveler who developed fever[1] and acute respiratory illness (not necessarily pneumonia) within 14 days after traveling from countries in or near the Arabian Peninsula[2]. *– or –* A member of a cluster of patients with severe acute respiratory illness (e.g., fever[1] and pneumonia requiring hospitalization) of unknown etiology in which MERS is being evaluated, in consultation with state and local health departments in the US.
Milder illness Fever[1] *and* symptoms of respiratory illness (not necessarily pneumonia; e.g., cough, shortness of breath)	and	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 Peninsula[2] in which recent healthcare-associated cases of MERS have been identified.
Fever[1] *or* symptoms of respiratory illness (not necessarily pneumonia; e.g., cough, shortness of breath)	and	Close contact[3] with a confirmed MERS case while the case was ill.

Laboratory Criteria for Surveillance

Confirmatory laboratory evidence

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 contact[3] 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

Most Recent ADHS Revision Year	2016
Most Recent CDC/CSTE Revision Year	2015
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	2016: Case definition was added to this manual.

MPOX (MONKEYPOX)	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 24 HOURS

Cases should be reported under the emerging or exotic disease requirement. Enter in MEDSIS as Mpox (Monkeypox).

CASE DEFINITION

Clinical Description

Mpox (formerly Monkeypox) usually begins with fever, headache, muscle aches, and exhaustion. It also causes lymph nodes to swell (lymphadenopathy). Shortly after the onset of other symptoms, a rash appears. Lesions typically begin to develop simultaneously and evolve together on any given part of the body. The evolution of lesions progresses through four stages – macular, papular, vesicular, to pustular – before scabbing over and resolving. Rash lesions caused by Mpox virus (MPXV—a member of the orthopoxvirus family) infection can be confused with other diseases that are more commonly encountered in clinical practice (e.g., syphilis, herpes, and varicella zoster; co-infections have been documented). Individuals suspected of having mpox virus infection should also receive diagnostic work-up for other, more common infections, as indicated by the clinical presentation.

Laboratory Criteria for Surveillance

Confirmatory laboratory evidence

- Detection of MPXV nucleic acid by molecular testing in a clinical specimen; OR
- Detection of MPXV by genomic sequencing in a clinical specimen.

Presumptive laboratory evidence*

- Detection of orthopoxvirus nucleic acid by molecular testing in a clinical specimen; OR
- Detection of presence of orthopoxvirus by immunohistochemistry in tissue; OR
- Detection of orthopoxvirus by genomic sequencing in a clinical specimen; OR
- Detection of anti-orthopoxvirus IgM antibody using a validated assay on a serum sample drawn 4–56 days after rash onset, with no recent history (last 60 days) of vaccination**.

**Since the 2022 outbreak, there have been no other circulating orthopoxviruses detected in the United States, so a positive test is probable for mpox infection. If an individual meets presumptive laboratory evidence but has a plausible exposure to another non-variola orthopoxvirus, then confirmatory testing should be pursued and can be used to rule cases out (e.g., laboratorian that works with cowpox virus).*

***Recent administration of ACAM2000 and Jynneos needs to be considered when interpreting an antibody titer. RABORAL V-RG is an oral rabies vaccine product for wildlife, is a recombinant vaccinia virus, and could lead to an antibody response in an individual exposed to the liquid vaccine; this is expected to be an extremely rare occurrence.*

Case Classification

Confirmed
Meets confirmatory laboratory evidence.

Probable
Meets presumptive laboratory evidence.

Criteria to Distinguish a New Case from an Existing Case

For surveillance purposes, a new case of MPXV infection meets the following criteria:

1. Healthy tissue has replaced the site of all previous lesions after they have scabbed and fallen off; AND
2. New lesions are present which have tested positive for orthopoxvirus or MPXV DNA by molecular methods or genomic sequencing.

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, shall:

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

Most Recent ADHS Revision Year	2023
Most Recent CDC/CSTE Revision Year	2023
ADHS Case Definition Matches CDC/CSTE?	No
Description of changes	2023: Changed morbidity nomenclature from Monkeypox to Mpox. 2022: Removed suspect case classification, which included clinical criteria and epidemiologic linkage.

	Added general clinical description and a note on the presumptive lab criteria.

MULTISYSTEM INFLAMMATORY SYNDROME IN CHILDREN (MIS-C)	PROVIDERS SUBMIT A REPORT WITHIN 24 HOURS

Cases should be reported under the Novel Coronavirus (e.g., SARS or MERS) requirement. See COVID-19 (2019 Novel Coronavirus) for the case definition specific to COVID-19.

Enter in MEDSIS as Multisystem Inflammatory Syndrome in Children.

CASE DEFINITION

Clinical Criteria

An illness characterized by all of the following, in the absence of a more likely alternative diagnosis*:

- Subjective or documented fever (temperature ≥38.0º C), AND
- Clinical severity requiring hospitalization or resulting in death, AND
- Evidence of systemic inflammation indicated by C-reactive protein ≥3.0 mg/dL (30 mg/L), AND
- New onset manifestations in at least two of the following categories:
    - Cardiac involvement indicated by:
        - Left ventricular ejection fraction <55%, OR
        - Coronary artery dilatation, aneurysm, or ectasia, OR
        - Troponin elevated above laboratory normal range, or indicated as elevated in a clinical note
    - Mucocutaneous involvement indicated by:
        - Rash, OR
        - Inflammation of the oral mucosa (e.g., mucosal erythema or swelling, drying or fissuring of the lips, strawberry tongue), OR
        - Conjunctivitis or conjunctival injection (redness of the eyes), OR
        - Extremity findings (e.g., erythema [redness] or edema [swelling] of the hands or feet)
    - Shock†
    - Gastrointestinal involvement indicated by:
        - Abdominal pain, OR
        - Vomiting, OR
        - Diarrhea
    - Hematologic involvement indicated by
        - Platelet count <150,000 cells/uL, OR
        - Absolute lymphocyte count (ALC) <1,000 cells/uL

*If documented by the clinical treatment team, a final diagnosis of Kawasaki Disease should be considered an alternative diagnosis. These cases should not be reported to national MIS-C surveillance.
†Clinician documentation of shock meets this criterion.

Laboratory Criteria for Surveillance

Confirmatory laboratory criteria

- Detection of SARS-CoV-2 RNA in a clinical specimen** up to 60 days prior to or during hospitalization, or in a post-mortem specimen using a diagnostic molecular amplification test (e.g., polymerase chain reaction [PCR]), OR
- Detection of SARS-CoV-2 specific antigen in a clinical specimen** up to 60 days prior to or during hospitalization, or in a post-mortem specimen, OR

- Detection of SARS-CoV-2 specific antibodies^ in serum, plasma, or whole blood associated with current illness resulting in or during hospitalization

**Positive molecular or antigen results from self-administered testing using over-the-counter test kits meet laboratory criteria.

^Includes a positive serology test regardless of COVID-19 vaccination status. Detection of anti-nucleocapsid antibody is indicative of SARS-CoV-2 infection, while anti-spike protein antibody may be induced either by COVID-19 vaccination or by SARS-CoV-2 infection.

Epidemiologic Linkage

Close contact*** with a confirmed or probable case of COVID-19 disease in the 60 days prior to hospitalization.

***Close contact is generally defined as being within 6 feet for at least 15 minutes (cumulative over a 24-hour period). However, it depends on the exposure level and setting; for example, in the setting of an aerosol-generating procedure in healthcare settings without proper personal protective equipment (PPE), this may be defined as any duration.

Vital Records

A person whose death certificate lists MIS-C or multisystem inflammatory syndrome as an underlying cause of death or a significant condition contributing to death.

Case Classification

Confirmed

Meets the clinical criteria AND the confirmatory laboratory evidence.

Probable

Meets the clnical criteria AND the epidemiologic linkage criteria

Suspect

Meets the vital records criteria

Note: For cases initially identified as suspect, jurisdictions may conduct investigations of clinical and laboratory records to determine if confirmed or probable case criteria are met.

Comments

- A person meeting the case definition for COVID-19 and for MIS-C should be entered in MEDSIS under both morbidities, and classified appropriately for each. For example, a confirmed MIS-C case will likely also count as a confirmed or probable COVID-19 case.
- Some individuals may fulfill full or partial criteria for Kawasaki Syndrome but should be reported if they meet the case definition for MIS-C.
- Consider MIS-C in any pediatric death with evidence of SARS-CoV-2 infection

Criteria to Distinguish a New Case from an Existing Case

A case should be counted as a new case if a previously infected individual meets the confirmed or probable case definition more than 90 days after illness onset date (if available) or hospital admission date.

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

See the Multisystem Inflammatory Syndrome in Children Investigation Form at https://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms.

CASE DEFINITION SUMMARY

Most Recent ADHS Revision Year	2023
Most Recent CDC/CSTE Revision Year	2023
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	2023: Updated epidemiological linkage, laboratory criteria, and clinical criteria. Implemented standardized case definitions criteria, including probable and suspect classification, to match CDC/CTSE case definition.

	2020: New CDC/CSTE case definition; added to Arizona case definition manual in June 2020.

MUMPS	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY

CASE DEFINITION

Clinical Description

In the absence of a more likely diagnosis, an acute illness characterized by:

- Parotitis or swelling of other (non-parotid) salivary gland(s) or any duration; OR
- At least one of the following mumps-associated complication(s):
  - Orchitis
  - Oophoritis
  - Aseptic meningitis
  - Encephalitis
  - Hearing loss
  - Mastitis
  - Pancreatitis

Laboratory Criteria for Surveillance[a]

Confirmatory laboratory evidence

- Isolation of mumps virus from clinical specimen; OR
- Detection of mumps nucleic acid via reverse transcriptase polymerase chain reaction (RT-PCR)[b]; OR
- Significant rise (i.e., at least a 4-fold rise in a quantitative tire or seroconversion[c]) in paired acute and convalescent serum mumps IgG antibody[b]

Supportive laboratory evidence

- Detection of serum mumps IgM antibody[b,d]

[a] A negative lab result in a person with compatible mumps symptoms does not rule out mumps.
[b] Not explained by MMR vaccination during the previous 6–45 days.
[c] Seroconversion is defined as a negative serum mumps IgG followed by a positive serum mumps IgG.
[d] May be ruled out by a negative convalescent mumps IgG antibody using any validated method.

Epidemiologic Linkage Criteria

- Exposure to or contact with a confirmed mumps case; OR
- Member of a group or population identified by public health authorities as being at increased risk for acquiring mumps because of an outbreak

Case Classification

Confirmed

- Meets confirmatory laboratory evidence.

Probable

- Meets clinical criteria AND epidemiologic linkage criteria; OR
- Meet supportive laboratory evidence AND:
  - Meets clinical criteria of:
    - ≥ 2 day duration of parotitis or other salivary gland swelling; OR

- A mumps-related complication

AND

- Does NOT meet epidemiologic linkage criteria

Suspect

- Meets the clinical criteria but does not meet laboratory or epidemiologic linkage criteria; OR
- Meets supportive laboratory evidence but does not meet the clinical criteria AND has documentation that mumps was suspected.

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

Most Recent ADHS Revision Year	2024
Most Recent CDC/CSTE Revision Year	2024
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	2024: ADHS case definition was updated to match the approved CDC/CSTE. 2013: ADHS definition was updated to match the 2012 CDC/CSTE definition.

NOROVIRUS	LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY

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 Surveillance
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 surveillance.

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

Most Recent ADHS Revision Year	2015
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	2015: deleted “reference” from “approved reference laboratory” in the laboratory criteria. 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. 2013: testing from other approved labs accepted

NOVEL CORONAVIRUS (e.g., SARS OR MERS)	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 24 HOURS

See COVID-19 (2019 Novel Coronavirus) or 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 Surveillance

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

Most Recent ADHS Revision Year	2019
Most Recent CDC/CSTE Revision Year	2019
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	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 *S.* Paratyphi infections. 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.

PERTUSSIS (Whooping cough)	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY

CASE DEFINITION

Background

Bordetella pertussis is among the most poorly controlled bacterial vaccine-preventable diseases in the U.S. Pertussis vaccine was introduced in the 1940s, and the routine childhood immunization program has resulted in substantial reductions of disease. However, the number of reported pertussis cases has increased steadily since the late 1980s, with a considerable resurgence observed over the last 10 years. The most notable peak was in 2012 when more than 48,000 cases and 18 deaths were reported, the largest number of cases in the U.S. since the mid-1950s. Significant numbers of cases were also reported in 2004, 2010 and 2014, ranging from 25,000–32,000 cases. Reasons for the increase in reported disease are likely multifactorial, with improved provider recognition and reporting of pertussis disease, changing diagnostic practices, molecular changes in the organism, and waning immunity from acellular pertussis vaccines potentially responsible.

Clinical Description

In the absence of a more likely diagnosis, a cough illness lasting ≥2 weeks, with at least one of the following symptoms:

- Paroxysms of coughing, OR
- Inspiratory whoop, OR
- Post-tussive vomiting, OR
- Apnea (with or without cyanosis).

Laboratory Criteria for Surveillance

- Isolation of *Bordetella pertussis* from clinical specimen; OR
- Positive polymerase chain reaction (PCR) for *B. pertussis*.

Epidemiologic Linkage

Contact with a laboratory-confirmed case of pertussis.

Case Classification

Confirmed

Acute cough illness of any duration, in a case that meets the laboratory criteria for surveillance:

- Isolation of *B. pertussis* from a clinical specimen, OR
- PCR positive for *B. pertussis*

Probable

- In the absence of a more likely diagnosis, illness meeting the criteria listed in the Clinical Description

OR

- Illness with cough 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 (epidemiologic linkage).

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. In the absence of other positive pertussis test results, cases with positive serology 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

Most Recent ADHS Revision Year	2020
Most Recent CDC/CSTE Revision Year	2020
ADHS Case Definition Matches CDC/CSTE?	No
Description of changes	2020: An acute cough of any duration is now sufficient clinical evidence for confirming PCR-positive cases. Clinical criteria for infants no longer differ from older persons. Epidemiologically-linked cases without PCR or culture confirmation are now classified as probable, not confirmed. These changes are based on modifications to the CDC/CSTE definition. ADHS also retains a separate Suspect case classification, and the last option for Probable classification (PCR-positive but no information on symptoms). 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. 2014: changes were made to include apnea 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. 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.

PLAGUE	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 24 HOURS

CASE DEFINITION

Background

The plague bacterium (*Yersinia pestis*) exists in enzootic cycles of rodents and their fleas in the western United States. People are infected with the plague bacterium through flea bites and direct contact with infected animal tissues or fluids. People are also infected by inhalation of droplets coughed by an infected human or animal.

Clinical Description

An illness characterized by acute onset of fever as reported by the patient or healthcare provider with or without one or more of the following specific clinical manifestations:

- Regional lymphadenitis (bubonic plague)
- Septicemia (septicemic plague)
- Pneumonia (pneumonic plague)
- Pharyngitis with cervical lymphadenitis (pharyngeal plague)

Laboratory Criteria for Surveillance

Confirmatory laboratory evidence

- Isolation of *Yersinia pestis* from a clinical specimen with culture identification validated by a secondary assay (e.g., bacteriophage lysis assay, direct fluorescent antibody assay) as performed by a CDC or Laboratory Response Network (LRN) laboratory*; **OR**
- Fourfold or greater change in paired serum antibody titer to *Yersinia pestis* F1 antigen.

*CDC and ASPHL positive cultures are routinely confirmed with a secondary assay. Clinical laboratories using automated blood culture systems may not use secondary assays and so their results may not be confirmatory.

Presumptive laboratory evidence

- 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 *Yersinia pestis* specific DNA or antigens, including F1 antigen, in a clinical specimen by direct fluorescent antibody assay (DFA), immunohistochemical assay (IHC), or PCR.

  Note: Other laboratory tests, including rapid bedside tests, are in use in some low resourced international settings but are not recommended as laboratory evidence of plague infection in the United States.

Epidemiologic Linkage

- Person that is epidemiologically linked to a person or animals with confirmatory laboratory evidence within the prior two weeks;

- Close contact with a confirmed pneumonic plague case, including but not limited to presence within two meters of a person with active cough due to pneumonic plague; OR
- A person that lives in, or has traveled within two weeks of illness onset to a geographically-localized area with confirmed plague epizootic activity in fleas or animals as determined by the relevant local authorities.

Case Classification

Confirmed
- A clinically-compatible case with confirmatory laboratory evidence; OR
- A clinically-compatible case with presumptive laboratory evidence AND epidemiologic linkage.

Probable
A clinically-compatible case with presumptive laboratory evidence without epidemiologic linkage in absence of an alternative diagnosis.

Suspect
- A clinically-compatible case with epidemiologic linkage without laboratory evidence; OR
- Confirmed or presumptive laboratory evidence without any associated clinical information.

Criteria to Distinguish a New Case from an Existing Case
Serial or subsequent plague infections in one individual should only be counted if there is a new epidemiologically-compatible exposure and new onset of symptoms.

For the purposes of entering new laboratory information for an existing case, the timeframe of 6 months can be used as a rule of thumb for creating a new case, until evidence is obtained to determine whether there is an epidemiologically-compatible exposure and new onset of symptoms.*

*Based on ADHS guidelines

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

Most Recent ADHS Revision Year	2020
Most Recent CDC/CSTE Revision Year	2020
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	2020: Allows for febrile illness alone to be considered a clinically-compatible illness. Added newer diagnostic modalities as laboratory evidence of infection. Added Epidemiologic linkage criteria to be included in confirmed and suspect case classifications. Added criteria to distinguish a new case including a six month time frame. 2013: Suspect category added to ADHS definition to match CDC/CSTE definition. Slight rewording of laboratory criteria.

POLIOMYELITIS (PARALYTIC)	PROVIDERS SUBMIT A REPORT WITHIN 24 HOURS

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, in the absence of a more likely alternative diagnosis.

Laboratory Criteria for Surveillance

Confirmatory laboratory evidence
- Poliovirus detected by sequencing of the capsid region of the genome by the CDC Poliovirus Laboratory; OR
- Poliovirus detected in an appropriate clinical specimen (e.g., stool [preferred], cerebrospinal fluid, oropharyngeal secretions) using a properly validated assay^, AND specimen is not available for sequencing by the CDC Poliovirus Laboratory.

^ *The Global Polio Laboratory Network (GPLN) provides guidelines on acceptance of results from labs that are not in GPLN, assays would have to be validated and approved by GPLN. CDC is a part of GPLN.*

Case Classification

Confirmed
A case that meets the clinical description AND confirmatory laboratory evidence.

Criteria to Distinguish a New Case from an Existing Case
Post-polio syndrome is a condition that can affect survivors of poliovirus infection decades after recovering from their initial infection. A person with post-polio syndrome should not be counted as a new case.

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 BI 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 BI 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

Most Recent ADHS Revision Year	2024
Most Recent CDC/CSTE Revision Year	2024
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	ADHS definition was updated to match the approved CDC/CSTE definition.

POLIOVIRUS INFECTION (NON-PARALYTIC)	PROVIDERS SUBMIT A REPORT WITHIN 24 HOURS

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 Surveillance

Confirmatory laboratory evidence

- Poliovirus detected by sequencing of the capsid region of the genome by the CDC Poliovirus Laboratory; OR
- Poliovirus detected in an appropriate clinical specimen (e.g., stool [preferred], cerebrospinal fluid, oropharyngeal secretions) using a properly validated assay^, AND specimen is not available for sequencing by the CDC Poliovirus Laboratory.

^ *The Global Polio Laboratory Network (GPLN) provides guidelines on acceptance of results from labs that are not in GPLN, assays would have to be validated and approved by GPLN. CDC is a part of GPLN.*

Case Classification

Confirmed

Any person without symptoms of paralytic poliomyelitis who meets confirmatory laboratory evidence.

Criteria to Distinguish a New Case from an Existing Case

Post-polio syndrome is a condition that can affect survivors of poliovirus infection decades after recovering from their initial infection. A person with post-polio syndrome should not be counted as a new case.

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 community[1]. 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 country[3]. 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 countries[3]. 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

Most Recent ADHS Revision Year	2024
Most Recent CDC/CSTE Revision Year	2024
ADHS Case Definition Matches CDC/CSTE?	Yes

Description of changes	ADHS definition was updated to match the approved CDC/CSTE definition.

PRIMARY AMEBIC MENINGOENCEPHALITIS (PAM), *Naegleria fowleri* 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

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 Surveillance

Confirmatory laboratory evidence
Detection of *N. fowleri* antigen or nucleic acid from a clinical specimen (e.g., immunohistochemistry or PCR).

Presumptive laboratory evidence

- 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 surveillance.

Probable
A case that meets the clinical criteria and the presumptive laboratory criteria for surveillance.

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

Most Recent ADHS Revision Year	2017
Most Recent CDC/CSTE Revision Year	2017
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	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.

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 Surveillance

- 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

Most Recent ADHS Revision Year	2010
Most Recent CDC/CSTE Revision Year	2010
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	N/A

Q FEVER (*Coxiella burnetii*)	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY

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 Surveillance

Confirmatory laboratory evidence

- 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 laboratory evidence

- Has a single supportive IFA IgG titer of ≥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 ≥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 Surveillance

Confirmatory Testing

- Serological evidence of IgG antibody to *C. burnetii* phase I antigen ≥ 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 ≥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

Most Recent ADHS Revision Year	2010
Most Recent CDC/CSTE Revision Year	2009
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	N/A

RABIES, ANIMAL	LABORATORIES SUBMIT A REPORT WTIHIN 1 WORKING DAY

CASE DEFINITION

Laboratory Criteria for Surveillance

- A positive rabies virus direct fluorescent antibody test; OR
- A positive rabies virus direct rapid immunohistochemical test (dRIT); OR
- A positive rabies virus test by immunohistochemistry (IHC) on formalin-fixed tissue; OR
- A positive pan-lyssavirus probe-based real time reverse transcription-polymerase chain reaction RT-PCR test; OR
- Detection of lyssavirus nucleic acid by genomic sequencing; OR
- 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

Most Recent ADHS Revision Yeacar	2023
Most Recent CDC/CSTE Revision Year	2023
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	2023: Updated Confirmatory laboratory evidence to match revised CDC/CSTE case definition.

RABIES, HUMAN	PROVIDERS SUBMIT A REPORT WITHIN 24 HOURS LABORATORIES SUBMIT A REPORT WTIHIN 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 Surveillance

- 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

ADHS Case Definition Matches CDC/CSTE?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	2011
Description of changes	N/A

RELAPSING FEVER (Borreliosis)	PROVIDERS SUBMIT A REPORT WITHIN 1 WORKING DAY

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 Surveillance

- 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

Most Recent ADHS Revision Year	2005 or before
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	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

Most Recent ADHS Revision Year	2018
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	2018: Newly reportable in Arizona. New case definition.

RESPIRATORY SYNCYTIAL VIRUS (RSV)	LABORATORIES SUBMIT A REPORT WITHIN 5 WORKING DAYS

CASE DEFINITION

Laboratory Criteria for Surveillance

- 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 surveillance.

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

Most Recent ADHS Revision Year	2006
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	N/A

ROCKY MOUNTAIN SPOTTED FEVER	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY

See Spotted Fever Rickettsiosis in this document.

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 Surveillance

- 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.

If an individual with an IgM positive specimen lacks clinical symptoms, public health may rule out the case (after collaboration with ADHS) if the public health investigation points to a high likelihood of false positive results (e.g., an individual undergoing traditional screening tests with no risk factors for rubella).

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

Most Recent ADHS Revision Year	2023
Most Recent CDC/CSTE Revision Year	2013
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	2023: Updated comments to clarify cases that may be ruled out if investigation shows a high likelihood of false positive lab results. 2013: ADHS definition was edited to match CDC/CSTE, including addition of PCR testing.

RUBELLA SYNDROME, CONGENITAL	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY

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, meningoencephalitis, radiolucent bone disease.

Laboratory Criteria for Surveillance

- 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 surveillance.

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

Most Recent ADHS Revision Year	2008
Most Recent CDC/CSTE Revision Year	2007
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	N/A

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 Surveillance

Confirmatory laboratory evidence
Isolation of *Salmonella* from a clinical specimen.

Presumptive laboratory evidence
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 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

Most Recent ADHS Revision Year	2018
Most Recent CDC/CSTE Revision Year	2017
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	2018: Paratyphoid fever (specific serotypes of *Salmonella* enterica) was separated into its own morbidity for reporting nationally. All other salmonellosis remains unchanged. 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. 2013: ADHS definition was changed to match CDC/CSTE, including the addition of non-culture based testing and a suspect case classification.

SCABIES	PROVIDERS REPORT WITHIN 24 HOURS IF AN OUTBREAK IS DETECTED

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 Surveillance
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

Most Recent ADHS Revision Year	2005 or before
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	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 Surveillance*
Tests to detect SARS-CoV are being refined and their performance characteristics assessed; therefore, criteria for laboratory surveillance 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 surveillance 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

Most Recent ADHS Revision Year	2013
Most Recent CDC/CSTE Revision Year	2003
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	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.

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 Surveillance

Confirmatory laboratory evidence
Isolation of *Shigella* species from a clinical specimen.

Presumptive laboratory evidence
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 surveillance; 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

Most Recent ADHS Revision Year	2017
Most Recent CDC/CSTE Revision Year	2017
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	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. 2013: ADHS definition was edited to better match CDC/CSTE, including addition of non-culture based testing and the suspect case classification.

SMALLPOX	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 24 HOURS

CASE DEFINITION

Clinical Description

An illness with acute onset of fever ≥101ºF or 38.3ºC 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 Surveillance

- 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

Most Recent ADHS Revision Year	2017 (comment and note only)
Most Recent CDC/CSTE Revision Year	2010
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	2017: Comment and Lab Note revised to remove references to the CDC Smallpox Response Plan, which is no longer available.

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. Other spotted fever rickettsioses (SFR), such as *Rickettsia parkeri* rickettsiosis and Pacific Coast tick fever (caused by infection with *Rickettsia* species 364D), should be entered under Spotted Fever Group Rickettsiosis.

CASE DEFINITION

Background

Spotted fever rickettsioses (SFR) 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. In Arizona, the tick species primarily associated with the transmission of RMSF is the brown dog tick, *Rhipicephalus sanguineus.* In the rest of the United States, the American dog tick (*Dermacentor variabilis*) and the Rocky Mountain wood tick (*Dermacentor andersoni*) are associated with RMSF transmission.

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 Arizona and in the rest of the US. In these patients, clinical presentation appears similar to, but may be milder than RMSF.

Clinical Description

Fever as reported by the patient or a healthcare provider, AND one or more of the following:

- rash
- eschar
- headache
- myalgia
- anemia
- thrombocytopenia, or
- any hepatic transaminase elevation.

Laboratory Criteria for Surveillance

Confirmatory laboratory evidence

- Detection of Spotted Fever Group *Rickettsiae* (SFGR) nucleic acid in a clinical specimen via amplification of a *Rickettsia* genus- or species-specific target by polymerase chain reaction (PCR) assay; OR
- Serological evidence of a fourfold increase in IgG-specific antibody titer reactive with SFGR antigen by immunofluorescence assay (IFA) between paired serum specimens (one taken in the first two weeks after illness onset and a second taken two to ten weeks after acute specimen collection)*; OR
- Demonstration of SFGR antigen in a biopsy or autopsy specimen by immunohistochemical methods (IHC); OR
- Isolation of SFGR from a clinical specimen in cell culture and molecular confirmation (e.g., PCR or sequence).

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

Presumptive laboratory evidence

- Serologic evidence of elevated IgG antibody at a titer ≥1:128 reactive with SFGR antigen by IFA in a sample taken within 60 days of illness onset.**

**This includes paired serum specimens without evidence of fourfold rise in titer, but with at least one single titer ≥1:128 in IgG-specific antibody titers reactive with SFGR antigen by IFA. The 60-day cut-off is especially important for probable cases with a single IgG titer to better capture real acute infection.

Suspect laboratory evidence

- Serologic evidence of elevated IgG antibody at a titer <1:128 reactive with SFGR antigen by IFA in a sample taken within 60 days of illness onset.

Case Classification

Confirmed
A person who meets the clinical description and has confirmatory laboratory evidence.

Probable
A person who meets the clinical description and has presumptive laboratory evidence.

Suspect

- A case with confirmatory or presumptive laboratory evidence of infection with no clinical information available; OR
- A person who meets the clinical description and has supportive laboratory evidence.

Criteria to Distinguish a New Case from an Existing Case

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

For the purposes of entering new laboratory information for an existing case, the timeframe of 6 months can be used as a rule of thumb for creating a new case, until evidence is obtained to determine whether there is a new episode of clinically compatible illness.*

*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

Most Recent ADHS Revision Year	2020
Most Recent CDC/CSTE Revision Year	2020
ADHS Case Definition Matches CDC/CSTE?	Yes (with different background information)
Description of changes	2020: Updated clinical description to focus on the list of symptoms. Changed laboratory criteria for serological tests, including cut-off values and time frame of sample collection. Removed exposure section as it is not needed for classification. Updated criteria to distinguish a new case. 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.

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.

STREPTOCOCCAL GROUP A INFECTION, INVASIVE DISEASE	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 5 WORKING DAYS

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 Surveillance

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

Most Recent ADHS Revision Year	2019
Most Recent CDC/CSTE Revision Year	1995 (no longer nationally notifiable after 2009)
ADHS Case Definition Matches CDC/CSTE?	No
Description of changes	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. 2014: Removed “clinically compatible” from confirmed definition. Matches the latest CDC/CSTE definition.

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 Surveillance
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

Most Recent ADHS Revision Year	2005 or before
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	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 Surveillance

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 validations 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 CIDT-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

Most Recent ADHS Revision Year	2017
Most Recent CDC/CSTE Revision Year	2017
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	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. 2014: Suspect case definition added, and slight rewording of confirmed case definition, to match CDC/CSTE.

STRONGYLOIDIASIS	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 24 HOURS

Cases should be reported under the emerging or exotic disease requirement.

CASE DEFINITION

Clinical Description

Strongyloidiasis can be both asymptomatic and symptomatic. In severe forms of the disease, the helminth can cause hyperinfection syndrome or disseminated strongyloidiasis. An illness is typically characterized by one or more of the following:

- Stomachache, bloating, and heartburn
- Intermittent episodes of diarrhea and constipation
- Nausea and loss of appetite
- Dry cough
- Throat irritation
- An itchy, red rash that occurs where the worm entered the skin
- Recurrent raised red rash typically along the thighs and buttocks

Laboratory Criteria for Surveillance

Confirmatory laboratory evidence

- Strongyloides larvae or eggs* detected in stool by ova and parasites exam, OR
- Strongyloides larvae detected in body tissues or fluid aspirates

Presumptive laboratory evidence

- S. stercoralis specific IgG antibody detected in blood by ELISA, immunoassay, or monoclonal antibody test

**S. fuelleborni* releases eggs rather than larvae into host stool.

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

Case Classification

Confirmed

A case that meets the confirmatory laboratory evidence.

Probable

A case that meets the presumptive laboratory evidence.

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

Most Recent ADHS Revision Year	2023
Most Recent CDC/CSTE Revision Year	2023
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	New for 2023. CSTE approved a new case definition, although the condition is not nationally notifiable.

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 STI 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/treatment-guidelines/default.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 Surveillance

Confirmatory laboratory 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 laboratory 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 Surveillance

Confirmatory laboratory 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 laboratory 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 Surveillance

Confirmatory laboratory evidence
N/A

Presumptive laboratory evidence
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 ifluncrease 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 STI 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 STI 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.

The objective of treating persons in this stage of disease is to prevent long-term complications and transmission from a pregnant woman to her fetus. Persons diagnosed with late latent syphilis or syphilis of unknown duration should be treated with Benzathine penicillin G (Bicillin L-A) 7.2 million units total, administered as 3 doses of 2.4 million units IM each at 1-week (7-day) intervals. For surveillance purposes, persons who receive doses at 6-9 day intervals will be considered appropriately treated. Pregnant women who miss any dose of therapy OR are treated outside a 6-***9*** day interval MUST repeat the full course of treatment or they will be considered inappropriately treated. Any late latent case who receives a dose less than 6 days apart will need to receive a fourth dose spaced 6-9 days after the third

dose to be considered appropriately treated for surveillance. Infants born to women that are considered inappropriately treated using the above treatment intervals will be considered a congenital case for surveillance purposes if appropriate treatment is not re-initiated 30 days prior to delivery. It is also recommended that non-pregnant persons with late latent syphilis who were treated at inappropriate intervals (i.e., outside the 6-9 day range) re-initiate treatment.

Pregnant women allergic to penicillin MUST be desensitized and treated with penicillin. Additionally, programs should prioritize 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 confirm a stage of syphilis, 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 Surveillance

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 non-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/mm^3 or a CSF protein >120 mg/dL.
  2. After the first 30 days of life, a CSF WBC count of >5 WBC/mm^3 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

Most Recent ADHS Revision Year	2022
Most Recent CDC/CSTE Revision Year	2018
ADHS Case Definition Matches CDC/CSTE?	Yes

Description of changes	2022: Updated the link to the 2021 STI Treatment guidelines (previously ued the 2015 treatment guidelines). Updated the interval for spacing treatment doses under late latent/unknown duration syphilis comment to reflect 6-9 days for all cases. The 9-day cutoff aligns with the 2021 STI treatment guidelines for pregnant persons. This cutoff has implications for congenital syphilis case counting. In Arizona, the 9-day cutoff will be used for both pregnant and non-pregnant persons. 2020: Comment about treatment added to Syphilis, Unknown Duration or Late. 2018: Re-characterization of syphilis stages and clinical manifestations. Included congenital syphilis and syphilitic stillbirths in same definition. 2017: Added criteria to distinguish a new case from an existing case to match 2013 CDC/CSTE case definition. 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. 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

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 Surveillance
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

Most Recent ADHS Revision Year	2005 or before
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	N/A

TETANUS	PROVIDERS SUBMIT A REPORT WITHIN 5 WORKING DAYS

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 Surveillance
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

Most Recent ADHS Revision Year	2010
Most Recent CDC/CSTE Revision Year	2010
ADHS Case Definition Matches CDC/CSTE?	Yes (with additional comments)
Description of changes	N/A

TOXIC SHOCK SYNDROME: NON-STREPTOCOCCAL	PROVIDERS SUBMIT A REPORT WITHIN 5 WORKING DAYS

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/mm^3)
    - Central nervous system (disorientation or alterations in consciousness without focal neurologic signs when fever and hypotension are absent)

Laboratory Criteria for Surveillance

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

Most Recent ADHS Revision Year	2015
Most Recent CDC/CSTE Revision Year	2011
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	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.

TOXIC SHOCK SYNDROME: STREPTOCOCCAL	PROVIDERS SUBMIT A REPORT WITHIN 5 WORKING DAYS

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 <5th 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 µmol/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 Surveillance

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

Most Recent ADHS Revision Year	2015
Most Recent CDC/CSTE Revision Year	2010 (Streptococcal TSS)
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	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.

TRICHINOSIS (Trichinellosis)	PROVIDERS SUBMIT A REPORT WITHIN 1 WORKING DAY

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 Surveillance

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

Most Recent ADHS Revision Year	2017
Most Recent CDC/CSTE Revision Year	2014
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	2017: Added criteria to distinguish a new case from an existing case to match 2013 CDC/CSTE case definition 2014: Laboratory criteria were modified to include the identification of the parasite in food as a laboratory criterion for surveillance; 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.

TUBERCULOSIS	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY

For more information on control measures, see Arizona Administrative Code R9-6-386 and R9-6 Article 12.

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 **Report of Verified Case of Tuberculosis From** 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* complex, 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 Surveillance

- 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 R9-6-386 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 **Report of Verified Case of Tuberculosis 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

Most Recent ADHS Revision Year	2022
Most Recent CDC/CSTE Revision Year	2009
ADHS Case Definition Matches CDC/CSTE?	No

Description of changes	2022: Updated the reporting form for confirmed *M. tuberculosis* cases; Added link for Arizona Administrative Code R9-6 Article 12. 2020: Addition of *M. tuberculosis* **complex** to the clinical description. 2019: Laboratory criteria modified to include isolation of *M. tuberculosis* complex or pathology consistent with *M. tuberculosis*. These changes are not part of the current CSTE definition but are consistent with current practice and with RVCT reporting. 2016: Instructions and links for completion of forms updated. No changes to case definition itself. 2013: Updated the ADHS case definition to match CDC/CSTE, including addition of interferon gamma release assay criteria.

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 Surveillance

Confirmatory laboratory evidence

- 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 laboratory evidence

- 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

Most Recent ADHS Revision Year	2017
Most Recent CDC/CSTE Revision Year	2017
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	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.

TYPHOID FEVER (*Salmonella* Typhi)	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY

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 Surveillance

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

Most Recent ADHS Revision Year	2019
Most Recent CDC/CSTE Revision Year	2019
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	2019: Clinical criteria added. CIDT added as presumptive testing and probable case classification. Epidemiological linkage defined. Changes based on modifications to CDC/CSTE definition.

TYPHUS FEVER	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY

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 Surveillance

- 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

Most Recent ADHS Revision Year	2005 or before
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	N/A

VACCINIA-RELATED ADVERSE EVENT	PROVIDERS SUBMIT A REPORT WITHIN 1 WORKING DAY

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

Most Recent ADHS Revision Year	2006
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	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 Surveillance

- 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

Most Recent ADHS Revision Year	2019
Most Recent CDC/CSTE Revision Year	2007
ADHS Case Definition Matches CDC/CSTE?	No
Description of changes	2019: Clarified that confirmation at a public health laboratory is required, to eliminate false positive results received from clinical laboratories. Added suspect case definition to capture cases not confirmed by a public health laboratory. CDC/CSTE case definition does not state that a public health laboratory must confirm the test, but the ADHS confirmed definition otherwise matches.

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. Enter in MEDSIS under VRSE.

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 Surveillance

- 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:

5. 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;
6. In consultation with the Department, isolate an emerging or exotic disease case or suspect case as necessary to prevent transmission;
7. Conduct an epidemiologic investigation of each reported emerging or exotic disease case or suspect case; and
8. 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,

2. 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

Most Recent ADHS Revision Year	2006
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	N/A

VARICELLA (Chickenpox) AND VARICELLA DEATHS	PROVIDERS SUBMIT A REPORT WITHIN 5 WORKING DAYS

CASE DEFINITION

Clinical Description

In the absence of a more likely alternative diagnosis:

- An acute illness with a generalized rash with vesicles (maculopapulovesicular rash); OR
- An acute illness with a generalized rash without vesicles (maculopapular rash).

Laboratory Criteria for Surveillance[a]

Confirmatory laboratory evidence

- Isolation of varicella-zostervirus (VZV) from a clinical specimen; OR
- Positive direct fluorescent antibody (DFA) for VZV DNA; OR
- Positive polymerase chain reaction (PCR) for VZV DNA[b,c]; OR
- Significant rise (i.e., at least a 4-fold rise or seroconversion[c,d]) in paired acute and convalescent serum VZV immunoglobulin G (IgG) antibody level.[c,e]

Supportive laboratory evidence

- Positive test for serum VZV immunoglobulin M (IgM) antibody[c,f]

[a] Negative laboratory result in a person with a generalized rash with vesicles does not rule out varicella as a diagnosis.
[b] PCR of scabs or vesicular fluid is the preferred method for laboratory confirmation of varicella. In the absence of vesicles or scabs, scrapings of maculopapular lesions can be collected for testing.
[c] Not explained by varicella vaccination during the previous 6-45 days.
[d] Seroconversion is defined as a negative serum VZV IgG followed by a positive serum VZV IgG.
[e] In vaccinated persons, a 4-fold rise may not occur.
[f] IgM serology has limited value as a diagnostic method for VZV infection and is not recommended for laboratory confirmation of varicella. However, an IgM positive result in the presence of varicella-like symptoms can indicate a likely acute VZV infection. A positive IgM result in the absence of clinical disease is not considered indicative of active varicella.

Epidemiological Linkage Criteria

Confirmatory epidemiologic linkage

- Exposure to or contact with a laboratory-confirmed varicella case; OR
- Can be linked to a varicella cluster or outbreak containing ≥1 laboratory-confirmed case; OR
- Exposure to or contact with a person with herpes zoster (regardless of laboratory confirmation)

Presumptive epidemiologic linkage

- Exposure to or contact with a probable varicella case that had a generalized rash with vesicles.

Case Classification (Varicella Case)

Confirmed

- Meets clinical evidence AND confirmatory laboratory evidence; OR
- Meets clinical evidence with a generalized rash *with* vesicles AND confirmatory epidemiologic linkage evidence.

Probable

- Meets clinical evidence with a generalized rash *with* vesicles; OR
- Meets clinical evidence with a generalized rash *without* vesicles AND:
  - Confirmatory or presumptive epidemiologic linkage evidence; OR
  - Supportive laboratory evidence.

  OR
- Provider or School reported a case of rash illness without rash description AND:
  - Confirmatory or presumptive epidemiologic linkage evidence; OR
  - Confirmatory or supportive laboratory evidence.

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

Laboratory confirmation of cases of varicella is now routinely recommended given the changes in the epidemiology of varicella. For reports meeting the laboratory criteria for surveillance, and not reported by a school or a healthcare provider, attempts should be made to identify the presence of compatible symptoms.

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

Most Recent ADHS Revision Year	2024
Most Recent CDC/CSTE Revision Year	2024 (Varicella); 1998 (Varicella death)
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	2024: ADHS definition was updated to match the approved CDC/CSTE definition. 2013: ADHS removed one laboratory criterion for surveillance in order to match that of CDC/CSTE. ADHS 2013 kept additional comments not present in CDC/CSTE. Additionally, ADHS case definition includes a Suspect category and criteria for classifying school or provider reports in the absence of information on specific symptoms.

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 Surveillance

Confirmatory laboratory evidence
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 laboratory evidence
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 surveillance. 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 surveillance; OR
- A clinically-compatible case that is epidemiologically linked to a case that meets the presumptive or confirmatory laboratory criteria for surveillance.

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
- Allomones
- 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

Most Recent ADHS Revision Year	2017
Most Recent CDC/CSTE Revision Year	2017
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	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 on CDC/CSTE definition. 2013: ADHS case definition updated to match CDC/CSTE.

VIRAL HEMORRHAGIC FEVER	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 24 HOURS

CASE DEFINITION

- Filoviruses (Ebola, Marburg)
- Lassa virus
- Lujo virus
- New World Arenaviruses (Guanarito, Machupo, Junin, Sabia, Chapare)
- Crimean-Congo Hemorrhagic Fever (Nairovirus)

Clinical Description

A person with acute onset with ALL the following clinical findings:

- A fever ≥ 38°C (100.4°F), 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 Surveillance

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-specific genetic sequence by 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 within the past 3 weeks 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 clinically recovered case of VHF

Case Classification

Confirmed
A case that meets 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.

Critera to Distinguish a New Case from an Exisiting Case

A new case of VHF should be counted only if not previously counted as a case of VHF caused by the same virus as determined by laboratory evidence.*

*Among the VHFs included in this position statement, reinfection with the same virus species has not been documented. There is a theoretical possibility that a VHF (ex. Ebola) survivor could be infected by a virus that causes one of the other VHFs included in this position statement (ex. Lassa fever, Crimean-Congo hemorrhagic fever, etc.).

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

Most Recent ADHS Revision Year	2022
Most Recent CDC/CSTE Revision Year	2022
ADHS Case Definition Matches CDC/CSTE?	Yes (with additional comments)
Description of changes	2022: Modified the fever threshold to ≥38°C/100.4°F; added Chapare virus to those reportable under this position statement; amended the epidemiologic linkage criteria for sexual exposure within the past 3 weeks to semen from a confirmed acute or clinically recovered case of VHF to remove the stipulated time period of exposure within 10 weeks of the VHF case's onset of illness.

WATERBORNE DISEASE OUTBREAK	PROVIDERS SUBMIT A REPORT WITHIN 24 HOURS

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 Surveillance
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 (WBDOSS).

Although not reported through NORS, the WBDOSS 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

Most Recent ADHS Revision Year	2010
Most Recent CDC/CSTE Revision Year	2010
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	N/A

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.

YELLOW FEVER	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 24 HOURS

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 Surveillance

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

Most Recent ADHS Revision Year	2019
Most Recent CDC/CSTE Revision Year	2019
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	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.

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 that may or may not be bloody 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 Surveillance

Confirmatory laboratory evidence
Isolation of *Yersinia enterocolitica, Y. pseudotuberculosis, Y. intermedia, Y. fredericksenii, Y. kristensenii,* or *Y. ruckeri* by culture from a clinical specimen.

Presumptive laboratory evidence
Detection of any *Yersinia* non-*pestis* species using a PCR 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 evidence.

Probable

- A case that meets presumptive laboratory evidence; OR
- A clinically compatible case that is epidemiologically linked to a case meeting confirmatory or presumptive laboratory evidence.

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

Most Recent ADHS Revision Year	2020
Most Recent CDC/CSTE Revision Year	2020
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	2020: Added specific non-pestis Yersinia species for confirmatory laboratory evidence. 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. 2017: Added supportive laboratory criteria and suspect case definition.

ZIKA VIRUS INFECTION	PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY

CASE DEFINITION

Background
Zika virus, a flavivirus in the family Flaviviridae, is a disease primarily 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 Zika Virus Disease.

Clinical Criteria
A clinically compatible case of Zika Virus Disease is defined as follows:

Non-Congenital Zika Virus 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
  - Generalized rash; OR
  - Arthralgia; OR
  - Non-purulent conjunctivitis
- Complication or pregnancy
  - Fetal loss (at ≧ 20 weeks of gestation)
- Guillain-Barré syndrome

Congenital Zika Virus Disease:*
To meet the clinical criteria for congenital Zika virus disease, the liveborn infant must not have an identified genetic or other cause for the findings, including a positive test for another likely etiology[1], and should have one or more of the following brain or eye anomalies or neurological sequelae specific for congenital Zika virus disease and typically identifiable in the neonatal period:
- Microcephaly (occipital frontal circumference >2 standard deviations below the mean for age and sex) at birth or postnatal onset,
- Cortical hypoplasia or abnormal gyral patterns (polymicrogyria, lissencephaly, heterotopia),
- Increased volume of cerebrospinal fluid (CSF) (hydrocephalus ex vacuo, unspecified hydrocephalus, ventriculomegaly) due to loss of brain parenchyma,
- Intracranial calcifications (most commonly between the cortex and subcortex),
- congenital contractures of major joints (arthrogryposis) associated with structural brain anomalies,
- Congenital paralysis of the diaphragm associated with structural brain anomalies,

- Corpus callosum agenesis/hypoplasia,
- Cerebellar hypoplasia,
- Scarring of the macula with coarse deposits of pigment in the retina (focal retinal pigmentary mottling),
- Other structural eye anomalies (microphthalmia, cataracts, chorioretinal atrophy, optic nerve hypoplasia).

***** *Clinical findings can be observed during prenatal or postnatal evaluations. Consult with CDC as needed for assistance with congenital Zika virus disease clinical determinations.*

[1] *Other clinical considerations for congenital Zika virus disease: among congenital infections, cytomegalovirus infection has clinical findings most consistent with Zika virus infection and should be ruled out by diagnostic testing. While other infectious etiologies (e.g., rubella virus, varicella zoster virus, herpes simplex virus, lymphocytic choriomeningitis virus, Toxoplasma gondii, or Treponema pallidum) have clinical findings less consistent with congenital Zika virus disease, testing for these infections should be considered as part of the complete evaluation for congenital disease.*

Laboratory Criteria for Surveillance

Non-Congenital Zika Virus Disease:

Confirmatory laboratory evidence

- Detection of Zika virus, viral antigen, or viral RNA in a body fluid or tissue; OR
- Detection of anti-Zika virus IgM antibodies in blood or CSF, with positive Zika virus-specific neutralizing antibody titers and negative neutralizing antibody titers against dengue or other flaviviruses endemic to the region where exposure occurred[2].

Presumptive laboratory evidence

- Detection of anti-Zika virus IgM antibodies in blood or CSF with a negative anti-dengue virus IgM antibody test in the same specimen with no neutralizing antibody testing performed; OR
- Four-fold or greater rise in anti-Zika virus-specific neutralizing antibody titers in paired blood specimens; OR
- In the setting of a Zika virus outbreak[3] with minimal circulation of other endemic flaviviruses, detection of anti-Zika virus IgM antibodies in blood or CSF.

Congenital Zika Virus Disease:

Confirmatory laboratory evidence

- Detection of Zika virus, viral antigen, or viral RNA in infant CSF, blood, urine, or postmortem tissue**; OR
- Detection of anti-Zika virus IgM antibodies in infant CSF or blood**, with positive anti-Zika virus-specific neutralizing antibody titers.

Presumptive laboratory evidence

- Detection of Zika virus, viral antigen, or viral RNA in amniotic fluid, placenta, umbilical cord, or cord blood**; OR
- Detection of anti-Zika virus IgM antibodies in infant CSF or blood** with no neutralizing antibody testing performed.

***To prevent misclassifying postnatal Zika virus infections as congenital cases, in Zika virus endemic areas specimens should be collected within 4 weeks after birth.*

[2] If Zika and dengue virus IgM antibodies are detected and neutralizing antibodies are unable to differentiate flaviviruses, consider reporting as Flavivirus disease, not otherwise specified (See ArboNET Surveillance Guide).

[3] Consult with CDC as needed for assistance with outbreak status determinations.

Epidemiologic Linkage

- Residence in or recent travel to an area with known local Zika virus transmission in the 14 days before the onset of symptoms, in the 28 days before the onset of Guillain-Barré syndrome, or during pregnancy (consult with CDC for assistance with geographic risk determination); OR
- Laboratory exposure to Zika virus before onset of symptoms or during pregnancy; OR
- Sexual contact, within 14 days of symptom onset or during pregnancy, with a person who in the last 90 days has either been diagnosed with Zika virus infection or has returned from traveling to an area with a risk of Zika virus transmission; OR
- Receipt of blood, blood products, organ transplant, or tissue transplant within 30 days of symptom onset or during pregnancy from a person who has either been diagnosed with Zika virus infection or returned from traveling to an area with risk of Zika virus transmission.

Case Classification

Non-Congenital Zika Virus Disease:

Confirmed

- Meets the epidemiologic linkage criteria, and clinical and confirmatory laboratory criteria for non-congenital Zika virus disease.

Probable

- Meets the epidemiologic linkage criteria, and clinical and presumptive laboratory criteria for non-congenital Zika virus disease.

Congenital Zika Virus Disease:

Confirmed

- Meets the clinical criteria for congenital Zika virus disease; AND
- Meets confirmatory laboratory criteria for congenital Zika virus disease; AND
- Whose gestational parent meets:
  - epidemiologic linkage criteria; OR
  - confirmatory laboratory criteria for non-congenital Zika virus disease during this pregnancy.

Probable

- Meets the clinical criteria for congenital Zika virus disease; AND
- Meets presumptive laboratory criteria for congenital Zika virus disease; AND
- Whose gestational parent meets:
  - epidemiologic linkage criteria; OR
  - confirmatory laboratory criteria for non-congenital Zika virus disease during this pregnancy.

Criteria to Distinguish a New Case from an Existing Case

A person not previously counted as a case that meets the confirmed or probable case classification.

Note: Infection with Zika virus is expected to provide lifelong immunity. However, in persons who are severely immunocompromised, viral persistence following infection may occur, which can lead to persistent disease. Immunocompromised individuals may also be vulnerable to reinfection with Zika virus.

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

Most Recent ADHS Revision Year	2024
Most Recent CDC/CSTE Revision Year	2024
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	2024: • Removal of Zika virus non-congenital and congenital infection without disease subtypes from the case definition and list of Nationally Notifiable Conditions (NNC). • Revisions to the epidemiologic linkage criteria for case classification to provide more specificity on the timing of exposure. Clinical criteria changes: • for the non-congenital subtype removed complications of pregnancy other than fetal loss to prevent double counting of cases. • for the congenital Zika virus disease subtype provided more specific descriptions of clinical findings associated with congenital Zika virus disease. Lab criteria changes: • Revisions for non-congenital and congenital Zika virus disease subtypes to address diagnostic limitations, including cross-reactivity and persistent detection of IgM. 2017: Zika virus was removed from the list of arboviruses and a separate Zika virus case definition was created.

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 ameba 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 Surveillance

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

Most Recent ADHS Revision Year	2017
Most Recent CDC/CSTE Revision Year	2012
ADHS Case Definition Matches CDC/CSTE?	Yes

Description of changes	2017: Separated from the list of encephalitis, parasitic since not an encephalitic disease and a separate case definition created

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 Surveillance

Confirmatory laboratory evidence

- 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

Presumptive laboratory evidence

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

Most Recent ADHS Revision Year	2005 or before
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	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 Surveillance
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

Most Recent ADHS Revision Year	2018 (moved to non-reportable)
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	Aseptic meningitis is no longer reportable, as of January 1, 2018.

CONGENITAL CYTOMEGALOVIRUS

CASE DEFINITION

Background

Congenital Cytomegalovirus (cCMV) infection and disease are conditions caused by in utero infection with Cytomegalovirus (CMV). A wide spectrum of severity exists, from clinically inapparent infection to severe disease that is clinically apparent at birth or manifests as sequelae.

Clinical Criteria

In the absence of a more likely alternative etiology:

- An infant with at least one of the following clinical signs during the neonatal period:
  - Hepatomegaly
  - Splenomegaly
  - Petechial rash or purpura ("blueberry muffin rash");

  OR
- A child aged 6 years or younger with one or more of the following permanent conditions:
  - Microcephaly (defined as head circumference measurement >2 standard deviations below the average (or <3rd percentile) for the same age and sex, notation in the medical record, or diagnostic code of microcephaly (e.g., ICD-10 code Q02),
  - Brain imaging abnormalities consistent with cCMV, such as intracranial calcifications, periventricular calcifications, leukomalacia, polymicrogyria, lissencephaly, pachygyria, schizencephaly, or ventriculomegaly
  - Sensorineural hearing loss
  - Seizures
  - Cerebral palsy
  - Chorioretinitis
  - Vision impairment, resulting from conditions consistent with cCMV, such as retinitis, retinal scarring, optic neuritis, optic atrophy, or brain damage resulting in cortical vision impairment

Laboratory Criteria for Surveillance

Confirmatory laboratory evidence†

- Absence of a negative test (CMV DNA by NAAT or culture) on a urine specimen collected within 21 days of life; AND
- Detection of CMV DNA by NAAT from urine, whole blood (including dried blood spot [DBS]), or cerebrospinal fluid (CSF) collected from an infant within 21 days of life; OR
- Detection of CMV DNA by NAAT from amniotic fluid specimen; OR
- Isolation of CMV in viral culture from urine, whole blood, or CSF collected from an infant within 21 days of life; OR
- Isolation of CMV in viral culture from amniotic fluid specimen; OR
- Demonstration of CMV antigen in an autopsy specimen by IHC; OR
- Detection of CMV antigen by antigenemia test in whole blood collected from an infant within 21 days of life.

Presumptive laboratory evidence

- Absence of a negative test (CMV DNA by NAAT or culture) on a urine specimen collected within 21 days of life; AND
- Detection of CMV DNA by NAAT from saliva collected from an infant within 42 days of life§; OR

- Isolation of CMV in viral culture from saliva collected from an infant within 42 days of life[§]; OR
- Detection of CMV DNA by NAAT from urine, whole blood, or CSF collected from an infant within 22–42 days of life[¶]; OR
- Isolation of CMV in viral culture from urine, whole blood, or CSF collected from an infant within 22–42 days of life[¶]

[†] Only valid in the absence of a subsequent negative test on a urine specimen that was completed for confirmatory purposes.
[§] If CMV is detected in saliva, repeat testing should be performed using urine.
[¶] Only valid in the absence of a prior negative test on a urine specimen collected within 21 days of life.

Case Classifications

Confirmed

cCMV infection:
- Meets confirmatory laboratory evidence.

cCMV disease:
- Meets clinical criteria AND confirmatory laboratory evidence.

Probable

cCMV disease:
- Meets clinical criteria AND presumptive laboratory evidence.

Comment

Cases of confirmed cCMV infection may be reclassified as confirmed cCMV disease if clinical evidence is subsequently identified after birth or later in childhood.

Detection of CMV DNA by NAAT or culture from saliva collected from an infant within 21 days of life is considered as presumptive laboratory evidence because false-positive results may occur. Therefore, repeat testing using urine is recommended.

Cases with clinical evidence of cCMV disease and presumptive lab evidence are classified as probable cCMV disease. This is done to reflect the uncertainty of lab evidence. Positive results on diagnostic testing performed after 21 days of life could pick up cases of postnatal CMV infection, which is often asymptomatic in term newborns but may present with clinical signs that may also occur in cCMV disease (e.g., hepatosplenomegaly, petechiae, thrombocytopenia), particularly in very low birth weight and preterm newborns.

Case classifications include confirmed cCMV infection to capture newborns that will mainly be identified via newborn screening, both universal and hearing-targeted. Most infected newborns will not have clinical signs of disease, including some who do not pass the newborn hearing screening but have normal hearing upon diagnostic audiologic evaluation. Whereas the estimated cCMV prevalence is 4.5 per 1,000 live births, incidence of acquired postnatal infection is at least 3% by 4-6 weeks of life32, increasing the probability of postnatal infection in infants with any positive test result in specimens collected between 22-42 days of life. Therefore, case classifications do not include “probable” cCMV infection, which could impact jurisdictional efforts on longitudinal data collection for permanent conditions.

CONTROL MEASURES

None

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Most Recent ADHS Revision Year	2024
Most Recent CDC/CSTE Revision Year	2024
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	New for 2024. CSTE approved a new case definition, although the condition is not nationally notifiable. Placed under non-reportable conditions.

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 Surveillance
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

Most Recent ADHS Revision Year	2018 (moved to non-reportable)
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	Enterotoxigenic *E. coli* is no longer reportable, as of January 1, 2018.

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 Surveillance

- 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

Most Recent ADHS Revision Year	2006
Most Recent CDC/CSTE Revision Year	1996
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	N/A

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 Surveillance
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

Most Recent ADHS Revision Year	2005 or before
Most Recent CDC/CSTE Revision Year	1997
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	N/A

HERPES GENITALIS

CASE DEFINITION

Clinical Description
An illness characterized by visible, painful genital or anogenital lesions

Laboratory Criteria for Surveillance

- 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

Most Recent ADHS Revision Year	2018 (moved to non-reportable)
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	Herpes genitalis is no longer reportable, as of January 1, 2018.

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 Surveillance
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

Most Recent ADHS Revision Year	2012
Most Recent CDC/CSTE Revision Year	2012
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	2012: New CDC/CSTE case definition.

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 Surveillance
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

Most Recent ADHS Revision Year	2018 (moved to non-reportable)
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	Kawasaki disease is no longer reportable, as of January 1, 2018.

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 for Surveillance

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

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

Description of changes	2018: New CDC/CSTE case definition.

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 Surveillance
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

Most Recent ADHS Revision Year	2005 or before
Most Recent CDC/CSTE Revision Year	1996
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	N/A

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 Surveillance
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

Most Recent ADHS Revision Year	2005 or before
Most Recent CDC/CSTE Revision Year	1996
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	N/A

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

Most Recent ADHS Revision Year	2005 or before
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	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

Most Recent ADHS Revision Year	2005 or before
Most Recent CDC/CSTE Revision Year	1996
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	N/A

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 Surveillance

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

Most Recent ADHS Revision Year	2019
Most Recent CDC/CSTE Revision Year	2019
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	New for 2019. CSTE approved a new case definition, although the condition is not nationally notifiable.

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/mm^3, 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 Surveillance
None

Case Classification

Confirmed
A case that meets the clinical case definition

CONTROL MEASURES
None

INVESTIGATION FORMS
None

CASE DEFINITION SUMMARY

Most Recent ADHS Revision Year	2018 (moved to non-reportable)
Most Recent CDC/CSTE Revision Year	1990
ADHS Case Definition Matches CDC/CSTE?	No longer nationally notifiable, but matches CDC/CSTE 1990 case definition.
Description of changes	Reye syndrome is no longer reportable, as of January 1, 2018.

TOXOPLASMOSIS

CASE DEFINITION

Background
The criteria listed below for "*Congenital Toxoplasmosis*" generally apply to children <2 years of age, including fetuses and infants; however, congenital toxoplasmosis is a chronic condition and, in many cases, may not be diagnosed until later in life.

Toxoplasmosis

Clinical Criteria
In the absence of another more likely etiology, a person with new onset of one or more of the following clinical signs or symptoms:

- Fever
- Lymphadenopathy
- Muscle ache
- Joint ache
- Fatigue
- Headache
- Pharyngitis
- Hepatosplenomegaly
- Diffuse non-pruritic maculopapular rash
- Pneumonitis
- Myocarditis
- Pericarditis
- Polymyositis
- Hepatitis
- Retinochoroiditis without evidence of a scar, or
- Encephalitis.

Laboratory Criteria for Surveillance

Confirmatory laboratory evidence

- Detection of Toxoplasma-specific IgM antibodies in blood, confirmed at a reference laboratory, with laboratory evidence of acute pattern of infection, OR
- Detection of Toxoplasma DNA (by NAAT [e.g., PCR]) performed on any tissue or body fluid, OR
- Visualization of Toxoplasma in any tissue or body fluid, OR
- Detection of Toxoplasma antigen in any tissue by immunohistochemistry, OR
- Isolation of Toxoplasma whole live parasite from any tissue or body fluid, OR
- A fourfold or greater increase in Toxoplasma-specific IgG antibody titer in paired sera samples collected at least three weeks apart, OR
- Evidence of Toxoplasma-specific IgG antibody seroconversion over two sequential samples collected up to 12 weeks apart, or during current pregnancy for pregnant persons

Presumptive laboratory evidence

- Detection of Toxoplasma-specific IgG antibodies in blood

Supportive laboratory evidence

- Detection of Toxoplasma-specific IgM antibodies in blood, not confirmed at a reference laboratory

Epidemiologic Linkage Criteria

Evidence of a shared exposure that is associated with at least one probable or confirmed case of active toxoplasmosis-primary infection.

Case Classifications

Confirmed

- Meets toxoplasmosis confirmatory laboratory evidence, OR
- Meets toxoplasmosis presumptive laboratory evidence.

Probable

- Meets toxoplasmosis epidemiologic linkage criteria AND toxoplasmosis supportive laboratory evidence AND toxoplasmosis clinical criteria.

Suspect

- Meets toxoplasmosis epidemiologic linkage criteria AND toxoplasmosis clinical criteria, OR
- Meets toxoplasmosis supportive laboratory evidence.

Congenital Toxoplasmosis

Clinical Criteria

In the absence of another more likely etiology, a fetus or liveborn child with one or more of the following clinical findings:

- Retinochoroiditis
- Hydrocephalus, or
- Intracranial calcifications

Laboratory Criteria

Confirmatory laboratory evidence

- Detection of Toxoplasma-specific IgG antibodies AND (Toxoplasma-specific IgM antibodies OR
- Toxoplasma-specific IgA antibodies)4 in blood, confirmed at a reference laboratory, OR
- Persistence in Toxoplasma-specific IgG antibody titer beyond one year of age in a patient being followed since infancy for possible congenital toxoplasmosis, OR reappearance of Toxoplasma-specific IgG antibodies after period of undetectable levels in a child who recently completed treatment for congenital toxoplasmosis, OR
- Increase in Toxoplasma-specific IgG antibody titer during the first year of life, OR
- Detection of Toxoplasma DNA (by NAAT [e.g., PCR]) performed on any tissue or body fluid (including placental tissue or amniotic fluid from birthing parent), OR
- Visualization of Toxoplasma in any tissue or body fluid (including placental tissue or amniotic fluid from birthing parent), OR
- Detection of Toxoplasma antigen in any tissue by immunohistochemistry (including placental tissue from birthing parent), OR
- Isolation of Toxoplasma whole live parasite from any tissue or body fluid (including placental tissue or amniotic fluid from birthing parent)

Presumptive laboratory evidence

- Detection of Toxoplasma-specific IgG antibodies AND (Toxoplasma-specific IgM antibodies OR Toxoplasma-specific IgA antibodies) in blood, not confirmed at a reference laboratory

Supportive laboratory evidence

- Detection of Toxoplasma-specific IgG antibodies in blood

Epidemiologic Linkage Criteria

Fetus or infant delivered to a pregnant person with evidence of Toxoplasma gondii infection or toxoplasmosis acquired or reactivated during current gestation or within 6 months prior to conception.

Case Classifications

Confirmed

- Meets congenital toxoplasmosis confirmatory laboratory evidence.

Probable

- Meets congenital toxoplasmosis presumptive laboratory criteria AND (congenital toxoplasmosis epidemiologic linkage criteria OR congenital toxoplasmosis clinical criteria), OR
- Meets congenital toxoplasmosis clinical criteria AND congenital toxoplasmosis epidemiologic linkage criteria.

Suspect

- Meets congenital toxoplasmosis supportive laboratory evidence, OR
- In setting of fetal loss: meets congenital toxoplasmosis epidemiologic linkage criteria.

Criteria to Distinguish a New Case from an Existing Case

- A new case of toxoplasmosis is one not previously counted as a case of toxoplasmosis or congenital toxoplasmosis.
- A new case of congenital toxoplasmosis is one not previously counted as a case of toxoplasmosis or congenital toxoplasmosis.

Comment

The following provides guidance for health departments to use for further classification of toxoplasmosis cases. Health departments that have the capacity and resources to conduct further surveillance may use these sub-classifications to guide public health action. Health departments further classifying toxoplasmosis cases using these sub-classifications may voluntarily choose to send data for sub-classifications to the CDC.

Cases of toxoplasmosis may be further classified as the following:

- **Active Toxoplasmosis – Primary Infection**
  - ***Confirmed***
    - Meets toxoplasmosis confirmatory laboratory evidence AND has no previous evidence of toxoplasmosis (such as a previous positive Toxoplasma-specific IgG or previous clinical diagnosis of toxoplasmosis)
  - ***Probable***
    - Meets toxoplasmosis epidemiologic linkage criteria AND toxoplasmosis supportive laboratory evidence AND toxoplasmosis clinical criteria

- ***Suspect***
  - Meets toxoplasmosis epidemiologic linkage criteria AND toxoplasmosis clinical criteria, **OR**
  - Meets toxoplasmosis supportive laboratory evidence

- **Active Toxoplasmosis – Reactivation Disease**
  - ***Confirmed***
    - Meets toxoplasmosis confirmatory laboratory evidence AND has previous evidence of toxoplasmosis (such as a previous positive Toxoplasma-specific IgG, previous clinical diagnosis of toxoplasmosis, or clinician diagnosis of new onset of recurrent toxoplasmosis ocular lesion).
  - ***Probable***
    In the absence of another more likely etiology:
    - Reactivation toxoplasmic encephalitis: Meets toxoplasmosis presumptive laboratory evidence AND toxoplasmosis clinical criteria of brain imaging that demonstrates typical toxoplasmic encephalitis radiographic appearance (e.g. ring-enhancing lesion[s]), AND has compatible clinical syndrome (e.g. headache, mental status changes or other neurologic symptoms) AND is immunocompromised AND criteria for probable active toxoplasmosis-primary infection are not already met, **OR**
    - Reactivation ocular toxoplasmosis: A person with retinochoroiditis with evidence of a scar[8], OR clinician diagnosis of new onset of recurrent toxoplasmosis ocular lesion.

- **Past Infection/Unable to Classify- Toxoplasmosis**
  - ***Confirmed***
    - Meets toxoplasmosis presumptive laboratory evidence AND
    - Criteria for probable or confirmed active toxoplasmosis (primary infection or reactivation disease) or congenital toxoplasmosis are not already met.

CONTROL MEASURES

None

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Most Recent ADHS Revision Year	2024
Most Recent CDC/CSTE Revision Year	2024
ADHS Case Definition Matches CDC/CSTE?	Yes
Description of changes	New for 2024. CSTE approved a new case definition, although the condition is not nationally notifiable. Placed under non-reportable conditions.

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

Most Recent ADHS Revision Year	2018
Most Recent CDC/CSTE Revision Year	N/A
ADHS Case Definition Matches CDC/CSTE?	N/A
Description of changes	2018: Rules no longer include reporting or investigation of unexplained deaths with a history of fever. 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.

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 *H. influenzae*, call to find out specific site**. If MRSA, *S. pneumo*, 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 *H. influenzae*, call to find out specific site.** If MRSA, *S. pneumo*, Group A or B Streptococcus, consider non-sterile.
Bone (including bone fragment)	✓		
Bone marrow*	✓		
Brain	✓		

Specimen Type	Sterile	Non-Sterile	Comments/Notes
Bronchial		✓	May be listed as "bronchial wash", "bronchialalveolar lavage", or "BAL"
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		✓	
Endotracheal		✓	
Eye Swab		✓	
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	✓		

Specimen Type	Sterile	Non-Sterile	Comments/Notes
Lower respiratory tract *		✓	
Lymph *	✓		
Macrophages	✓		
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

Specimen Type	Sterile	Non-Sterile	Comments/Notes
Swab (unspecified)			**If meningococcal, listeria, or *H. influenzae*, call to find out specific site.** If MRSA, *S. pneumo*, 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 *H. influenzae*, call to find out specific site.** If MRSA, *S. pneumo*, 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	✓		
Vomitus		✓	
Whole Blood	✓		
Wound (wound abscess, wound drainage, wound exudate)		✓	

Notes:

1. *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)
2. **"Body Fluid" or "Sterile Body Fluid"**
    a. Specimens reported as "sterile body fluid" may or may not be from normally sterile sites. "Sterile" may refer to the method of collection.
    b. If meningococcal, listeria, or H. influenzae, call to find out specific site. If MRSA, S. pneumo, Group A or B Streptococcus, consider non-sterile.
3. "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.
4. This document is used by ADHS to determine if a site is 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.If you have questions about whether a specimen is considered sterile or not, please contact ADHS at 602-364-3676 or surveillance@azdhs.gov.

Appendix 2: Bacteria in the Enterobacterales order

The most commonly encountered carbapenem-resistant Enterobacterales are in the following genera:

Citrobacter spp.
Enterobacter spp.
Escherichia spp.
Hafnia spp.
Klebsiella spp.
Pantoea spp.
Proteus spp.
Providencia spp.
Morganella spp.
Raoultella spp.
Serratia spp.

However, there are many genera in the Enterobacterales order, including:

Acerihabitans
Affinibrenneria
Aranicola
Arsenophonus
Atlantibacter
Averyella
Biostraticola
Brenneria
Bruguierivorax
Buchnera
Budvicia
Buttiauxella
Candidatus
Cedecea
Chania
Chimaeribacter
Coetzeea
Cosenzaea
Cronobacter
Dickeya
Dryocola
Edaphovirga
Edwardsiella
Enterobacillus
Entomohabitans
Erwinia
Ewingella
Franconibacter
Gibbsiella
Grimontella
Guhaiyinggella
Huaxiibacter
Insectihabitans
Intestinirhabdus
Izhakiella
Jejubacter
Jinshanibacter
Kalamiella
Kluyvera
Kosakonia
Leclercia
Lelliottia
Leminorella
Limnobaculum
Lonsdalea
Mangrovibacter
Margalefia
Metakosakonia
Mixta
Moellerella
Musicola
Nissabacter
Obesumbacterium
Pectobacterium
Phaseolibacter
Photorhabdus
Phytobacter
Plesiomonas
Pluralibacter
Pragia
Pseudenterobacter
Pseudescherichia
Pseudocitrobacter
Rahnella
Rosenbergiella
Rouxiella
Salmonella
Samsonia
Scandinavium
Shigella
Shimwellia
Siccibacter
Silvania
Sodalis
Superficieibacter
Tatumella
Tenebrionibacter
Thorsellia
Tiedjeia
Trabulsiella
Wigglesworthia
Winslowiella
Xenorhabdus
Yersinia
Yokenella

For a full, current list see: https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=91347