Surveillance Case Definitions for Reportable Diseases in Florida

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Introduction

The importance of surveillance data collected on reportable disease cases cannot be overstated. Without such data, trends cannot be accurately monitored, unusual occurrences of diseases might not be detected, and the effectiveness of intervention activities cannot be evaluated. Uniform reporting criteria, in addition to the simplicity and timeliness of surveillance data, are fundamental to increasing the specificity of reporting and improving the comparability of information about diseases occurring in different regions of the state. This document provides updated uniform criteria for the local county public health departments to use when reporting Florida's notifiable infectious diseases.

The surveillance case definitions included in this document differ in their use of clinical, laboratory, and epidemiological criteria to define cases. For example, some diseases require laboratory confirmation for diagnosis regardless of clinical symptoms, some diseases require both laboratory confirmation and clinical symptoms, and other diseases are diagnosed based on epidemiologic data alone. **To assist in laboratory diagnosis and epidemiologic investigation, there are certain diseases for which an isolate of the organism should, and in some cases must (as required by Chapter 64D-3, *Florida Administrative Code*), be sent to the Bureau of Public Health Laboratories (BPHL).** The need to have an isolate forwarded to BPHL is noted in the appropriate disease-specific case definitions.

This document is intended for use by those working in epidemiology and disease control for the Florida Department of Health (DOH) at the state and county level. While information in this document may be shared with clinicians, hospitals, or laboratories, to aid in the reporting or investigating of cases the final classifying of cases, data entry and management within the state reportable disease surveillance system, Merlin, and final completion of case report forms will be performed by DOH. Substantial amounts of information, including laboratory tests, must be collected for many diseases before a final case classification is possible. **Since final case review and classification is performed at the state level using laboratory and clinical data, laboratory reports should be entered into Merlin and attached to cases at the county health department. Original paper results can also be attached as documents but should not replace data entry of laboratory results.** This list of diseases changes as additional diseases are incorporated to full electronic submission via Merlin.

Case report forms and requirements for diseases under public health surveillance in Florida are available on the Surveillance and Investigation Guidance website (www.Floridahealth.gov/SurveillanceInvestigationGuide).

Using This Document (Continued)

List of sterile and non-sterile sites

Below is a list of common sterile and non-sterile sites. For additional questions, please contact the Bureau of Epidemiology.

Non-sterile: Bronchial wash, wound, eye, middle ear, sputum, stool, urine, superficial wound aspirates

Sterile: Blood; cerebrospinal fluid (CSF); pleural fluid (includes: chest fluid, thoracentesis fluid); peritoneal fluid (includes: abdominal fluid, ascites); pericardial fluid; bone (includes: bone marrow); joint fluid (includes: synovial fluid, fluid, needle aspirate, or culture of any specific joint: knee, ankle, elbow, hip, wrist); internal body sites (specimen obtained from surgery or aspirate from one of the following: lymph node, brain, heart, liver, spleen, vitreous fluid, kidney, pancreas, gallbladder, ovary, vascular tissue, muscle collected during debridement for necrotizing fasciitis)

Notations

Suspect Immediately: Report immediately, 24 hours a day, 7 days a week (24/7), by phone upon initial clinical suspicion or laboratory test order

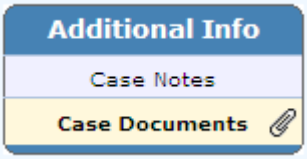
Suspect immediately during business hours: Report immediately during normal business hours by phone upon initial clinical suspicion or laboratory test order

Immediately: Report immediately 24 hours a day, 7 days a week (24/7), by phone upon diagnosis

Isolates or specimens are required to be submitted to the Bureau of Public Health Laboratories as required by Chapter 64D-3, *Florida Administrative Code*

Paper case report form required

An electronic extended data screen is not available in Merlin. A paper case report form must be completed to capture disease-specific risk factors. Forms should be scanned and attached to the corresponding case in Merlin in the "Case Documents" section (see screen shot below) by county health department staff (preferred). If a county health department is not able to scan and attach the form, they can be faxed to the Bureau of Epidemiology 850-414-6894 where staff will scan and attach the form to the case.



Merlin extended data required

An electronic extended data screen is available in Merlin to capture disease-specific risk factors. Data on the extended data screens should be completed and submitted via Merlin. Paper case report forms are still available as a tool to assist in case investigation and interview, but are not required to be completed and attached to the case in Merlin.

Applying case definitions

When applying case definitions in this document to classify cases, follow these steps:

1) Each case definition has core components:
    - Clinical criteria for case classification
    - Laboratory criteria for case classification
    - Epidemiological criteria for case classification
    - Case classification
    - Criteria to distinguish a new case from previous reports

    Not every component will be applicable for every disease and not every component has been defined for every disease. "Not applicable" will appear if no criteria are defined.

2) The case classification of confirmed, probable or suspect will reference the clinical, laboratory, and epidemiological criteria. The criteria to distinguish a new case from previous reports will determine whether a new case should be created in Merlin or whether information should be entered for an existing case.

3) Review the **confirmed** case classification criteria. If these criteria are met, the case should be classified as confirmed, regardless of whether the probable or suspect criteria are also met.

4) If the confirmed case classification criteria are not met, then review the **probable** case classification criteria. If these criteria are met, the case should be classified as probable, regardless of whether suspect criteria are also met.

5) If the probable criteria are not met, then review the **suspect** case classification criteria. If these criteria are met, then the case should be classified as suspect. If these criteria are not met, the person does not meet the surveillance case definition. If a case has already been created in Merlin, set the Dx Status on the Basic Case screen to "Not a Case" and submit (do not delete the case).

Note that the case classification criteria should be re-evaluated each time new clinical or laboratory information becomes available.

These case definitions are to be used for identifying and classifying cases for reporting to the Department of Health, Bureau of Epidemiology. Terms used in case classifications are defined in the section **Definition of Terms Used in Case Classification** below.

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.
- **Suspect case:** A case that is classified as suspected for reporting purposes.
- **Confirmatory clinical criteria:** Specified signs or symptoms consistent with the diagnosis and are part of the **confirmed** case classification. These are specified in the clinical criteria for case classification section of each case definition.

Applying case definitions (continued)

- **Presumptive clinical criteria:** Specified signs or symptoms consistent with the diagnosis and are part of the **probable** case classification. These are specified in the clinical criteria for case classification section of each case definition.
- **Supportive clinical criteria:** Specified signs or symptoms consistent with the diagnosis and are part of the **suspect** case classification. These are specified in the clinical criteria for case classification section of each case definition.
- **Confirmatory laboratory criteria:** Specified laboratory results that are consistent with the diagnosis and are part of the **confirmed** case classification. These are specified in the laboratory criteria for case classification section of each case definition.
- **Presumptive laboratory criteria:** Specified laboratory results that are consistent with the diagnosis and are part of the **probable** case classification. These are specified in the laboratory criteria for case classification section of each case definition.
- **Supportive laboratory criteria:** Specified laboratory results that are consistent with the diagnosis and are part of the **suspect** case classification. These are specified in the laboratory criteria for case classification section of each case definition.
- **Confirmatory epidemiological criteria:** Specified epidemiological factors that are part of the **confirmed** case classification. These are specified in the epidemiological criteria for case classification section of each case definition.
- **Presumptive epidemiological criteria:** Specified epidemiological factors that are part of the **probable** case classification. These are specified in the epidemiological criteria for case classification section of each case definition.
- **Supportive epidemiological criteria:** Specified epidemiological factors that are part of the **suspect** case classification. These are specified in the epidemiological criteria for case classification section of each case definition.
- **Epidemiologically linked case:** A case in which a) the patient has had contact with one or more persons who either have or had the disease, b) the patient has been exposed to a point source of infection (i.e., a single source of infection, such as an event leading to a foodborne-disease outbreak, to which all confirmed case-patients were exposed), or c) transmission of the agent by its usual modes of transmission is plausible.

Acute Flaccid Myelitis

Florida HEALTH

Merlin disease code: 04910 Acute flaccid myelitis (AFM)

Paper case report form required
Merlin extended data required (completed by case reviewer)

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 annual rate of AFP among children less than 15 years old is approximately 1 per 100,000 children. 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 at the Centers for Disease Control and Prevention (CDC).

The causes of AFM remain largely unknown and no laboratory test is available for case confirmation. To date, all stool specimens from AFM patients tested at CDC have been negative for poliovirus. Data collected since 2014 suggest that enteroviruses, specifically EV-D68, are important factors in the epidemiology of AFM. This exploration of the relationship between EV-D68 and AFM continues.

Clinical criteria for case classification

Acute flaccid weakness of one or more limbs (i.e., low muscle tone, limp, hanging loosely, not spastic or contracted) in the absence of a more likely diagnosis attributable to a nationally notifiable disease/condition

Laboratory/imaging criteria for case classification

Confirmatory:

Either of the following:

- Both of the following with clinical criteria:
  - MRI showing spinal cord lesion with predominant gray matter involvement and spanning one or more vertebral segments
  - **And** excluding gray matter lesions in the spinal cord resulting from physician-diagnosed malignancy, vascular disease, or anatomic abnormalities
- **Or** all of the following for a death:
  - 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 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 disease/condition

Presumptive:

Both of the following:

- MRI showing spinal cord lesion where gray matter involvement is present, but predominance cannot be determined
- **And** excluding gray matter lesions in the spinal cord resulting from physician-diagnosed malignancy, vascular disease, or anatomic abnormalities

Supportive:
Both of the following:

- MRI showing a spinal cord lesion in at least some gray matter spanning one or more vertebral segments
- And excluding gray matter lesions in the spinal cord resulting from physician diagnosed malignancy, vascular disease, or anatomic abnormalities

Note:
"Grey matter" in the spinal cord MRI report is consistent with terms such as "affecting gray matter," "affecting the anterior horn or anterior horn cells," "affecting the central cord," "anterior myelitis," or "poliomyelitis."

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:
Clinical criteria or death and confirmatory laboratory/imaging criteria

Probable:
Clinical criteria and presumptive laboratory/imaging criteria

Suspect:
Clinical criteria and supportive laboratory/imaging criteria

Criteria to distinguish a new case from previous reports

Not applicable

Amebic Encephalitis (*Naegleria fowleri*)

Florida HEALTH

Merlin disease code: 13629 Amebic encephalitis (*N. fowleri*)

Paper case report form required
No Merlin extended data

Clinical criteria for case classification

An infection presenting as meningoencephalitis or encephalitis. The clinical presentation of PAM is like that of acute meningitis caused by other pathogens and symptoms include headache, nausea, vomiting, anorexia, fever, lethargy, and stiff neck. Disorientation, mental status changes, seizure activity, loss of consciousness, and ataxia may occur within hours of initial presentation.

Laboratory criteria for case classification

Confirmatory:
Detection of *N. fowleri* antigen or nucleic acid from a clinical specimen (e.g., direct fluorescent antibody, polymerase chain reaction, immunohistochemistry)

Presumptive:
Either of the following:

- Visualization of motile amebae in a wet mount of cerebrospinal fluid (CSF)
- Or culture of *N. fowleri* from a clinical specimen

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:
Clinical criteria and confirmatory laboratory criteria

Probable:
Clinical criteria and presumptive laboratory criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

N. fowleri might cause clinically similar illness to bacterial meningitis, particularly in its early stages. Definitive diagnosis by a reference laboratory is required. Unlike *Balamuthia mandrillaris* and *Acanthamoeba* species, *N. fowleri* is commonly found in the CSF of patients with PAM. After symptom onset, the disease progresses rapidly and usually results in death within 3 to 7 days.

Amebic Encephalitis (*Naegleria fowleri*) (Continued)

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.

Amebic Encephalitis (*Balamuthia mandrillaris*)

Florida HEALTH

Merlin disease code: 13625 Amebic encephalitis (*Balamuthia mandrillaris*)

Paper case report form required
No merlin extended data

Clinical criteria for case classification

An infection presenting as meningoencephalitis or encephalitis, disseminated disease (affecting multiple organ systems), or cutaneous disease. Granulomatous amebic encephalitis (GAE) can include general symptoms and signs of encephalitis such as early personality and behavioral changes, depressed mental status, fever, photophobia, seizures, nonspecific cranial nerve dysfunction, and visual loss. 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.

Laboratory criteria for case classification

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

Supportive:
Culture of *B. mandrillaris* from a clinical specimen (e.g., tissue)

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:
Clinical criteria and confirmatory laboratory criteria

Suspect:
Clinical criteria and supportive laboratory criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

B. mandrillaris and Acanthamoeba species can cause clinically similar illnesses and might be difficult to differentiate using commonly available laboratory procedures. Definitive diagnosis by a reference laboratory is 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. 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 and transplant center.

Amebic Encephalitis (*Acanthamoeba*)

Florida HEALTH

Merlin disease code: 13621 Amebic encephalitis (*Acanthamoeba*)

Paper case report form required
No Merlin extended data

Clinical criteria for case classification

An infection presenting as meningoencephalitis or encephalitis, disseminated disease (affecting multiple organ systems), or cutaneous disease. *Acanthamoeba* species GAE presents similarly to *B. mandrillaris* GAE with early personality and behavioral changes, depressed mental status, fever, photophobia, seizures, nonspecific cranial nerve dysfunction, and visual loss. Skin lesions and sinus disease may also be seen.

Laboratory criteria for case classification

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

Supportive:
Culture of *Acanthamoeba* species from a clinical specimen (e.g., tissue)

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:
Clinical criteria and confirmatory laboratory criteria

Suspect:
Clinical criteria and supportive laboratory criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Acanthamoeba species 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* species infection because the organism is not commonly present in the CSF.

Anaplasmosis/Ehrlichiosis

Merlin disease code: 08381 Anaplasmosis, HGA (*Anaplasmosis phagocytophilum*)
08382 Ehrlichiosis, HME (*Ehrlichia chaffeensis*)
08383 Ehrlichiosis (*Ehrlichia ewingii*)
08384 Ehrlichiosis/anaplasmosis, undetermined

Paper case report form required
No Merlin extended data

Acute and convalescent sera and whole blood for all cases should be sent to the Bureau of Public Health Laboratories (unless already PCR-positive)

Background

Anaplasmosis and ehrlichiosis are tick-borne illnesses characterized by acute onset of fever with headache, myalgia, nausea, vomiting, rash, anemia, leukopenia, thrombocytopenia, or elevated hepatic transaminases. Intracytoplasmic bacterial aggregates (morulae) may be visible in the leukocytes of some patients.

Anaplasmosis and ehrlichiosis do not result in chronic or persistent infections. Symptoms do not last >30 days, even without treatment.

Clinical criteria for case classification

Confirmatory:
Both of the following lasting less than 30 days:

- Acute onset of fever or evidence of fever-reducing medication
- **And** one or more of the following: rash, headache, malaise, myalgia, nausea, vomiting, anemia, leukopenia, thrombocytopenia, or elevated hepatic transaminases

Notes:

- Symptoms lasted >30 days, clinical criteria not met
- More likely diagnosis, clinical criteria not met for probable cases
- No clinical information available (no medical record or patient interview)

Laboratory criteria for case classification

***Anaplasma phagocytophilum* infection, human granulocytic anaplasmosis (HGA)**
Confirmatory:
One or more of the following:

- Detection of *A. phagocytophilum* DNA in a clinical specimen via amplification of a specific target by polymerase chain reaction (PCR)
- **Or** detection of anaplasmal antigen in a biopsy/autopsy specimen by immunohistochemistry (IHC)
- **Or** isolation of *A. phagocytophilum* from a clinical specimen in cell culture
- **Or** both of the following:
    - Fourfold change in IgG-specific antibody titer to *A. phagocytophilum* antigen by indirect immunofluorescence assay (IFA) in paired serum specimens (one taken in first week of illness and a second 2-4 weeks later)
    - **And** absence of a negative PCR in acute whole blood specimen prior to doxycycline treatment

Presumptive:
Either of the following:

- Single elevated IgG antibody reactive with *A. phagocytophilum* antigen by IFA, enzyme immunoassay (EIA), dot-EIA, or assays in other formats (CDC uses an IFA IgG cutoff of ≥1:64 and does not use IgM test results independently as diagnostic support criteria)
- **Or** identification of morulae in the cytoplasm of neutrophils or eosinophils by microscopic examination

Ehrlichia chaffeensis infection, human monocytic ehrlichiosis (HME)

Confirmatory:
One or more of the following:

- Detection of *E. chaffeensis* DNA in a clinical specimen via PCR
- **Or** detection of *E. chaffeensis* antigen in a biopsy or autopsy specimen by IHC
- **Or** isolation of *E. chaffeensis* from a clinical specimen in cell culture
- **Or** both of the following:
    - Fourfold change in IgG-specific antibody titer to *E. chaffeensis* antigen by IFA between paired serum specimens (one taken in first week of illness and a second 2-4 weeks later)
    - **And** absence of a negative PCR in acute whole blood specimen prior to doxycycline treatment

Presumptive:
Either of the following:

- Single elevated IgG antibody reactive with *E. chaffeensis* antigen by IFA, EIA, dot-EIA, or assays in other formats (CDC uses an IFA IgG cutoff of >1:64 and does not use IgM test results independently as diagnostic support criteria)
- **Or** identification of morulae in the cytoplasm of monocytes or macrophages by microscopic examination

Ehrlichia ewingii infection

Confirmatory:
E. ewingii DNA detected in a clinical specimen via amplification of a specific target by PCR (note that the organism has never been cultured so antigens are not available)

Human ehrlichiosis/anaplasmosis, undetermined

Presumptive:
Either of the following:

- Both of the following:
    - Identification of morulae in white blood cells by microscopic examination
    - **And** absence of PCR, IHC, cell culture, and IFA testing
- **Or** all of the following:
    - Absence of PCR testing
    - **And** *Ehrlichia* and *Anaplasma* IgG titers that are the same value
    - **And** *Anaplasma* and *Ehrlichia* are present in geographic area of exposure

Epidemiological criteria for case classification

Exposure to potential tick habitats in the 14 days before symptom onset (history of tick bite not required)

Case classification

Confirmed:
Clinical criteria, confirmatory laboratory criteria, and epidemiological criteria

Probable:
Clinical criteria, presumptive laboratory criteria, and epidemiological criteria

Suspect:
Confirmatory or presumptive laboratory criteria and no clinical information available

Criteria to distinguish a new case from previous reports

Not applicable

Comments

There are at least three intracellular species of bacteria responsible for anaplasmosis/ehrlichiosis in the U.S.: *A. phagocytophilum*, *E. chaffeensis* (found primarily in monocytes), and *E. ewingii* (found primarily in granulocytes). The clinical signs of disease that result from infection with these agents are similar, and the range distributions of the agents overlap, so testing for one or more species may be indicated. Serologic cross-reactions may occur among tests for these etiologic agents.

Cases reported undetermined ehrlichiosis/anaplasmosis can only be reported as "probable" because the cases are only weakly supported by ambiguous laboratory test results. Problem cases for which sera demonstrate elevated antibody IFA responses to more than a single infectious agent are usually resolvable by comparing the levels of the antibody responses, the greater antibody response generally being that directed at the actual agent involved. Tests of additional sera and further evaluation via the use of PCR, IHC, and isolation via cell culture may be needed for further clarification. Cases involving persons infected with more than a single etiologic agent, while possible, are extremely rare and every effort should be undertaken to resolve cases that appear as such (equivalent IFA antibody titers) via other explanations.

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

Anaplasma, *Ehrlichia*, and *Rickettsia* serologies can cross-react, resulting in false positives. Confirmatory testing and epidemiologic investigation can help determine the causative agent.

PCRs for *A. phagocytophilum* and *E. chaffeensis* may be negative with an acute infection if the specimen was collected after doxycycline treatment was given. This would be considered a false negative and serology testing is recommended. If PCR is negative in an acute whole blood specimen prior to doxycycline treatment, this would negate positive serology results.

Anthrax

Florida HEALTH

Merlin disease code: 02200 Anthrax

Isolates for all cases must be sent to the Bureau of Public Health Laboratories

This condition has been identified as a potential bioterrorism agent by the CDC

CONTACT BUREAU OF EPIDEMIOLOGY

No paper case report form

No Merlin extended data

Background

Anthrax is a serious zoonotic disease caused by the toxin-producing bacterium *Bacillus anthracis*. Human cases of anthrax are uncommon in the U.S and other industrialized countries. Animal cases and environmental contamination in the U.S. are most frequently reported from midwestern and western states, particularly North and South Dakota, Texas, Minnesota, and Nevada. Worldwide, grazing animals such as cattle, sheep, and goats are the most commonly infected species. *Bacillus cereus*, a common soil bacterium with worldwide distribution, can also occasionally carry toxin genes found in *B. anthracis* and cause similar signs and symptoms. Groups at increased risk for exposure include people who handle animal products such as untreated animal hides (including some types of drum skins), veterinarians, livestock producers, travelers, laboratorians, injection drug users, and people in contact with soil in endemic areas. In the case of intentional release, mail handlers, military personnel, and response workers may also be at increased risk.

Anthrax illnesses and deaths are characterized into **several distinct clinical types** defined by route of exposure and clinical or post-mortem findings, including:

- **Cutaneous:** A painless skin lesion usually evolving during a period of 2–6 days from a papule, through a vesicular stage, to a depressed black eschar with surrounding edema. Fever, malaise, and lymphadenopathy may accompany the lesion.
- **Ingestion oropharyngeal:** A painless mucosal lesion in the oral cavity or oropharynx, cervical adenopathy and edema, pharyngitis, fever, and possibly septicemia.
- **Ingestion gastrointestinal:** Severe abdominal pain and tenderness, nausea, vomiting, hematemesis, bloody diarrhea, anorexia, fever, abdominal swelling, and septicemia.
- **Inhalation:** A brief prodrome resembling a viral respiratory illness, followed by development of hypoxia and dyspnea or acute respiratory distress with resulting cyanosis and shock, often with radiographic evidence of mediastinal widening or pleural effusion.
- **Injection:** 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.
- **Systemic disseminated:** Can occur with any of the types/routes of exposure listed above and include fever or hypothermia, tachycardia, tachypnea, hypotension, and leukocytosis. One or more of these signs are usually present in patients with ingestion, inhalational and injection anthrax and may be present in up to a third of patients with cutaneous anthrax.
- **Anthrax meningitis:** May complicate any type of anthrax listed above, and may also be a primary manifestation. Primary symptoms include fever, headache (often severe), nausea, vomiting and fatigue. Meningitis signs/symptoms (e.g., headache, stiff neck, vomiting, and dizziness), altered mental status, and other neurological signs such as seizures and focal signs are usually present. Most patients

with anthrax meningitis have cerebrospinal fluid (CSF) abnormalities consistent with bacterial meningitis, and the CSF is often described as hemorrhagic.

Clinical criteria for case classification

One or more of the following:

- One or more **specific** sign or symptom compatible with cutaneous, ingestion, inhalational, or injection anthrax; systemic involvement; or anthrax meningitis:
  - Painless or pruritic papular or vesicular lesion or eschar which may be surrounded by erythema
  - **Or** blood in CSF
  - **Or** evidence of pleural effusion
  - **Or** evidence of mediastinal widening on imaging
- **Or** two or more **non-specific** symptoms and signs:
  - Abdominal pain, abnormal lung sounds, altered mental status, ascites, cough, dyspnea, fever, headache, hypotension, localized edema, meningitis signs/symptoms (e.g., headache, stiff neck, vomiting, and dizziness), nausea/vomiting (may be bloody), sore throat, tachycardia
- **Or** both of the following:
  - A death of unknown cause
  - **And** organ involvement consistent with anthrax, including one or more of the following lesions: eschar; epidermal or dermal necrosis; dermal hemorrhage, perivascular inflammation, and vasculitis; enlarged, necrotic, and hemorrhagic lymph nodes; hemorrhagic ulcers in the terminal ileum and caecum with mesenteric hemorrhagic lymphadenitis, and peritonitis; hemorrhagic mediastinal lymphadenitis with pleural effusion; petechial hemorrhage of abdominal organs; hemorrhagic meningitis

Laboratory criteria for case classification

Confirmatory for *Bacillus anthracis* or *Bacillus cereus* expressing anthrax toxins:
One or more of the following:

- Culture and identification from a clinical specimen by the Laboratory Response Network (LRN)
- **Or** detection of *B. anthracis* antigens in tissues by immunohistochemical (IHC) staining using both *B. anthracis* cell wall and capsule monoclonal antibodies
- **Or** a fourfold 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 CDC quantitative anti-PA IgG enzyme-linked immunosorbent assay testing in an unvaccinated person
- **Or** detection of *B. anthracis* or anthrax toxin genes by LRN-validated polymerase chain reaction (PCR) 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 [e.g., lymph nodes, liver, spleen], or gastrointestinal)
- **Or** detection of lethal factor (LF) in clinical serum specimens by LF mass spectrometry

Presumptive for *Bacillus anthracis* or *Bacillus cereus* expressing anthrax toxins:
Either of the following:

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

Epidemiological criteria for case classification

One or more of the following:

- Exposure to environment, food, animal, material, or object that is suspect or confirmed to be contaminated with *B. anthracis*
- **Or** exposure to the same environment, food, animal, material, or object as another person who has laboratory-confirmed anthrax
- **Or** consumption of the same food as another person who has laboratory-confirmed anthrax

Case classification

Confirmed:
Clinical criteria and confirmatory laboratory criteria

Probable:
Either of the following:

- Clinical criteria and presumptive laboratory criteria
- **Or** clinical criteria and epidemiological criteria

Suspect:
Clinical criteria, anthrax testing was ordered, and no epidemiological criteria

Criteria to distinguish a new case from previous reports

Create a new case if not previously reported.

Comments

Detection of a suspected case is a **public health emergency** and requires immediate reporting to the Bureau of Epidemiology at 850-245-4401.

Merlin disease code: 06253 California serogroup virus disease
06223 Eastern equine encephalitis
06233 St. Louis encephalitis ❗
06623 Venezuelan equine encephalitis
06633 West Nile virus disease
06213 Western equine encephalitis
06000 Arboviral disease, other ❗*

Acute and convalescent sera for all cases should be sent to the Bureau of Public Health Laboratories

Paper case report form
Merlin extended data required

Viral encephalitis alphaviruses have been identified as a potential bioterrorism agent by the CDC.

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, breastfeeding, 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 *Orthobunyavirus*.

Most arboviral infections are asymptomatic. Clinical disease ranges from mild febrile illness to severe encephalitis. Other clinically compatible symptoms of arbovirus disease may include headache, myalgia, rash, arthralgia, vertigo, vomiting, paresis, altered mental status, seizures, limb weakness, or nuchal rigidity. 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 headache, myalgia, stiff neck, or cerebrospinal fluid (CSF) pleocytosis (increase in white blood cell count). 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 can cause an acute systemic febrile illness (e.g., West Nile fever) that may include headache, myalgia, arthralgia, rash, or gastrointestinal symptoms. Some viruses also can cause more characteristic clinical manifestations, such as severe polyarthralgia or arthritis due to chikungunya, Zika, Mayaro, Ross River, and O'nyong-nyong viruses.

Clinical criteria for case classification

Neuroinvasive disease:

One or more of the following in the absence of a more likely diagnosis: meningitis with pleocytosis, encephalitis, AFP, or other acute signs of central or peripheral neurologic dysfunction as documented by a physician

Non-neuroinvasive disease:
Both of the following in the absence of a more likely diagnosis:

- Fever (chills) as reported by the patient or a health care provider
- **And** absence of neuroinvasive disease

Not a case:
More likely diagnosis

Laboratory criteria for case classification

Confirmatory:
One or more of the following:

- Isolation of virus or detection of specific viral antigen or nucleic acid in tissue, blood, CSF, or other body fluid (e.g., culture, immunohistochemistry [IHC], polymerase chain reaction [PCR])*
- **Or** fourfold or greater change in virus-specific antibody titers in paired sera (e.g., enzyme immunoassay [EIA], microsphere immunoassay [MIA], immunofluorescence assay [IF])
- **Or** both of the following:
  - Virus-specific IgM antibodies in serum or CSF (e.g., EIA, MIA, IF)
  - **And** confirmatory virus-specific neutralizing antibodies in the same or a later specimen (e.g., plaque reduction neutralization test [PRNT])
- **Or** both of the following:
  - Virus-specific IgM antibodies in CSF (e.g., EIA, MIA, IF)
  - **And** negative, equivocal, or indeterminate result for other IgM antibodies in CSF for arboviruses endemic to the region where exposure occurred

*Excluding West Nile virus (WNV) nucleic acid test (NAT) from blood bank screening

Presumptive:
Virus-specific IgM antibodies in serum or CSF (e.g., EIA, MIA, IF)

Supportive (for West Nile Virus only):
One or more of the following:

- Both of the following:
  - Positive WNV NAT from blood bank screening
  - **And** isolation of virus from, or detection of specific viral antigen or nucleic acid in, tissue, blood, or other body fluid (e.g., culture, IHC, PCR) by a state public health laboratory (PHL) or the CDC
- **Or** both of the following:
  - Positive WNV NAT from blood bank screening
  - **And** Virus-specific IgM antibodies in serum or CSF (e.g., EIA, MIA, IF)
- **Or** all of the following:
  - Positive WNV NAT from blood bank screening
  - **And** absence of a negative PCR from a PHL or the CDC
  - **And** absence of a negative result for WNV IgM antibodies (e.g., EIA, MIA, IF)

Note:
Positive culture, IHC, PCR, or IgM in CSF will be classified as neuroinvasive

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:
Clinical criteria and confirmatory laboratory criteria

Probable:
Clinical criteria and presumptive laboratory criteria

Suspect (for West Nile Virus only):
Supportive laboratory criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Note that in Florida, WNV and St. Louis encephalitis virus (SLEV) are endemic and testing should be performed for both viruses. Testing for rule out of other flaviviruses, such as dengue or Zika viruses, may be considered based on epidemiologic risk factors (e.g., travel, clinical presentation, geographic location). Chikungunya testing may also be recommended for some non-neuroinvasive disease cases.

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 (or vaccinations) within genera, e.g., flaviviruses such as West Nile, St. Louis encephalitis, Powassan, dengue, yellow fever, 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 symptom onset may not have detectable IgM and testing should be repeated on a convalescent-phase specimen 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, particularly WNV. 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 neutralizing

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 illnesses with the presence of IgG, but not IgM, should be evaluated for other etiologic agents with the exception of some dengue infections. In addition, a virus neutralization test (PRNT) is required to differentiate virus specific IgG within the flavivirus family although commercial laboratories often incorrectly report IgG results for a specific flavivirus. For instance, EIA results reported as positive for WNV IgG antibody should actually be reported as being positive for flavivirus antibody IgG.
- **Other information to consider**: Vaccination history, detailed travel history, date of symptom onset, and knowledge of potentially cross-reactive arboviruses known to circulate in the geographic area should be considered when interpreting results.
- **Differentiating between dengue and WNV infections in patients with positive flavivirus labs**
    - WNV IgM titers are negative or low positive in dengue fever patients (or vice versa); however, the WNV IgG can be quite elevated in dengue patients since IgG strongly cross-reacts between flaviviruses.
    - Neuroinvasive disease is relatively uncommon with dengue infections and more likely to be WNV infection than dengue. Confusion differentiating WNV and dengue infections is most likely in patients without symptoms of neuroinvasive disease (fever patients).
    - Travel to a dengue endemic country in the 2 weeks prior to febrile illness onset or travel of a household member to a dengue endemic country in the 4 weeks prior to patient illness should increase suspicion of dengue.
    - Joint pain is often much more severe in cases of dengue fever compared to WNV fever.
    - Thrombocytopenia and leukopenia are more common in cases of dengue fever compared to WNV fever.

Imported arboviral diseases

Human disease cases due to dengue, chikungunya, or yellow fever viruses are nationally notifiable to CDC using specific case definitions. However, many other exotic arboviruses (e.g., Zika, Japanese encephalitis, tick-borne encephalitis, Venezuelan equine encephalitis, and Rift Valley fever viruses) are important public health risks for the U.S. 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. Arboviral encephalitis cannot be distinguished clinically from other central nervous system infections.

For additional information about arboviral disease, see the most recent Surveillance and Control of Selected Arthropod-Borne Diseases in Florida Guidebook (www.floridahealth.gov/%5C/diseases-and-conditions/mosquito-borne-diseases/index.html).

Merlin disease code: 98080 Arsenic poisoning

Paper case report form required
No Merlin extended data

Clinical criteria for case classification

Arsenic intoxication may affect multiple organ systems. Acute exposure to toxic amounts of arsenic may include signs and symptoms such as vomiting, abdominal pain, diarrhea, light-headedness, headache, weakness, and lethargy. These signs and symptoms may rapidly lead to dehydration, hypotension, pulmonary edema, congestive heart failure, and shock. Different clinical manifestations might follow, including dysrhythmias (prolonged QT, T-wave changes), altered mental status, and multisystem organ failure which may ultimately lead to death.

Laboratory criteria for case classification

Elevated inorganic or total urinary arsenic levels (>50 µg/L total for a 24-hr urine) as determined by laboratory test.

If laboratory results for urine are reported in µg As/g creatinine (µg/g create) and are >15 µg/g create, then results must be converted to µg As/liter of urine using the following formula and conversion factor.

_____ (µg As/g create) x _____ (mg create/dL) x 0.01 = _____ (µg As/liter urine)
given given calculated

Positive total arsenic laboratory results from specimens taken within 72 hours of consumption of seafood are **not** acceptable.

Epidemiological criteria for case classification

Either of the following:

- A high index of suspicion exits based on exposure history location and time)
- **Or** epidemiological link to confirmed arsenic poisoning case

Case classification

Confirmed:
Clinical criteria and laboratory criteria

Probable:
Clinical criteria and epidemiological criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Most cases of arsenic intoxication in humans are due to exposure to inorganic arsenic. Organic arsenic found in fish is not believed to be toxic. Total arsenic tests do not distinguish between organic and inorganic arsenic (the

more toxic form). For this reason, positive total arsenic laboratory test results from specimens taken within 72 hours of consumption of seafood do not meet the laboratory criteria for diagnosis. If a person is symptomatic, recommend the health care provider retest after 3-5 days of no fish consumption. Because total arsenic tests do not distinguish between the organic arsenic and inorganic arsenic, speciation is recommended.

Babesiosis

Florida HEALTH

Merlin disease code: 08882 Babesiosis

Paper case report form required

Whole blood (purple top tube) and unstained whole blood smear from confirmed cases must be sent to the Bureau of Public Health Laboratories

No Merlin extended data

Clinical criteria for case classification

Babesiosis is a parasitic disease caused by intraerythrocytic (living inside red blood cells [RBCs]) 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 (no spleen), advanced age, and other causes of impaired immune function or serious health conditions (e.g., HIV, malignancy, corticosteroid therapy, liver or kidney disease). Some immunosuppressive therapies or conditions may cause the patient to be afebrile. Severe cases can be associated with marked thrombocytopenia, disseminated intravascular coagulation, low or unstable blood pressure, acute respiratory distress, myocardial infarction, renal failure, hepatic compromise, altered mental status, and death. Recurrence can occur, particularly in those who are or become immunosuppressed.

Laboratory criteria for case classification

Confirmatory:

One or more of the following:

- Identification of *Babesia* organisms within RBCs by light microscopy in a Giemsa, Wright, or Wright-Giemsa–stained blood smear
- **Or** detection of *B. microti* DNA in a whole blood specimen by polymerase chain reaction (PCR)
- **Or** detection of *Babesia* species genomic sequences in a whole blood specimen by PCR
- **Or** isolation of *Babesia* organisms from a whole blood specimen by animal inoculation

Presumptive:

One or more of the following:

- Indirect fluorescent antibody (IFA) titer ≥1:256 for *B. microti* total immunoglobulin (Ig) or IgG antibody
- **Or** IFA titer ≥1:64 for *B. microti* total Ig or IgG antibody in **epidemiologically linked blood donors and recipients**
- **Or** positive IgG immunoblot for *B. microti*
- **Or** IFA titer ≥1:256 for *B. divergens* total Ig or IgG antibody
- **Or** IFA titer ≥1:512 for *B. duncani* total Ig or IgG antibody

Epidemiological criteria for case classification

Either of the following:

- Spent time in tick habitats in endemic areas (northeastern, north central, or western U.S. states) at least one week and to up to a year prior to identification and reporting of clinical criteria
- **Or** transfusion-linked epidemiological criteria: evidence of transfusion transmission between a blood donor and recipient where either the donor or recipient is a confirmed or probable babesiosis case and **all** the following are met:
    - **Transfusion recipient:**
        - Received one or more RBC or platelet transfusions within one year before the collection date of a specimen with laboratory evidence of *Babesia* infection
        - **And** at least one of these transfused blood components was donated by the donor described below
        - **And** transfusion-associated infection is considered at least as plausible as tick-borne transmission
    - **Blood donor:**
        - Donated at least one of the RBC or platelet components that was transfused into the above recipient
        - **And** the plausibility that this blood component was the source of infection in the recipient is considered equal to or greater than that of blood from other involved donors. More than one plausible donor may be linked to the same recipient

Case classification

Confirmed:
Clinical criteria (fever, anemia, thrombocytopenia, chills, sweats, headache, myalgia, or arthralgia), epidemiological criteria, and confirmatory laboratory criteria

Probable:
Either of the following:

- Objective clinical criteria (fever, anemia, or thrombocytopenia), epidemiological criteria, and presumptive laboratory criteria
- **Or** a blood donor or recipient meeting the transfusion-linked epidemiological criteria with any laboratory criteria

Suspect case:
Confirmatory or presumptive laboratory criteria and no clinical information available

Criteria to distinguish a new case from previous reports

Not applicable

Comments

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. Obtaining travel history for the past year is essential for either disease.

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 symptom 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.

B. 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 epidemiological 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.

Botulism, Foodborne

Florida HEALTH

Merlin disease code: 00510 Botulism, foodborne

Specimens (food or clinical) must be sent to the Bureau of Public Health Laboratories and must be cleared through the Bureau of Epidemiology (850) 245-4401.

Paper case report form required

No Merlin extended data

This condition has been identified as a potential bioterrorism agent by the CDC

Background

Botulism has several distinct clinical forms:

- **Foodborne**: An illness caused by ingestion of botulinum toxin with variable severity. Common symptoms are diplopia, blurred vision, and bulbar weakness. Symmetric paralysis may progress rapidly.
- **Infant**: An illness of infants <12 months of age, characterized by constipation, poor feeding, and "failure to thrive" that may be followed by progressive weakness, impaired respiration, and death.
- **Wound**: An illness resulting from toxin produced by *Clostridium botulinum* that has infected a wound. A history of a fresh, contaminated wound during the 2 weeks before symptom onset should be present. Common symptoms are diplopia, blurred vision, and bulbar weakness. Symmetric paralysis may progress rapidly.
- **Other, unspecified**: An illness in a patient aged ≥12 months of age who has no history of ingestion of suspect food and has no wounds. Common symptoms are diplopia, blurred vision, and bulbar weakness. Symmetric paralysis may progress rapidly.

Clinical criteria for case classification

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

Laboratory criteria for case classification

Either of the following:

- Detection of botulinum toxin in a clinical specimen or food for foodborne botulism
- **Or** isolation of *Clostridium botulinum* from a clinical specimen

Epidemiological criteria for case classification

Confirmatory:

Ate same food as person(s) who have laboratory-confirmed botulism

Presumptive:

Epidemiological link, e.g., ingestion of a home-canned food within the 48 hours prior to onset

Botulism, Foodborne (Continued)

Case classification

Confirmed:
Either of the following:

- Clinical criteria and laboratory criteria
- Or clinical criteria and confirmatory epidemiological criteria

Probable:
Clinical criteria and presumptive epidemiological criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

This is one of the few diseases for which an epidemiologically linked case without laboratory confirmation is considered confirmed.

Heptavalent botulinum antitoxin is available through the Bureau of Epidemiology at (850) 245-4401, 24 hours per day.

Botulism, Infant

Florida HEALTH

Merlin disease code: 00511 Botulism, infant

Paper case report form required

No Merlin extended data

Specimens (food or clinical) must be sent to the Bureau of Public Health Laboratories and must be cleared through the Bureau of Epidemiology (850) 245-4401.

This condition has been identified as a potential bioterrorism agent by the CDC

Background

Infant botulism can happen when a baby ingests *Clostridium botulinum* spores. Illness is characterized by constipation, poor feeding, and "failure to thrive" that may be followed by progressive weakness, impaired respiration, and death.

Clinical criteria for case classification

One or more of the following in an infant <1 year old:
Generalized weakness, lethargy, dilated or slugging pupils, drooping eyelids, decreased head control, difficulty swallowing, diminished suckling, dry mouth, flaccid paralysis, poor feeding, constipation, or ventilatory failure

Laboratory criteria for case classification

Either of the following:

- Detection of botulinum toxin in stool or serum
- **Or** isolation of *C. botulinum* from stool

Epidemiological criteria for case classification

Infant received BabyBIG

Case classification

Confirmed:
Clinical criteria and laboratory criteria

Suspect:
Clinical criteria and epidemiological criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

To obtain BabyBIG® (botulism hyper-immune globulin), request that the attending physician immediately consult with the Infant Botulism Treatment and Prevention Program (IBTPP), a unit of the California Department of Public Health, available 24 hours/day at (510) 231-7600. Notify FDOH's Bureau of Epidemiology that a provider suspects infant botulism and is consulting IBTPP.

Botulism, Wound

Merlin disease code: 00513 Botulism, wound

Specimens (food or clinical) must be sent to the Bureau of Public Health Laboratories and must be cleared through the Bureau of Epidemiology (850) 245-4401.

Paper case report form required

No Merlin extended data

This condition has been identified as a potential bioterrorism agent by the CDC

Clinical criteria for case classification

Wound botulism occurs when *Clostridium botulinum* infects a wound and produces toxin. Common symptoms are diplopia, blurred vision, and bulbar weakness. Symmetric paralysis may progress rapidly.

Laboratory criteria for case classification

Either of the following:

- Detection of botulinum toxin in serum
- **Or** isolation of *Clostridium botulinum* from wound

Epidemiological criteria for case classification

Both of the following:

- No suspected exposure to contaminated food
- **And** either of the following in the 2 weeks before symptom onset:
  - History of fresh, contaminated wound
  - **Or** history of injection drug use

Case classification

Confirmed:
Clinical criteria, laboratory criteria, and epidemiological criteria

Probable:
Clinical criteria and epidemiological criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

This is one of the few diseases for which an epidemiologically linked case without laboratory confirmation is considered confirmed.

Heptavalent botulinum antitoxin is available through the Bureau of Epidemiology at (850) 245-4401, 24 hours a day.

Botulism, Other

Merlin disease code: 00512 Botulism, other

Paper case report form required

No Merlin extended data

Specimens (food or clinical) must be sent to the Bureau of Public Health Laboratories and must be cleared through the Bureau of Epidemiology (850) 245-4401.

This condition has been identified as a potential bioterrorism agent by the CDC

Clinical criteria for case classification

An illness in a patient aged ≥12 months of age who has no history of ingestion of suspect food and has no wounds. Common symptoms are diplopia, blurred vision, and bulbar weakness. Symmetric paralysis may progress rapidly.

Laboratory criteria for case classification

Either of the following:

- Detection of botulinum toxin in clinical specimen
- **Or** isolation of *Clostridium botulinum* from clinical specimen

Epidemiological criteria for case classification

Person ≥1 year old with no history of ingestion of suspect food and no wounds

Case classification

Confirmed:
Clinical criteria, laboratory criteria, and epidemiological criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

This is one of the few diseases for which an epidemiologically linked without laboratory confirmation is considered confirmed.

Heptavalent botulinum antitoxin is available through the Bureau of Epidemiology at (850) 245-4401, 24 hours a day.

Brucellosis

Merlin disease code: 02300 Brucellosis

Paper case report form

Isolates for all cases must be sent to the Bureau of Public Health Laboratories

Merlin extended data required

This condition has been identified as a potential bioterrorism agent by the CDC

Clinical criteria for case classification

A pleomorphic illness generally characterized by acute or insidious onset of intermittent or persistent fever. Other symptoms may include night sweats, arthralgia, fatigue, anorexia, weight loss, headache, myalgia, endocarditis, orchitis, epididymitis, hepatomegaly, splenomegaly, abdominal pain, arthritis, meningitis and/or spondylitis. Pain in a single joint may be present in chronic infections; a single tissue abscess, and aneurysm in large blood vessels has also been reported.

Laboratory criteria for case classification

Confirmatory:

Either of the following:

- Isolation of *Brucella* species from a clinical specimen
- **Or** fourfold or greater rise in *Brucella* agglutination titer between acute- and convalescent-phase serum specimens obtained ≥2 weeks apart and studied at the same laboratory

Presumptive:

Either of the following:

- Detection of *Brucella* DNA in a clinical specimen by polymerase chain reaction (PCR)
- **Or** *Brucella* total antibody titer ≥160 by standard tube agglutination test (SAT) or *Brucella* microagglutination test (BMAT) in one or more serum specimens obtained after symptom onset

Epidemiological criteria for case classification

Epidemiological link to confirmed brucellosis case

Case classification

Confirmed:

Clinical criteria and confirmatory laboratory criteria

Probable:

Either of the following:

- Clinical criteria and epidemiological criteria
- **Or** clinical criteria and presumptive laboratory criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Exposure risk factors include involvement with slaughtering, dressing, or butchering of potentially infected animals such as feral hogs, consumption of unpasteurized dairy products or undercooked meat from infected animals, and laboratory exposure to *Brucella* culture without using aerosol precautions. Follow-up should occur to identify any potential exposures among laboratory staff.

Merlin disease code: 11280 Candida auris infection

Paper case report form
Merlin extended data required

Background

Candida auris is an emerging multidrug-resistant yeast that can colonize the skin and cause invasive infections. It can spread readily between patients in health care facilities, causing numerous outbreaks that have been difficult to control. Containment of *C. auris* spread largely depends on timely detection and implementation of appropriate infection prevention and control measures.

Individuals colonized on their skin can be identified through screening tests; they can shed into the environment, thereby presenting similar transmission risks and requiring the same infection control precautions as individuals with *C. auris* identified in clinical specimens. Screening detects outbreaks earlier than relying solely on passive surveillance through clinical specimens.

Reporting of both clinical and screening cases is critical as public health and facility responses generally do not differ by case type and colonization can lead to clinical infection.

Clinical cases of *C. auris* are based on cultures or culture-independent diagnostic testing (CIDT) from specimens collected during the course of clinical care for the purpose of diagnosing or treating disease. Specimens reflect invasive infection sites (e.g., blood, cerebrospinal fluid) and non-invasive sites such as wounds, urine, and the respiratory tract, where presence of *C. auris* may simply represent colonization and not true infection.

Colonization/screening cases of C. auris are based on swabs collected to determine whether persons are carrying the organism somewhere on their bodies without signs of active infection. Typical colonization/ screening specimen sites are skin (e.g., axilla, groin), nares, rectum, or other external body sites. Swabs from wound or draining ear are considered clinical.

Clinical criteria for case classification

Not applicable

Laboratory criteria for case classification

Confirmatory:
Either of the following:

- Isolation of *C. auris*
- **Or** detection of *C. auris* by CIDT

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:
Confirmatory laboratory criteria

Criteria to distinguish a new case from previous reports

Do **not** create a new case for a clinical case followed by a colonization/screening case or any other subsequent positive *C. auris* laboratory results. Create a new case for a colonization/screening case followed by a clinical case.

Campylobacteriosis

Merlin disease code: 03840 Campylobacteriosis

No paper case report form
No Merlin extended data

Background

Campylobacteriosis is 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.

Clinical criteria for case classification

One or more of the following: abdominal pain, diarrhea, nausea, or vomiting

Laboratory criteria for case classification

Confirmatory:
Isolation of *Campylobacter* in a clinical specimen

Presumptive:
Detection of *Campylobacter* in a clinical specimen using a culture-independent diagnostic test

Supportive:
One or more of the following:

- Detection of *Campylobacter* in a clinical specimen using non-isolate based sequencing
- **Or** detection of antibodies to *Campylobacter* in a clinical specimen using a serologic test
- **Or** a laboratory test with a methodology not previously mentioned

Epidemiological criteria for case classification

Either of the following:

- Epidemiological link to confirmed campylobacteriosis case
- **Or** epidemiological link to probable campylobacteriosis case with laboratory criteria

Case classification

Confirmed:
Confirmatory laboratory criteria

Probable:
Either of the following:

- Clinical criteria and presumptive laboratory criteria
- **Or** clinical criteria and epidemiological criteria

Suspect:
Supportive laboratory criteria

Criteria to distinguish a new case from previous reports

Create a new case for a positive laboratory result >30 days after the most recent positive laboratory result associated with a previously reported case.

Merlin disease code: 98600 Carbon monoxide poisoning

Paper case report form
Merlin extended data required

Background

There is no consistent constellation of signs and symptoms resulting from acute carbon monoxide (CO) poisoning, nor are there any pathognomonic clinical signs or symptoms which would unequivocally indicate a case of acute CO poisoning. The clinical presentation of acute CO poisoning varies depending on the duration and magnitude of exposure and between persons with the same degree of exposure or the same venous carboxyhemoglobin (COHb) level.

The most common signs and symptoms include headache, nausea, fatigue (lethargy), weakness, abdominal discomfort/pain, confusion, and dizziness. Other signs and symptoms may include visual disturbances including blurred vision, numbness and tingling, ataxia, irritability, agitation, chest pain, shortness of breath (dyspnea), palpitations, seizures, and loss of consciousness.

Clinical criteria for case classification

Presumptive:
Either of the following:

- Loss of consciousness
- **Or** death

Supportive:
One or more signs or symptoms consistent with CO poisoning: elevated pulse CO-oximetry measurement, headache, nausea, vomiting, abdominal pain, fatigue, weakness, confusion, dizziness, irritability, shortness of breath, or chest pain

Laboratory criteria for case classification

For non-smoker or child <14 years old whose smoking status is unknown
Confirmatory:
COHb level ≥5.0%

Supportive:
COHb level ≥2.5% and <5.0%

For smoker or person ≥14 years old whose smoking status is unknown
Confirmatory:
COHb level >12.0%

Presumptive:
COHb level ≥9.0% and ≤12.0%

Supportive:
COHb level ≥7.0% and <9.0%

Note:
Laboratory criteria not met if elevated COHb levels are due to chronic obstructive lung disease, hemolysis, or smoking in the absence of another external source of CO exposure

Exposure criteria for case classification

Exposure evidence provided by patient is sufficient for meeting exposure evidence criteria.

Confirmatory:
Exposure to elevated level of CO based on a dedicated or multi-gas meter/instrument (e.g., fire department notation) for known duration consistent with CO poisoning

Presumptive:
Either of the following:

- In location where CO detector alarm sounded
- **Or** onset of CO-related symptoms associated physically and temporally with a CO-emitting source (e.g., gasoline-powered generator, power washer, malfunctioning furnace, fire)

Epidemiological criteria for case classification

Epidemiological link to confirmed CO poisoning case (i.e., was present and exposed in the same CO exposure event)

Case classification

Intentional exposure related to suicide and attempted suicide are not reportable.

Confirmed:
Either of the following:

- Confirmatory laboratory criteria
- **Or** presumptive or supportive clinical criteria and confirmatory exposure criteria

Probable:
One or more of the following:

- Presumptive laboratory criteria
- **Or** presumptive clinical criteria and presumptive exposure criteria
- **Or** presumptive or supportive clinical criteria and epidemiological criteria

Suspect:
Either of the following:

- Supportive laboratory criteria
- **Or** supportive clinical criteria and presumptive exposure criteria

Criteria to distinguish a new case from previous reports

Create a new case when there is either:

- New exposure to CO from different exposure source
- **Or** repeated exposure defined by having the same exposure source as previous occurrence where the criteria used to designate a case has been resolved prior to repeat exposure.

Do **not** create a new Merlin case when there are multiple reports for the same person for the same episode, such as when there are multiple COHb lab test results or when a patient receives multiple hyperbaric treatments following a single poisoning event.

Comments

The acceptance of CO environmental monitoring data is at the discretion of the public health investigator/official. The quality of environmental monitoring data is dependent on the capabilities and limitations of the monitoring equipment and the equipment users. False positive environmental monitoring data is possible (e.g., some CO sensor technologies are known to be cross-sensitive when exposed to other chemicals such as hydrogen sulfide). Please contact the Florida Department of Health Radon and Indoor Air Program Office at (850) 245-4288 or (800) 543-8279 for assistance with the interpretation of CO environmental monitoring data.

Chikungunya Fever

Florida HEALTH

Merlin disease code: 06540 Chikungunya fever

Acute and convalescent sera from cases without recent (2 weeks prior to symptom onset) international travel should be sent to the Bureau of Public Health Laboratories

Paper case report form

Merlin extended data required

Clinical criteria for case classification

Acute phase symptoms include a sudden onset of continuous or intermittent high fever (usually >102° F) with severe joint pain in >2 joints. Tendons may also be involved. Joint and tendon pain commonly involve the hands and feet, is usually bilateral, and often is accompanied by swelling. Other joints may be involved and back pain is reported in up to 50% of cases. Maculopapular rash is reported in approximately half of all patients, usually 2-5 days after fever onset. Other symptoms may include headache, fatigue, depression, nausea, vomiting, and muscle pain. Mild thrombocytopenia, leukopenia, and elevated liver function tests may be reported.

Relapse of joint and tendon pain can occur after initial improvement of clinical signs; relapse is most common 1-3 months after symptom onset. Some patients have prolonged fatigue and depression lasting weeks or months.

Laboratory criteria for case classification

Confirmatory:

One or more of the following:

- Isolation of virus from, or detection of specific viral antigen or nucleic acid in tissue, blood, CSF, or other body fluid (e.g., culture, immunohistochemistry [IHC], polymerase chain reaction [PCR])
- **Or** fourfold or greater change in virus-specific quantitative antibody titers in paired sera (e.g., enzyme immunoassay [EIA], microsphere immunoassay [MIA], immunofluorescence assay [IF])
- **Or** both of the following:
    - Virus-specific IgM antibodies in serum
    - **And** confirmatory virus-specific neutralizing antibodies in the same or a later specimen (e.g., plaque reduction neutralization [PRNT])

Presumptive:

Both of the following:

- Virus-specific IgM antibodies (e.g., EIA, MIA, IF) in serum
- **And** absence of negative virus-specific IgM antibodies (e.g., EIA, MIA, IF) from a state public health laboratory

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:

Clinical criteria and confirmatory laboratory criteria

Probable:
Clinical criteria and presumptive laboratory criteria

Suspect:
Confirmatory or presumptive laboratory criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Chikungunya fever and dengue fever are difficult to differentiate clinically. Maculopapular rash is more frequent in chikungunya fever and polyarthralgia or pain in a chikungunya fever case is often more localized in joints and tendons, particularly the hands and feet, and may be associated with visible swelling. Signs of shock or hemorrhage are much less commonly reported for chikungunya fever compared to dengue fever. It is also important to note that chikungunya fever and dengue fever can occur as co-infections.

Suspect cases of chikungunya or dengue fever should have specimens submitted for appropriate testing (PCR or EIA/IF) for both viruses.

For additional information about arboviral disease, see the most recent Surveillance and Control of Selected Arthropod-Borne Diseases in Florida Guidebook (www.floridahealth.gov/%5C/diseases-and-conditions/mosquito-borne-diseases/index.html).

Cholera (*Vibrio cholerae* Type O1)

Merlin disease code: 00190 Cholera (*Vibrio cholerae* type O1)

Paper case report form

Isolates for all cases must be sent to the Bureau of Public Health Laboratories

Merlin extended data required

This condition has been identified as a potential bioterrorism agent by the CDC

Clinical criteria for case classification

Cholera is an illness of variable severity that is characterized by diarrhea or vomiting; severity is variable.

Laboratory criteria for case classification

Either of the following:

- Isolation of **toxigenic** (i.e., cholera toxin-producing) *Vibrio cholerae* O1 or O139 from stool or vomitus
- **Or** serologic evidence of recent infection (testing performed at the CDC)

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:
Clinical criteria and laboratory criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Illnesses caused by strains of *V. cholerae* other than toxigenic *V. cholerae* O1 or O139 should not be reported as cases of cholera. The etiologic agent of a case of cholera should be reported as either *V. cholerae* O1 or *V. cholerae* O139.

Infections due to *V. cholerae* non-O1 should be reported as vibriosis (*Vibrio cholerae* type non-O1) (Merlin disease code: 00198).

Ciguatera Fish Poisoning

Merlin disease code: 98809 Ciguatera fish poisoning

Paper case report form
Merlin extended data required

Clinical criteria for case classification

Symptoms include abdominal cramps, nausea, vomiting, diarrhea, numbness and paresthesia of lips and tongue, paresthesias of the extremities, metallic taste, arthralgia, myalgia, blurred vision. Paradoxical temperature sensation is sometimes seen. The illness is associated with the consumption of reef or bottom-dwelling fish such as barracuda, amberjack, grouper, or snapper.

Laboratory criteria for case classification

Detection of ciguatoxin in implicated fish is strongly suggestive, but is not necessary for case confirmation

Epidemiological criteria for case classification

History of fish consumption in the 24 hours before symptom onset

Case classification

Confirmed:
Clinical criteria and epidemiological criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Even single sporadic cases should be reported as a single-case outbreak to the regional environmental epidemiologist. Testing for the toxin in implicated fish is available from the FDA. Contact your Regional Environmental Epidemiologist for information.

Merlin disease code: 00342 Coronavirus disease (COVID) for 2019-2022
00344 Coronavirus disease (COVID) for 2023

No paper case report form
Merlin extended data optional

Background

Symptoms of COVID are non-specific and the disease presentation can range from no symptoms (asymptomatic) to severe pneumonia, respiratory failure, and death. COVID is a mild to moderate illness for approximately 80% of persons evaluated with the disease; 15% have severe infection requiring supplemental oxygen; and 5% of persons have critical infections requiring mechanical ventilation. People with COVID generally develop signs and symptoms, including mild respiratory symptoms and fever ~5 days after infection (mean incubation period 5-6 days, range 1-14 days). In exposed populations such as nursing home residents, half of all infections detected during cohort screening may be presymptomatic or asymptomatic.

Clinical criteria for case classification

Not applicable

Laboratory criteria for case classification

Confirmatory:
Either of the following:

- Detection of SARS-CoV-2 RNA by molecular amplification test (e.g., polymerase chain reaction [PCR])
- Or detection of SARS-CoV-2 RNA by genomic sequencing

Presumptive:
Detection of SARS-CoV-2 specific antigen

Epidemiological criteria for case classification

Not applicable

Vital records criteria for case classification

Death certificate lists COVID disease or SARS-CoV-2 or equivalent term as underlying cause of death or significant condition contributing to death

Case classification

Confirmed:
Confirmatory laboratory criteria

Probable:
Presumptive laboratory criteria

Suspect
Vital records criteria

Criteria to distinguish a new case from previous reports

Create a new case for reinfection or coinfections:

- SARS-CoV-2 sequencing results from the new positive specimen and a positive specimen from the most recent previous case demonstrate different lineage
- **Or** 2 positive PCR, sequencing, or antigen lab event dates >90 days apart

Creutzfeldt-Jakob Disease (CJD)

Florida HEALTH

Merlin disease code: 04610 Creutzfeldt-Jakob disease (CJD)

Paper case report form required
No Merlin extended data

Background

CJD is a progressive uniformly fatal dementia characterized by myoclonus, visual or cerebellar signs, akinetic mutism, and pyramidal or extrapyramidal signs.

Clinical criteria for case classification

Confirmatory:
Clinical criteria

Presumptive:
All of the following:

- Progressive dementia
- **And** clinical duration to death <2 years
- **And** at least 2 of the following clinical features:
  - Myoclonus
  - Visual or cerebellar signs
  - Pyramidal or extrapyramidal signs
  - Akinetic mutism
- **And** no alternative diagnosis suggested during routine investigation

Laboratory criteria for case classification

Confirmatory:
Diagnosed by one or more of the following:

- Standard neuropathological techniques
- **Or** immunocytochemical testing
- **Or** Western blot confirmed protease-resistant prion protein
- **Or** presence of scrapie-associated fibrils conducted on brain tissue

Presumptive:
Positive real-time quaking induced conversion (RT-QuIC) in cerebrospinal fluid (CSF) or other tissues

Supportive:
One or more of the following:

- Positive 14-3-3 CSF assay
- **Or** typical electroencephalogram (EEG) (periodic sharp wave complexes)
- **Or** high signal in caudate/putamen on magnetic resonance imaging (MRI) brain scan or at least two cortical regions (temporal, parietal, occipital) either on diffusion-weighted imaging (DWI) or fluid attenuated inversion recovery (FLAIR)

Epidemiological criteria for case classification

Not applicable

Creutzfeldt-Jakob Disease (CJD) (Continued)

Case classification

Confirmed:
Confirmatory clinical criteria and confirmatory laboratory criteria

Probable:
Either of the following:

- Confirmatory or presumptive clinical criteria and presumptive laboratory criteria
- Or presumptive clinical criteria and supportive laboratory criteria

Suspect:
Presumptive clinical criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Cases under the age of 55 years old should be evaluated for the variant form of CJD. Brain tissue for diagnosis and CSF for RT-QuIC and 14-3-3 assays should be sent to the National Prion Disease Pathology Surveillance Center at Case Western Reserve University. Information about the center and shipping instructions can be found on their web site: www.cjdsurveillance.com. Please notify Bureau of Epidemiology to assist with case evaluation and laboratory testing.

Cryptosporidiosis

Florida HEALTH

Merlin disease code: 13680 Cryptosporidiosis

Paper case report form
Merlin extended data optional

Background

Cryptosporidiosis is an illness characterized by diarrhea, abdominal cramps, anorexia (loss of appetite), or vomiting. Asymptomatic infections do occur, but asymptomatic persons are not considered clinically compatible). The disease can be prolonged and life-threatening in severely immunocompromised persons.

Clinical criteria for case classification

Both of the following:

- Diarrhea
- **And** one or more of the following: abdominal cramps, anorexia (loss of appetite), or vomiting

Laboratory criteria for case classification

Confirmatory:

One or more of the following:

- Demonstration of *Cryptosporidium* by microscopy and staining
- **Or** detection of *Cryptosporidium*-specific nucleic acid by polymerase chain reaction (PCR)
- **Or** detection of *Cryptosporidium* by enzyme immunoassay (EIA)
- **Or** detection of *Cryptosporidium* by immunofluorescence assay (IF) (e.g., direct fluorescent antibody [DFA], indirect fluorescent antibody [IFA])

Presumptive:

One or more of the following:

- Detection of *Cryptosporidium* antigen by immunochromatographic card/rapid card test
- **Or** detection of *Cryptosporidium* by unspecified immunoassay (IA)
- **Or** a laboratory test of unknown method

Epidemiological criteria for case classification

Epidemiological link to confirmed cryptosporidiosis case

Case classification

Confirmed:

Confirmatory laboratory criteria

Probable:

Either of the following:

- Presumptive laboratory criteria
- **Or** clinical criteria and epidemiological criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Persons who have a diarrheal illness and are epidemiologically linked to a probable case because that person was only diagnosed with cryptosporidiosis by an immunochromatographic card/rapid card test or unknown test method cannot be classified as probable cases.

When available, species designation and molecular characterization should be reported.

In cases linked to animals, testing of asymptomatic animals may be considered. Please call the Bureau of Epidemiology at (850) 245-4401 to discuss.

Cyclosporiasis

Merlin disease code: 00720 Cyclosporiasis

Specimens and permanent slides (if available) for all cases must be sent to Bureau of Public Health Laboratories

Paper case report form
National Hypothesis Generating Questionnaire (NHGQ)
Merlin extended data required
NHGQ required for cases with onsets from May to August

Background

Cyclosporiasis is an illness of variable severity caused by the protozoan *Cyclospora cayetanensis* and commonly characterized by watery diarrhea (most common), anorexia (loss of appetite), weight loss, abdominal bloating and cramping, nausea, myalgia or other body aches, and fatigue. Vomiting and low-grade fever also may be noted. Relapses and asymptomatic infections can occur.

Clinical criteria for case classification

One or more of the following: diarrhea, anorexia, weight loss, abdominal bloating, abdominal cramps, nausea, myalgia, body aches, fatigue, vomiting, or fever

Laboratory criteria for case classification

Either of the following:

- Demonstration of *Cyclospora* oocysts (by morphologic criteria or by demonstration of sporulation) in a clinical specimen
- **Or** detection of *Cyclospora* DNA by polymerase chain reaction (PCR) in a clinical specimen

Epidemiological criteria for case classification

Epidemiological link to confirmed cyclosporiasis case

Case classification

Confirmed:
Clinical criteria and laboratory criteria

Probable:
Clinical criteria and epidemiological criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Cyclospora is almost exclusively identified in clinical specimens from stool, duodenal/jejunal aspirates, or small-bowel biopsy. Laboratory results identifying *Cyclospora* from other clinical specimen types should be discussed further with the case reviewer.

Cyclosporiasis (Continued)

All *Cyclospora*-positive stool specimens must be sent to the Bureau of Public Health Laboratories (BPHL) in total-fix transport media. Formalin- or PVA-based transport media is not acceptable as it does not allow for confirmation and additional testing of the specimen at BPHL. Permanent slides, if available, must also be sent to BPHL in addition to the specimen.

Dengue Fever

Florida HEALTH

Merlin disease codes: 06103 Dengue Fever

Acute and convalescent sera for infections believed to be Florida-acquired and acute sera for infections believed to be acquired outside Florida must be sent to the Bureau of Public Health Laboratories

Paper case report form

Merlin extended data required

Clinical criteria for case classification

Dengue fever:

Fever or chills/rigors

One or more of the following signs and symptoms may be present (not required):

- Nausea/vomiting, rash, headache, retro-orbital pain or ocular pain, myalgia (muscle pain), arthralgia (joint pain), leukopenia (a total white blood cell count of <5,000/mm^3)
- **Or** one or more of the following warning signs for severe dengue: abdominal pain or tenderness, persistent vomiting, mucosal bleeding at any site (e.g., gums, urinary tract), liver enlargement >2 centimeters, thrombocytopenia (platelet numbers of <200,000/mm^3)

Severe dengue (including dengue hemorrhagic fever [DHF] and dengue shock syndrome [DSS]):

- Fever or chills/rigors
- **And** one or more of the following:
  - Respiratory distress with one or more of the following: hypovolemic shock, pleural effusion (fluid around the lungs), pericardial effusion (fluid around the heart), ascites (abdominal fluid), plasma leakage
  - **Or** 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
  - **Or** elevated aspartate aminotransferase (AST) or alanine aminotransferase (ALT) ≥1,000 U/L
  - **Or** impaired level of consciousness or diagnosis of encephalitis, encephalopathy, or meningitis
  - **Or** heart or other organ involvement including myocarditis, cholecystitis, and pancreatitis

Laboratory criteria for case classification

Confirmatory:

One or more of the following:

- Isolation of dengue virus (DENV)
- **Or** detection of DENV antigens in tissue by a validated immunofluorescence or immunohistochemistry (IHC) assay
- **Or** detection of DENV NS1 antigen by a validated immunoassay
- **Or** detection of DENV nucleic acid by polymerase chain reaction (PCR) or other advanced molecular detection method
- **Or** fourfold rise in plaque reduction neutralization test (PRNT) end point titer (as expressed by the reciprocal of the last serum dilution showing a 90% reduction in plaque counts compared to the virus infected control) between DENV and other flaviviruses tested in a convalescent serum specimen

- **Or** both of the following:
  - Seroconversion from dengue IgM-negative in an acute phase specimen collected ≤5 days after symptom onset to dengue IgM-positive in a convalescent-phase specimen collected ≥5 days after symptom onset (e.g., enzyme immunoassay [EIA], microsphere immunoassay [MIA], immunofluorescence assay [IF])
  - **And** negative or indeterminate for Zika IgM antibodies (e.g., EIA, MIA, or IF)
- **Or** both of the following:
  - Seroconversion from dengue IgG-negative in an acute phase specimen collected ≤5 days after symptom onset to dengue IgG-positive in a convalescent-phase specimen collected ≥5 days after symptom onset (e.g., EIA, MIA, IF)
  - **And** negative or indeterminate for Zika IgM antibodies (e.g., EIA, MIA, or IF)
- **Or** both of the following:
  - Virus-specific IgM antibodies (e.g., EIA, MIA, or IF) in CSF
  - **And** negative result for other IgM antibodies in CSF for arboviruses endemic to the region where exposure occurred

Presumptive:
Both of the following:
- Virus-specific IgM antibodies (e.g., EIA, MIA, or IF) in serum or CSF
- **And** no other testing for arboviruses endemic to region where exposure occurred

Presumptive rule out (criteria not met):
Other testing for arboviruses endemic to region where exposure occurred

Epidemiological criteria for case classification

Epidemiological link to confirmed or probable dengue fever case

Case classification

Confirmed:
Clinical criteria and confirmatory laboratory criteria

Probable:
Clinical criteria and presumptive laboratory criteria

Suspect:
Either of the following:
- Confirmatory or presumptive laboratory criteria
- **Or** clinical criteria and epidemiological criteria

Criteria to distinguish a new case from previous reports

Do not create new case if testing is <90 days from most recent previous dengue infection

Comments

EIA or PCR is recommended to rule out Zika virus infection. If a case also tests positive for Zika IgM antibodies, please see the flavivirus disease and infection case definition.

Dengue re-infection

There are four DENV serotypes. DENV infection results in long-lasting immunity to symptomatic infection with that particular DENV serotype. However, it is possible to be re-infected with any of the remaining DENV serotype. CDC estimates approximately 20% of dengue cases that have been previously exposed to another DENV serotype may have transient or no significant elevation in dengue IgM titers, making identification of such cases extremely difficult without PCR testing on the acute specimen. A person with a dengue re-infection may show elevated IgG titers but no IgM titers. During an epidemiological investigation, it is important to ask if there has been any lifetime travel to a dengue endemic country; first dengue infection may have occurred years prior and with few or no symptoms.

Differentiating between DENV and West Nile virus (WNV) infections in patients with positive flavivirus labs

- WNV IgM titers are negative or low positive in dengue fever patients (or vice versa); however the WNV IgG can be quite elevated in dengue patients since IgG strongly cross-reacts between flaviviruses.
- Neuroinvasive disease is relatively uncommon with dengue infections and more likely to be WNV infection than dengue. Confusion differentiating WNV and dengue infections is most likely in patients without symptoms of neuroinvasive disease (fever patients).
- Travel to a dengue endemic country in the two weeks prior to febrile illness onset or travel of a household member to a dengue endemic country in the four weeks prior to patient illness should increase suspicion of dengue.
- Joint pain is often much more severe in cases of dengue fever compared to WNV fever.
- Thrombocytopenia and leukopenia are more common and severe in cases of dengue fever compared to WNV fever.

Acute and convalescent sera from people with infections believed to be Florida-acquired must be sent to the Bureau of Public Health Laboratories (BPHL). Acute sera from people with infections believed to be acquired outside Florida should also be sent to BPHL.

Guide to Interpretation and Classification of Common Dengue Laboratory Tests

Laboratory test	Days post-onset of specimen collection	Interpretation of positive result	Explanation
Real-time PCR	≤5 days	Confirmatory*	Patient viremic while febrile; days 0-7
IgM (paired acute and convalescent specimens)	≤5 days for acute, >5 days for convalescent (ideally 2 weeks apart)	Confirmatory	Negative IgM in an acute specimen followed by a positive IgM in a convalescent specimen
IgG (paired acute and convalescent specimens)	≤5 days for acute, >5 days for convalescent (ideally 2 weeks apart)	Confirmatory	Negative IgG in acute specimen followed by a positive IgG in a convalescent specimen **or** fourfold increase in titer between acute and convalescent specimen and confirmed by PRNT
IgM (single specimens)	>5 days	Probable	IgM can remain positive for ≥3 months in cases of acute dengue infection

* Only PCR or EIA-based IgM antibody test can be used to diagnosis dengue in single serum specimens.

Previous flavivirus infections and the high prevalence of dengue IgG antibody in some populations (e.g., people who live in or are long-term visitors of dengue endemic countries) complicate interpretation of dengue serological test results. Therefore, a single serum specimen tested using a dengue-specific IgG or combined IgM/IgG ("all antibody") test is generally not helpful for diagnosis of confirmed or probable cases of dengue. For this reason, suspect cases are defined clinically and epidemiologically, without IgG or combined IgG/IgM serological testing.

Diphtheria

Florida HEALTH

Merlin disease code: 03290 Diphtheria

All *Corynebacterium diphtheriae* isolates, regardless of association with disease, must be sent to the Bureau of Public Health Laboratories

Paper case report form required

No Merlin extended data

Clinical criteria for case classification

Confirmatory:

Either of the following:

- Upper respiratory tract illness and 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).

Supportive:

Upper respiratory tract illness and an adherent membrane of the nose, pharynx, tonsils, or larynx in the absence of a more likely diagnosis.

Laboratory criteria for case classification

Confirmatory:

Both of the following:

- Isolation of *Corynebacterium diphtheriae* from the nose or throat, if person has respiratory tract illness with adherent membrane, or site of non-respiratory anatomical infection
- **And** confirmation of toxin production

Supportive:

Histopathologic diagnosis

Epidemiological criteria for case classification

Direct contact with diphtheria case with laboratory criteria

Case classification

Confirmed:

Either of the following:

- Confirmatory clinical criteria and confirmatory laboratory criteria
- **Or** confirmatory clinical criteria and epidemiological criteria

Suspect:

Either of the following:

- Supportive clinical criteria
- **Or** supportive laboratory criteria

Criteria to distinguish a new case from previous reports

Persons without evidence of clinical criteria as described by the diphtheria surveillance case definition but for whom toxin-producing *C. 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 persons are considered carriers of the bacteria and are not reportable.

Comments

Cases of laboratory-confirmed, non-toxin-producing *C. diphtheriae* (respiratory or non-respiratory) should not be reported 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. When used, these tests should always be combined with a test that confirms toxin production, such as the Elek test.

Flavivirus Disease and Infection

Merlin disease code: 07000 Flavivirus disease and infection

Paper case report form

Acute and convalescent sera for infections believed to be Florida-acquired must be sent to the Bureau of Public Health Laboratories (sera for infections believed to be acquired outside Florida do not need to be forwarded to BPHL unless the serum is from a pregnant woman, infant, or possible Guillain-Barré syndrome case)

Merlin extended data required

Background

Viruses in the genus *Flavivirus* can be highly cross-reactive, particularly among exotic arboviruses such as dengue virus (DENV) and Zika virus (ZIKV). In some persons, IgM antibody testing cannot differentiate between the two infections and IgG antibodies strongly cross-react between flaviviruses. Previous flavivirus infections may further complicate result interpretation and is common in some populations (e.g., those residing in or long-term visitors to dengue endemic countries). Even the completion of plaque reduction neutralization testing (PRNT), often considered the gold standard of flavivirus diagnostics, may not provide a definitive result. Other flaviviruses with potential cross-reactivity include other exotic arboviruses such as yellow fever virus and Japanese encephalitis virus, as well as arboviruses endemic to Florida, such as West Nile virus (WNV) and St. Louis encephalitis virus (SLEV), may also cross-react with DENV or ZIKV.

Clinical criteria for case classification

One or more of the following in the absence of a more likely diagnosis:

- One or more of the following: fever (measured or reported), rash, arthralgia, conjunctivitis, nausea/vomiting, retro-orbital pain or ocular pain, headache, myalgia, thrombocytopenia (platelet numbers of <200,000/mm^3), leukopenia (a total white blood cell count of <5,000/mm^3), abdominal pain or tenderness, persistent vomiting, mucosal bleeding at any site (e.g., gums, urinary tract), or liver enlargement >2 centimeters
- **Or** complication of pregnancy including either fetal loss fetus or neonate with congenital microcephaly, congenital intracranial calcifications, other structural brain or eye abnormalities, or other congenital central nervous system-related abnormalities including defects such as clubfoot or multiple joint contractures
- **Or** Guillain-Barré syndrome (GBS) meeting Brighton Collaboration level 1, 2, or 3 or other neurologic manifestations

Laboratory criteria for case classification

Supportive:

For locally acquired cases:

- All of the following:
  - Positive enzyme immunoassay (EIA), microsphere immunofluorescence assay (MIA), or immunofluorescent assay (IF) for ZIKV IgM antibodies in serum or CSF by a state public health laboratory (PHL) or the CDC
  - **And** positive EIA, MIA, or IF for IgM antibodies to DENV (or other flaviviruses endemic to the region where the exposure occurred) by a PHL or CDC
  - **And** no PRNT performed

- **Or** all of the following:
  - Positive EIA, MIA, or IF for ZIKV IgM antibodies in serum or CSF by a PHL or CDC
  - **And** positive EIA, MIA, or IF for IgM antibodies to DENV (or other flaviviruses endemic to the region where the exposure occurred) by a PHL or CDC
  - **And** positive neutralizing antibody titers by PRNT against ZIKV by a PHL or CDC
  - **And** positive neutralizing antibody titers by PRNT against DENV (or other flaviviruses endemic to the region where the exposure occurred) by a PHL or CDC

For imported cases:

- All of the following:
  - Positive EIA, MIA, or IF for ZIKV IgM antibodies in serum or CSF
  - **And** positive EIA, MIA, or IF for IgM antibodies to DENV (or other flaviviruses endemic to the region where the exposure occurred)
  - **And** no PRNT performed
- **Or** all of the following:
  - Positive EIA, MIA, or IF for ZIKV IgM antibodies in serum or CSF
  - **And** positive EIA, MIA, or IF for IgM antibodies to DENV (or other flaviviruses endemic to the region where the exposure occurred)
  - **And** positive neutralizing antibody titers by PRNT against ZIKV
  - **And** positive neutralizing antibody titers by PRNT against DENV (or other flaviviruses endemic to the region where the exposure occurred)

Epidemiological criteria for case classification

All of the following:

- Illness is clinically indistinguishable between flaviviruses
- **And** no epidemiological link to confirmed or probable case of a known flavivirus (e.g., ZIKV, DENV, WNV, SLEV, yellow fever virus)
- **And** one or more of the following
  - Resides in or past travel to an area with known transmission of more than one flavivirus
  - **Or** likely vector exposure in an area with suitable seasonal and ecological conditions for potential local vectorborne transmission
  - **Or** receipt of blood or blood products within 30 days of symptom onset
  - **Or** receipt of organ or tissue transplant within 30 days of symptom onset

Case classification

Flavivirus disease

Suspect:

Clinical criteria, supportive laboratory criteria, and epidemiological criteria

Flavivirus infection

Suspect:

Supportive laboratory criteria and epidemiological criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Due to the cross-reactivity seen among flaviviruses, it is important to ask if there has been any lifetime travel to a flavivirus-endemic country or vaccination for yellow fever or Japanese encephalitis viruses. Testing for other relevant flaviviruses at the Bureau of Public Health Laboratories (BPHL) will occur when applicable. Persons with neuroinvasive symptoms and no reported travel should be evaluated for WNV and SLEV infection.

Giardiasis, Acute

Merlin disease code: 00710 Giardiasis, acute

Paper case report form
Merlin extended data optional

Background

Giardiasis is an illness caused by the protozoan *Giardia lamblia* (also known as *G. intestinalis* or *G. duodenalis*) and characterized by diarrhea, abdominal cramps, nausea, vomiting, fever, anorexia, bloating, weight loss, or malabsorption. Asymptomatic infections are common, but asymptomatic cases do not meet the surveillance case definition.

Clinical criteria for case classification

One or more of the following: diarrhea, abdominal cramps, nausea, vomiting, fever, anorexia (loss of appetite), bloating, weight loss, malabsorption

Laboratory criteria for case classification

One or more of the following:

- Identification of *G. lamblia* cysts or trophozoites (e.g., microscopic detection)
- Or detection of *Giardia* nucleic acid (e.g., polymerase chain reaction [PCR])
- Or detection of *G. lamblia* antigen by immunodiagnostic test (e.g., unspecified immunoassay [IA], enzyme immunoassay [EIA], immunofluorescence assay [IF], direct fluorescent antibody [DFA], indirect fluorescent antibody [IFA])

Epidemiological criteria for case classification

Epidemiological link to confirmed giardiasis case

Case classification

Confirmed:
Clinical criteria and laboratory criteria

Probable:
Clinical criteria and epidemiological criteria

Criteria to distinguish a new case from previous reports

Not applicable

Glanders (*Burkholderia mallei*)

Florida HEALTH

Merlin disease code: 02400 Glanders (Burkholderia mallei) — No paper case report form

Isolates for all cases must be sent to the Bureau of Public Health Laboratories — No Merlin extended data

This condition has been identified as a potential bioterrorism agent by the CDC

Clinical criteria for case classification

The types of infection include localized, pus forming cutaneous infections, pulmonary infections, bloodstream infections, and chronic suppurative infections of the skin. Generalized symptoms of glanders include fever, muscle aches, chest pain, muscle tightness, and headache. Additional symptoms have included excessive tearing of the eyes, light sensitivity, and diarrhea.

- **Localized infections:** If there is a cut or scratch in the skin, a localized infection with ulceration will develop within 1 to 5 days at the site where the bacteria entered the body. Swollen lymph nodes may also be apparent. Infections involving the mucous membranes in the eyes, nose, and respiratory tract will cause increased mucous production from the affected sites.
- **Pulmonary infections:** In pulmonary infections, pneumonia, pulmonary abscesses, and pleural effusion can occur. Chest X-rays will show localized infection in the lobes of the lungs.
- **Bloodstream infections:** Glanders bloodstream infections are usually fatal within 7 to 10 days.

Laboratory criteria for case classification

Isolation of *Burkholderia mallei* from blood, sputum, urine, or skin lesions

Serologic assays are not available.

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:
Clinical criteria and laboratory criteria

Criteria to distinguish a new case from previous reports

Not applicable

Haemophilus influenzae Invasive Disease

Florida HEALTH

Merlin disease code: 03841 Haemophilus influenzae invasive disease

Isolates or specimens from cases in people <5 years must be sent to the Bureau of Public Health Laboratories

Paper case report form

Merlin extended data required for cases <5 years

Clinical criteria for case classification

Invasive disease may manifest as pneumonia, bacteremia, meningitis, epiglottitis, septic arthritis, cellulitis, or purulent pericarditis; less common infections include endocarditis and osteomyelitis

Laboratory criteria for case classification

Confirmatory:

Either of the following:

- 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 *H. influenzae*-specific nucleic acid in a specimen obtained from a normally sterile body site (e.g., blood or CSF), using polymerase chain reaction (PCR)

Presumptive:

Detection of *H. influenzae* type b antigen in CSF

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:

Confirmatory laboratory criteria

Probable:

Meningitis and presumptive laboratory criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

***H. influenza* invasive disease cases in people ≥5 years old are only reportable for laboratories participating in electronic laboratory reporting (ELR).** Cases in people ≥5 years old will be automatically created and reported in Merlin based on ELR results, and will not require symptoms to meet the case definition. For case reports in people ≥5 years old received from health care providers or via paper laboratory results, cases do not need to be investigated or created in Merlin; however, county health departments can choose to enter and report these cases.

Haemophilus influenzae Invasive Disease (Continued)

Cases in children <5 years old are reportable for all laboratories and health care providers. All cases in children <5 years old need to be investigated and reported, regardless of the method through which the case reports were received. **Extended data in Merlin is only required for those cases in people <5 years old.**

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

Serotype should be determined for all *H. influenzae* isolates because Hib vaccines protect against serotype b organisms only. This testing is especially important for children <5 years of age to determine possible vaccine failure or failure to vaccinate. Positive antigen test results from urine or serum specimens are unreliable for diagnosis of *H. influenzae* disease. Sputum cultures are not confirmatory as sputum is not obtained from a sterile site.

Hansen's Disease (Leprosy)

Florida HEALTH

Merlin disease code: 03090 Hansen's disease (leprosy)

Paper case report form required
No Merlin extended data

Clinical criteria for case classification

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 disease represent a spectrum reflecting the cellular immune response to *Mycobacterium leprae*. The following characteristics are typical of the major forms of the disease:

- **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 also may occur
- **Lepromatous**: A number of erythematous papules and nodules or infiltration of face, hands, and feet with lesions in a bilateral and symmetrical distribution that progress to thickening of the skin, possibly with reduced sensation
- **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 case classification

Confirmatory:
Both of the following (skin biopsy needed for definitive diagnosis):

- Absence of growth of mycobacteria on conventional media (if done)
- **And** either of the following:
    - Demonstration of acid-fast bacilli in skin or dermal nerve from a biopsy of skin a lepromatous lesion using Fite stain
    - **Or** identification of noncaseating granulomas with peripheral nerve involvement

Supportive:
Polymerase chain reaction (PCR) for *M. leprae* DNA

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:
Clinical criteria and confirmatory laboratory criteria

Suspect:
Clinical criteria and supportive laboratory criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

A newly available PCR test from the National Hansen's Disease Program (NHDP) can provide important epidemiologic exposure information. Please be sure to create and attach any PCR results to the case.

Contact the Bureau of Epidemiology for assistance with case assessment and laboratory testing.

There are no serological tests or skin test other than a biopsy of a lepromatous lesion. Testing can be completed at the NHDP Clinical Laboratory. Contact information for the NHDP: (800)-642-2477, www.hrsa.gov/hansens.

NHDP also has support services:

- **Free antibiotics for leprosy treatment** shipped to physicians.
- **Free consultations** for physicians treating complicated patients,
- **Free pathologic review of skin biopsy** and consultation concerning **molecular techniques** for identification of *M. leprae*.
- **Free educational materials** for health care professionals and patients to improve understanding of the disease, and to prevent injury and disability.
- **Surgical care and rehabilitation** for those referred for complicated (digit or limb threatening) wounds or reconstruction of correctable deformity resulting from Hansen's disease.

Hantavirus Infection

Florida HEALTH

Merlin disease code: 07800 Hantavirus infection

Specimens must be sent to the Bureau of Public Health Laboratories (BPHL); CDC testing must be cleared through the Bureau of Epidemiology, assigned a tracking number, and routed through BPHL

Paper case report form required

No Merlin extended data

This condition has been identified as a potential bioterrorism agent by the CDC

Background

Hantavirus pulmonary syndrome is a febrile illness with temperature >101.0°F (38.3°C) with a prodrome consisting of fever, chills, myalgia, headache, and gastrointestinal symptoms, followed by the abrupt onset of respiratory distress and hypotension.

Non-pulmonary syndrome hantavirus infection is a febrile illness with non-specific viral symptoms including 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.

Clinical criteria for case classification

Hantavirus pulmonary syndrome:

Both of the following:

- Acute onset of fever
- **And** one or more of the following:
  - 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
  - **Or** health care record contains 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

Non-pulmonary syndrome:

Both of the following:

- Acute onset of fever
- **And** absence of all the following:
  - Bilateral diffuse interstitial edema
  - **And** clinical diagnosis of ARDS
  - **And** radiographic evidence of noncardiogenic pulmonary edema
  - **And** an unexplained respiratory illness resulting in death

Laboratory criteria for case classification

One or more of the following:

- Detection of hantavirus-specific (Sin Nombre virus [SNV]) IgM
- **Or** fourfold rise in hantavirus-specific IgG in paired sera
- **Or** detection of hantavirus-specific nucleic acid by polymerase chain reaction (PCR)
- **Or** detection of hantavirus antigen by immunohistochemistry (IHC) in lung biopsy or autopsy tissues

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:
Clinical criteria and laboratory criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

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.

Commercial laboratories typically run a hantavirus enzyme immunoassay (EIA) screening test which lacks specificity and generates false positive results. Therefore, it is important to request results for the SNV-specific EIA which commercial labs routinely run on any specimen that first tests positive for hantavirus on the screening test. The SNV-specific EIA test is more specific and if positive, supports pursuing confirmatory testing at the Bureau of Public Health Laboratories (BPHL).

Hemolytic Uremic Syndrome (HUS)

Florida HEALTH

Merlin disease code: 42000 Hemolytic uremic syndrome (HUS)

No paper case report form
No Merlin extended data

Background

Hemolytic uremic syndrome (HUS) is characterized by the acute onset of microangiopathic hemolytic anemia, renal injury, and low platelet count. Thrombotic thrombocytopenic purpura (TTP) is also 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).

Clinical criteria for case classification

Confirmatory:
Acute illness diagnosed as HUS or TTP within three weeks after onset of an episode of acute or bloody diarrhea

Presumptive:
Acute illness diagnosed as HUS or TTP

Laboratory criteria for case classification

Confirmatory:
All of the following:

- Anemia (acute onset)
- And microangiopathic changes (i.e., presence of schistocytes, keratocytes, helmet cells, echinocytes, or burr cells) on peripheral blood smear
- And renal injury (acute onset) evidenced by either hematuria, proteinuria, or elevated creatinine level (i.e., ≥1.0 mg/dL in child aged <13 years or ≥1.5 mg/dL in person aged ≥13 years, or ≥50% increase over baseline)

Presumptive:
Both of the following:

- Anemia (acute onset)
- And renal injury (acute onset) evidenced by either hematuria, proteinuria, or elevated creatinine level (i.e., ≥1.0 mg/dL in child aged <13 years or ≥1.5 mg/dL in person aged ≥13 years, or ≥50% increase over baseline)

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:
Confirmatory clinical criteria and confirmatory laboratory criteria

Probable:
Either of the following:

- Presumptive clinical criteria and confirmatory laboratory criteria
- **Or** confirmatory clinical criteria and presumptive laboratory criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

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 <150,000/mm^3, other diagnoses should be considered.

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 postdiarrheal TTP also should meet the criteria for HUS. These cases are reported as postdiarrheal HUS.

Most diarrhea-associated HUS is caused by Shiga toxin-producing *Escherichia coli* (STEC), most commonly *E. coli* O157.

If a person meets the case definition for both Shiga toxin-producing *E. coli* (STEC) (Merlin code=00800) and HUS (Merlin code=4200), a case should be created and reported for each condition in Merlin.

Hepatitis A

Merlin disease code: 07010 Hepatitis A

Paper case report form
Merlin extended data required

Background

Hepatitis A is a vaccine-preventable, communicable disease of the liver caused by hepatitis A virus (HAV). Symptoms most commonly include fever, headache, malaise, anorexia, nausea, vomiting, diarrhea, abdominal pain, or dark urine followed in a few days by jaundice.

Clinical criteria for case classification

Confirmatory:
Both of the following:

- Discrete onset of any sign or symptom consistent with acute viral hepatitis
- And one or more of the following:
  - Jaundice
  - Or bilirubin level ≥3.0 mg/dL
  - Or serum alanine aminotransferase (ALT) level >200 IU/L

Rule out (criteria not met):
More likely diagnosis

Laboratory criteria for case classification

Confirmatory:
Either of the following:

- Detection of HAV by nucleic acid amplification (NAAT) (e.g., PCR)
- Or detection of HAV by genomic sequencing (e.g., sequencing)

Presumptive:
Either of the following:

- Detection of IgM antibody to HAV (IgM anti-HAV) by a public health laboratory (PHL)
- Detection of IgM anti-HAV by a non-PHL in the **absence** of negative IgM anti-HAV or NAAT result from a PHL within 28 days of onset date

Rule out (criteria not met):
Detection of IgM anti-HAV by a non-PHL in the **presence** of negative IgM anti-HAV or NAAT result from a PHL within 28 days of onset date

Epidemiological criteria for case classification

Epidemiological link to confirmed hepatitis A case (i.e., household or sexual contact with infected person during the 15–50 days before the symptom onset)

Case classification

Confirmed:
One or more of the following:

- Confirmatory laboratory criteria
- Or confirmatory clinical criteria and presumptive laboratory criteria
- Or confirmatory clinical criteria and epidemiological criteria

Criteria to distinguish a new case from previous reports

Hepatitis A is usually self-limiting and does not result in chronic infection. However, up to 10% of people infected with HAV may experience a relapse during the 6 months after acute illnesses. Do **not** create a new case for positive HAV results received within 6 months of an existing case.

Comments

A hepatitis A case should not be created in Merlin if there is an alternate more likely diagnosis.

Report all available liver enzyme results for every case under liver function tests (Merlin disease code: 00000).

Hepatitis B, Acute

Florida HEALTH

Merlin disease code: 07030 Hepatitis B, acute

Paper case report form
Merlin extended data required

Background

Acute hepatitis B is characterized by discrete onset of symptoms consistent with acute viral hepatitis (e.g., fever, headache, malaise, anorexia, nausea, vomiting, diarrhea, abdominal pain) and either jaundice or elevated liver enzymes (serum alanine aminotransferase [ALT] level >100 IU/L).

A documented negative hepatitis B virus (HBV) surface antigen (HBsAg) result followed within 180 days by a positive result (either HBsAg; HBV e antigen [HBeAg]; or nucleic acid test for HBV DNA, including quantitative, qualitative, and genotype testing [HBV NAT]) does not require an acute presentation to meet the surveillance case definition.

Clinical criteria for case classification

Confirmatory:
Both of the following:

- Discrete onset of symptoms
- And either of the following:
  - Jaundice
  - Or elevated liver enzymes (ALT level >100 IU/L)

Presumptive:
Discrete onset of symptoms

Reclassifying chronic hepatitis B as acute:
Chronic hepatitis B cases with one or more of the following will be reclassified as acute for investigation (if asymptomatic or symptoms cannot be determined, the case will be reclassified as chronic):

- Bilirubin ≥3.0 mg/dL
- Or ALT >1000 IU/L
- Or person <18 years old

Laboratory criteria for case classification

Confirmatory:

(1) Both of the following with confirmatory clinical criteria:
- Positive HBsAg >4 weeks after last dose of HBV vaccine
- And if done, positive IgM antibody to HBV core antigen (IgM anti-HBc)

(2) With no clinical criteria:
Negative HBsAg followed within 180 days by a positive result (either HBsAg, HBeAg, or HBV NAT)

Presumptive:
Positive IgM anti-HBc

Reclassifying acute hepatitis B as chronic:
If the case was asymptomatic, does not meet the criteria for an acute case, and has any of the following, the case will be reclassified as chronic hepatitis B:

- Positive HBsAg
- **Or** positive HBeAg
- **Or** positive HBV NAT
- **Or** any combination of positive HBsAg, HBeAg, or HBV NAT results performed >180 days apart

Reclassifying chronic hepatitis B as acute:
Chronic hepatitis B cases with a positive IgM anti-HBc will be reclassified as acute for investigation (asymptomatic or symptoms cannot be determined, the case will be reclassified as chronic)

Rule out (criteria not met):
Either of the following:

- Negative HBsAg followed within 180 days by a positive HBsAg that is within 4 weeks after vaccination
- **Or** positive HBsAg results performed >180 days apart if either of the positives is within 4 weeks after vaccination

Epidemiological criteria for case classification

Either of the following:

- Child ≤24 months old whose mother is known not to be infected with HBV
- **Or** person >24 months old epidemiologically linked to confirmed acute or chronic hepatitis B case

Case classification

Confirmed:
Either of the following:

- Child ≤24 months old with confirmatory clinical criteria, confirmatory laboratory criteria (1), and epidemiological criteria
- **Or** child ≤24 months old with confirmatory laboratory criteria (2) and epidemiological criteria
- **Or** person >24 months old with confirmatory clinical criteria and confirmatory laboratory criteria (1)
- **Or** person >24 months old with confirmatory laboratory criteria (2)

Probable:
One or more of the following:

- Child ≤24 months old with presumptive clinical criteria, presumptive laboratory criteria, and epidemiological criteria
- **Or** person >24 months old with presumptive clinical criteria and presumptive laboratory criteria
- **Or** person >24 months old with presumptive clinical criteria and epidemiological criteria

Criteria to distinguish a new case from previous reports

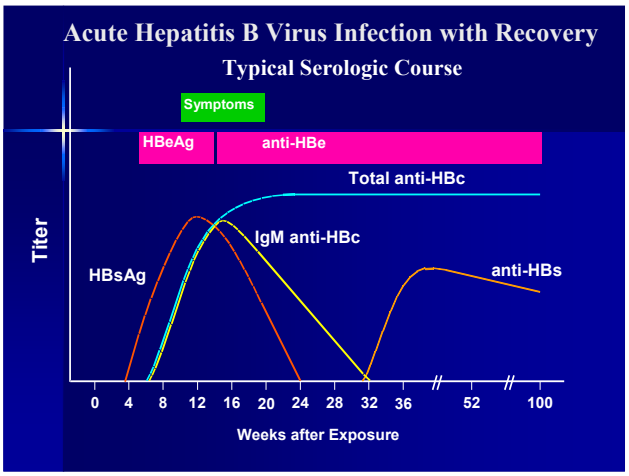
Do **not** create a new acute hepatitis B case if the person has a previous diagnosis or case of acute or chronic hepatitis B.

Comments

Multiple laboratory tests indicative of 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., a negative HBsAg result and positive HBV DNA result on the same specimen). For the purposes of this case definition, any positive result among the laboratory tests mentioned above is acceptable, regardless of other testing results from the same specimen collection date. Negative HBeAg results and negative HBV DNA results do not confirm the absence of HBV infection.

Report all available liver enzyme results for every case under liver function tests (Merlin disease code: 00000).

See graphic for additional information related to the serological course of disease.



Hepatitis B, Chronic

Florida HEALTH

Merlin disease code: 07032 Hepatitis B, chronic

Paper case report form
Merlin extended data required

Background

Persons with chronic hepatitis B virus (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. Note that a nucleic acid test for HBV DNA (HBV NAT) includes quantitative, qualitative, and genotype testing.

Clinical criteria for case classification

Reclassifying chronic hepatitis B as acute:
In the absence of a negative result for IgM antibodies to HBV core antigen (IgM anti-HBc), chronic hepatitis B cases with one or more of the following will be reclassified as acute for investigation (if asymptomatic or symptoms cannot be determined, the case will be reclassified as chronic):

- Bilirubin ≥3.0 mg/dL
- **Or** alanine aminotransferase (ALT) >1000 IU/L
- **Or** person <18 years old

Laboratory criteria for case classification

Confirmatory:
Either of the following:

- Any combination of positive HBV surface antigen (HBsAg), HBV e antigen (HBeAg), or HBV NAT results performed ≥180 days apart
- **Or** both of the following:
    - Negative IgM antibodies to HBV core antigen (IgM anti-HBc)
    - **And** one or more of the following:
        - Positive HBsAg
        - **Or** positive HBeAg
        - **Or** positive HBV NAT

Presumptive:
One or more of the following:

- Positive HBsAg
- **Or** positive HBeAg
- **Or** positive HBV NAT

Reclassifying chronic hepatitis B as acute:
Cases with either of the following will be reclassified as acute hepatitis B:

- Negative HBsAg followed within 180 days by a positive HBsAg, IgM anti-HBc, HBeAg, or HBV NAT
- **Or** positive IgM anti-HBc in the absence of a negative IgM anti-HBc (if asymptomatic or symptoms cannot be determined, the case will be reclassified as chronic)

Rule out (criteria not met):
Either of the following:

- Positive HBsAg results performed >180 days apart if either of the positives is within 4 weeks after vaccination
- Or negative HBsAg followed within 180 days by a positive HBsAg that is within 4 weeks after vaccination

Epidemiological criteria for case classification

Child ≤24 months old whose mother is known not to be infected with HBV

Case classification

Confirmed:
Either of the following:

- Person ≤24 months old with confirmatory laboratory criteria and epidemiological criteria
- Or person >24 months old with confirmatory laboratory criteria

Probable:
Either of the following:

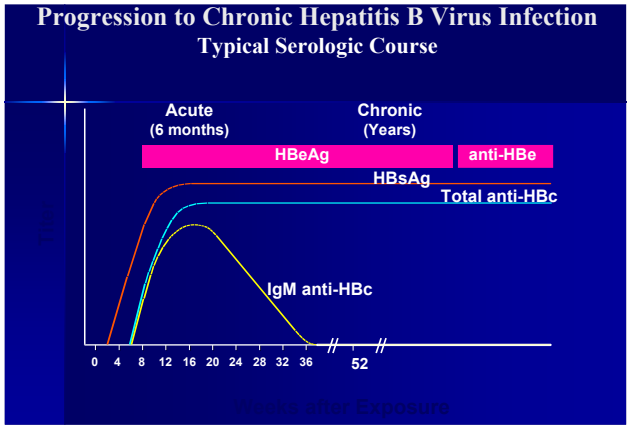
- Person ≤24 months old with presumptive laboratory criteria and epidemiological criteria who does not meet the case definition for acute hepatitis B
- Or person >24 months old with presumptive laboratory criteria who does not meet the case definition for acute hepatitis B

Criteria to distinguish a new case from previous reports

Do not create new a chronic hepatitis B case if the person has a previous diagnosis or case of chronic hepatitis B case.

Comments

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 from the same specimen collection date. Negative HBeAg results and HBV DNA levels below positive cutoff level do not confirm the absence of HBV infection.



Report all available liver enzyme results for every case under liver function tests (Merlin disease code: 00000).

See graphic for additional information related to the serological course of disease.

Hepatitis B, Perinatal

Merlin disease code: 07744 Hepatitis B, perinatal

No paper case report form
No Merlin extended data

Background

Perinatal hepatitis B virus (HBV) infection in a child ≤24 months of age may range from asymptomatic to fulminant hepatitis.

Clinical criteria for case classification

Not applicable

Laboratory criteria for case classification

One or more of the following:

- Positive HBV surface antigen (HBsAg) result in a child ≥1 to ≤24 months of age >4 weeks after last dose of HBV vaccine
- Or positive HBV e antigen (HBeAg) result in a child ≥9 to ≤24 months of age
- Or positive nucleic acid test (NAT) for HBV DNA (including quantitative, qualitative, and genotype testing) in a child ≥9 to ≤24 months of age

Epidemiological criteria for case classification

Confirmatory:
Child born in U.S. or U.S. territory to an HBV-positive mother

Presumptive:
Child born in U.S. or U.S. territory whose mother's HBV status is unknown, due to adoption or similar situations.

Case classification

Confirmed:
Child with laboratory criteria and confirmatory epidemiological criteria

Probable:
Child with laboratory criteria and presumptive epidemiological criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Infants born to HBV-infected 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 vaccine at 1 and 6 months of age, respectively. Post vaccination testing for HBsAg and antibody to hepatitis B surface antigen

(anti-HBsAg) is recommended from 1 to 2 months following completion of the vaccine series, but not earlier than 9 months of age. If HBIG and the initial dose of vaccine are delayed for >1 month after birth, testing for HBsAg may determine if the infant is already infected. If the mother is known to not be infected with HBV, refer to the case definition for acute Hepatitis B.

Children ≤24 months old should only be reported as perinatal hepatitis B (Merlin disease code: 07744), not acute hepatitis B (Merlin disease code: 07032) or chronic hepatitis B (Merlin disease code: 07030) **unless** the mother was known not to be infected with HBV. Test results prior to 1 month of age should not be used for classification.

If the mother of a child reported under this code was a resident of Florida during the pregnancy, the mother should be reported hepatitis B in pregnant women (Merlin disease code: 07039) and under disease codes for hepatitis B, acute (Merlin disease code: 07030) or hepatitis B, chronic (Merlin disease code: 07032) as appropriate.

Hepatitis B, Pregnant Women

Merlin disease code: 07039 Hepatitis B, pregnant women

Paper case report form
Merlin extended data required

Background

This case definition includes any woman who tests positive for hepatitis B virus (HBV) during pregnancy, regardless of symptomatology.

Clinical criteria for case classification

Not applicable

Laboratory criteria for case classification

One or more of the following:

- Positive HBV surface antigen (HBsAg)
- **Or** positive HBV e antigen (HBeAg)
- **Or** positive nucleic acid test (NAT) for HBV DNA (including quantitative, qualitative, and genotype testing)

Epidemiological criteria for case classification

A pregnant woman

Case classification

Confirmed:
A pregnant woman with laboratory criteria

Criteria to distinguish a new case from previous reports

Create a new case for each pregnancy.

Comments

Mothers under this disease (Merlin disease code: 07039) should **also** be reported as a separate case under disease codes for hepatitis B, acute (Merlin disease code: 07030) or hepatitis B, chronic (Merlin disease code: 07032) as appropriate.

Hepatitis C, Acute

Florida HEALTH

Merlin disease code: 07051 Hepatitis C, acute

Paper case report form
Merlin extended data required

Background

Acute hepatitis C is characterized by discrete onset of symptoms consistent with acute viral hepatitis (e.g., fever, headache, malaise, anorexia, nausea, vomiting, diarrhea, and abdominal pain) and either jaundice or elevated liver enzymes (serum alanine aminotransferase [ALT] level >200 IU/L) during the period of acute illness. Most people (approximately 80%) with acute hepatitis C infection are asymptomatic.

A documented negative hepatitis C virus (HCV) result followed within 365 days by a positive result (as described in the laboratory criteria for diagnosis) does not require an acute presentation to meet the surveillance case definition.

Nucleic acid tests for HCV RNA (HCV NAT) include quantitative, qualitative, or genotype testing. No HCV antigen tests are currently approved by FDA. These tests will be acceptable laboratory criteria if an FDA-approved test becomes available.

Clinical criteria for case classification

Confirmatory:
One or more of the following:

- Jaundice
- **Or** bilirubin ≥3.0 mg/dL
- **Or** ALT level >200 IU/L

Reclassifying acute hepatitis C as chronic:
In the absence of laboratory criteria (2), cases with either of the following will be reclassified as chronic hepatitis C:

- Person <18 years old was perinatal hepatitis C case
- **Or** more likely diagnosis (e.g., 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)
- **Or** case reviewer verified clinical criteria not met

Reclassifying chronic hepatitis C as acute:
Chronic hepatitis C cases with one or more of the following in the absence of a more likely diagnosis will be reclassified as acute:

- Jaundice
- **Or** bilirubin ≥3.0 mg/dL
- **Or** ALT level >200 IU/L
- **Or** person <18 years old was not perinatal hepatitis C case, unless case reviewer verified clinical criteria not met

Laboratory criteria for case classification

Confirmatory:

1. With clinical criteria, either of the following:
   - Positive HCV NAT
   - **Or** positive HCV antigen
2. With no clinical criteria, one or more of the following:
   - Infant <1 year old with one or more of the following:
     - Positive HCV NAT
     - **Or** positive HCV antigen
     - **Or** positive HCV antibody (anti-HCV)
   - **Or** a person ≥1 year old with one or more of the following:
     - Negative HCV NAT in the absence of positive HCV NAT or anti-HCV with same or earlier specimen event date followed within 365 days by positive HCV NAT
     - **Or** negative anti-HCV in the absence of positive anti-HCV with same or earlier specimen event date followed within 365 days by positive HCV NAT or anti-HCV
     - **Or** negative HCV antigen in the absence of positive HCV antigen or anti-HCV with same or earlier specimen event date followed within 365 days by positive HCV antigen
   - **Or** a person >36 months old with the following:
     - Positive HCV NAT result followed by 2 negative HCV NAT results ≥30 days apart, ≥30 days after the last positive HCV NAT followed within 365 days by positive HCV NAT

Presumptive:

Positive anti-HCV

Rule out (presumptive criteria not met):

Both of the following:

- Positive anti-HCV
- **And** negative HCV NAT

Reclassifying acute hepatitis C as chronic:

Cases who do not meet clinical criteria and do not have laboratory criteria (2) who have one or more of the following will be reclassified as chronic hepatitis C:

- Positive HCV NAT
- **Or** positive HCV antigen
- **Or** positive anti-HCV

Reclassifying chronic hepatitis C as acute:
Chronic hepatitis C cases with either of the following will be reclassified as acute:

- One of the following with no previous diagnosis or Merlin case of hepatitis C:
  - Negative anti-HCV and positive NAT with same specimen event date (unless case reviewer verified clinical criteria not met)
  - **Or** negative HCV NAT in the absence of positive HCV NAT or anti-HCV with same or earlier specimen event date followed within 365 days by positive HCV NAT
  - **Or** negative anti-HCV in the absence of positive anti-HCV with same or earlier specimen event date followed within 365 days by positive HCV NAT or anti-HCV
  - **Or** negative HCV antigen in the absence of positive HCV antigen or anti-HCV with same or earlier specimen event date followed within 365 days by positive HCV antigen
- **Or** a person >36 months old with positive HCV NAT result followed by 2 negative HCV NAT results ≥30 days apart, ≥30 days after last positive HCV NAT followed within 365 days by positive HCV NAT

Epidemiological criteria for case classification

One of the following:

- Child ≤36 months old known to be exposed to HCV via a mechanism other than perinatal transmission (e.g., acquired via health care exposure or household contact)
- **Or** person >36 months old with no previous diagnosis or Merlin case of acute hepatitis C in past year and no previous diagnosis or Merlin case of chronic hepatitis C
- **Or** person >36 months old with previous case of acute or chronic hepatitis C with a positive HCV NAT result followed by 2 negative HCV NAT results ≥30 days apart, ≥30 days after last positive HCV NAT result

Case classification

Confirmed:
Either of the following:

- Confirmatory clinical criteria, confirmatory laboratory criteria (1), and epidemiological criteria
- Confirmatory laboratory criteria (2) and epidemiological criteria

Probable:
Confirmatory clinical criteria, presumptive laboratory criteria, and epidemiological criteria

Criteria to distinguish a new case from previous reports

See epidemiological criteria for classification. A new probable acute case may be re-classified as a confirmed acute case if a positive NAT for HCV RNA or a positive HCV antigen is reported within the same year. A confirmed acute case may be classified as a confirmed chronic case if a positive NAT for HCV RNA or a positive HCV antigen is reported one year or longer after acute case onset. A confirmed acute case may not be reported as a probable chronic case (i.e., HCV antibody positive, but with an unknown HCV RNA NAT or antigen status).

Reinfection

For persons with a previous acute or chronic hepatitis C with a positive HCV NAT result, create a new confirmed acute case for persons >36 months old when there are two negative HCV NAT results followed by a new positive HCV NAT result, each of which are ≥30 days apart. Reinfection cases should be investigated and interviewed.

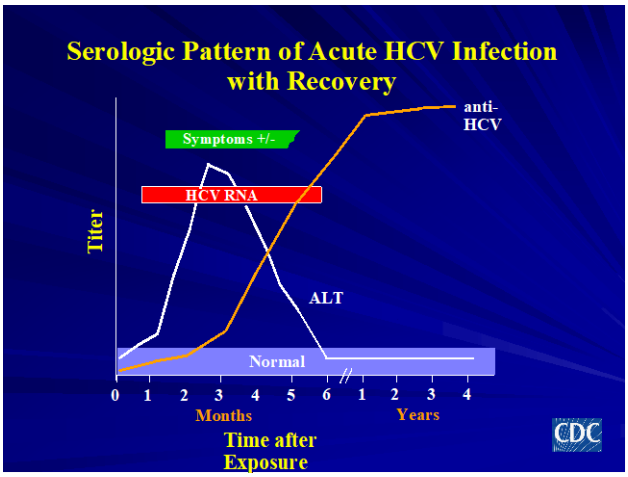
Comments

Infants and children ≤36 months old should only be reported as perinatal hepatitis C (Merlin disease code: 07058), not acute hepatitis C (Merlin disease code: 07051) or chronic hepatitis C (Merlin disease code: 07054) **unless** there is evidence that the case was exposed to HCV via a mechanism other than perinatal transmission (e.g., was acquired via health care exposure) or progressed to chronic infection. Test results prior to 2 months of age should not be used for classification.

Up to 20% of acute hepatitis C cases will be anti-HCV negative when reported because some (5%–10%) have not yet seroconverted and others (5%–10%) remain negative even with prolonged follow-up. Available serologic tests for anti-HCV do not distinguish between acute and chronic or past infection. Thus, other causes of acute hepatitis should be excluded for anti-HCV positive patients who have an acute illness compatible with viral hepatitis.

Report all available liver enzyme results for every case under liver function tests (Merlin disease code: 00000).

See graphic for additional information related to the serological course of disease.



Hepatitis C, Chronic

Florida HEALTH

Merlin disease code: 07054 Hepatitis C, chronic

Paper case report form
Merlin extended data required

Background

Persons with chronic hepatitis C may have no evidence of liver disease or may have a spectrum of disease ranging from chronic hepatitis to cirrhosis or liver cancer. Most persons with chronic infection are asymptomatic until later in the disease process when significant damage has been done to the liver.

Nucleic acid tests for HCV RNA (HCV NAT) include quantitative, qualitative, or genotype testing. No HCV antigen tests are currently approved by FDA. These tests will be acceptable laboratory criteria if an FDA-approved test becomes available.

Clinical criteria for case classification

Reclassifying chronic hepatitis C as acute:
Cases with one or more of the following will be reclassified as acute hepatitis C:

- Jaundice
- **Or** bilirubin ≥3.0 mg/dL
- **Or** alanine aminotransferase (ALT) >200 IU/L)
- **Or** person <18 years old was not perinatal hepatitis C case

Rule out (reclassification criteria not met):
Either of the following:

- More likely diagnosis
- **Or** case reviewer verified clinical criteria not met

Laboratory criteria for case classification

Confirmatory:
Person ≥1 year old with either of the following:

- Positive HCV NAT
- **Or** positive HCV antigen

Presumptive:
Person ≥1 year old with positive HCV antibody (anti-HCV)

Rule out (presumptive criteria not met):
Both of the following:

- Positive anti-HCV
- **And** negative HCV NAT

Reclassifying chronic hepatitis C as acute:
Cases with either of the following will be reclassified as acute hepatitis C:

- One of the following with no previous diagnosis or Merlin case of hepatitis C:
  - Negative anti-HCV and positive NAT with same specimen event date (unless case reviewer verified clinical criteria not met)
  - **Or** negative HCV NAT in the absence of positive HCV NAT or anti-HCV with same or earlier specimen event date followed within 365 days by positive HCV NAT
  - **Or** negative anti-HCV in the absence of positive anti-HCV with same or earlier specimen event date followed within 365 days by positive HCV NAT or anti-HCV
  - **Or** negative HCV antigen in the absence of positive HCV antigen or anti-HCV with same or earlier specimen event date followed within 365 days by positive HCV antigen
- **Or** person >36 months old with positive HCV NAT result followed by 2 negative HCV NAT results ≥30 days apart, ≥30 days after last positive HCV NAT followed within 365 days by positive HCV NAT

Epidemiological criteria for case classification

Does not meet the case definition for acute hepatitis C and meets one or more of the following:

- Child ≤36 months old known to be exposed to HCV via a mechanism other than perinatal transmission (e.g., acquired via health care exposure or household contact)
- **Or** child ≤36 months old with 2 positive HCV NAT results ≥180 days apart
- **Or** person >36 months old with no previous diagnosis or Merlin case of chronic hepatitis C
- **Or** person >36 months old with previous case of chronic hepatitis C with positive HCV NAT result followed by 2 negative HCV NAT results ≥30 days apart, ≥30 days after the last positive HCV NAT

Case classification

Confirmed:
Confirmatory laboratory criteria and epidemiological criteria

Probable:
Presumptive laboratory criteria and epidemiological criteria

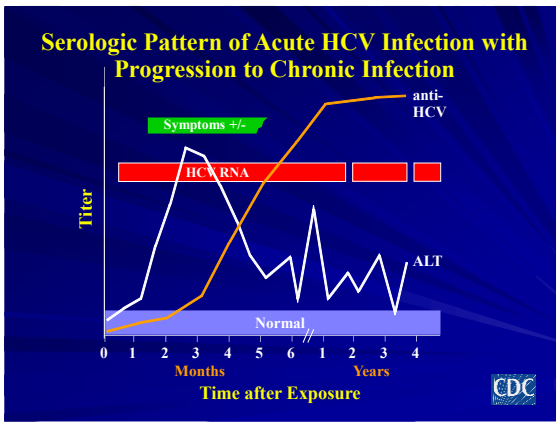
Criteria to distinguish a new case from previous reports

See epidemiological criteria for classification. A new chronic hepatitis C case should be created for positive results received >365 days after an acute hepatitis C case occurred. If there is a previous chronic hepatitis C diagnosis or Merlin case, do **not** create a new chronic hepatitis C case.

Reinfection
For persons with a previous acute or chronic hepatitis C with a positive HCV NAT result, create a new confirmed chronic case for persons >36 months old when there are two negative HCV NAT results followed by a new positive HCV NAT result, each of which are ≥30 days apart. Reinfection cases should be investigated and interviewed.

Comments

Children ≤36 months old should only be reported as perinatal hepatitis C (Merlin disease code: 07058), not acute hepatitis C (Merlin disease code: 07051) or chronic hepatitis C (Merlin disease code: 07054) **unless** there is evidence that the case was exposed to HCV via a mechanism other than perinatal transmission (e.g., was acquired via health care exposure) or the child has 2 positive HCV NAT results ≥180 days apart. Test results prior to 2 months of age should not be used for classification. Anti-HCV testing prior to 18 months of age should not be used for classification.



Report all available liver enzyme results for every case under liver function tests (Merlin disease code: 00000).

See graphic for additional information related to the serological course of disease.

Hepatitis C, Perinatal

Merlin disease code: 07058 Hepatitis C, perinatal

No paper case report form
No Merlin extended data

Background

Perinatal hepatitis C virus (HCV) infection in pediatric patients may range from asymptomatic to fulminant hepatitis.

Clinical criteria for case classification

Not applicable

Laboratory criteria for case classification

Confirmatory:
Either of the following:

- Positive nucleic acid test (NAT) for HCV RNA (including quantitative, qualitative, or genotype testing)
- **Or** positive HCV antigen test (if and when an FDA-approved test for HCV antigen is available)

Supportive:
Both of the following:

- Positive HCV antibody (anti-HCV)
- **And** the absence of a negative HCV NAT

Epidemiological criteria for case classification

Child ≤36 months old not known to be exposed to HCV via a mechanism other than perinatal transmission (e.g., not acquired via health care exposure or household contact). This would include situations where the mother's HCV infection status is unknown (e.g., closed adoptions).

Case classification

Confirmed:
Child ≥2 months old and ≤36 months old with confirmatory laboratory criteria and epidemiological criteria

Probable:
Child <2 months old with confirmatory laboratory criteria and epidemiological criteria

Suspect:
Child ≥2 months old and ≤36 with supportive laboratory criteria and epidemiological criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

There is no safe and effective intervention known to prevent vertical transmission of HCV from mother to fetus or baby during pregnancy or childbirth. Approximately 75% of children who are vertically infected with HCV will develop chronic hepatitis C and should be referred for further evaluation and follow-up. HCV vertical transmission is higher in those who are born to HIV-infected mothers.

Follow-up testing should be prioritized for all suspect cases to identify true perinatal infections. Antibody testing alone can reflect the mother's infection rather than true infection in an infant. Follow-up should include contacting the primary care giver and provider to ensure confirmatory testing is conducted.

Children ≤36 months old should only be reported as perinatal hepatitis C (Merlin disease code: 07058), not acute hepatitis C (Merlin disease code: 07051) or chronic hepatitis C (Merlin disease code: 07054) **unless** there is evidence that the case was exposed to HCV via a mechanism other than perinatal transmission (e.g., was acquired via health care exposure). Test results prior to 2 months of age should not be used for classification.

Event date should be based on earliest relevant laboratory test date within the 2 to 36 month window.

Merlin disease code: 07052 Hepatitis D

Paper case report form
Merlin extended data required

Background

Hepatitis D is an acute viral illness characterized by discrete onset of symptoms and either jaundice or elevated liver enzymes. Symptoms most commonly include fatigue, abdominal pain, loss of appetite/anorexia, nausea, vomiting, or dark urine (tea colored). Illness is always associated with a coexistent hepatitis B infection. Hepatitis D virus (HDV) infection may occur as acute co-infection with hepatitis B virus (HBV), or as super-infection in persons with chronic HBV infection.

Clinical criteria for case classification

Confirmatory:
Both of the following:

- Discrete onset of symptoms
- And either of the following:
  - Jaundice
  - Or elevated liver enzymes

Presumptive:
Discrete onset of symptoms

Laboratory criteria for case classification

Both of the following:

- Either of the following as evidence of HBV infection:
  - Positive IgM antibody to HBV core antigen (IgM anti-HBc)
  - Or positive HBV surface antigen (HBsAg)
- And one or more of the following:
  - Positive IgM antibody to HDV (IgM anti-HDV)
  - Or positive HDV RNA by polymerase chain reaction (PCR)
  - Or positive total antibody (IgM and IgG) to HDV (anti-HDV)

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:
Confirmatory clinical criteria and laboratory criteria

Probable:
Presumptive clinical criteria and laboratory criteria

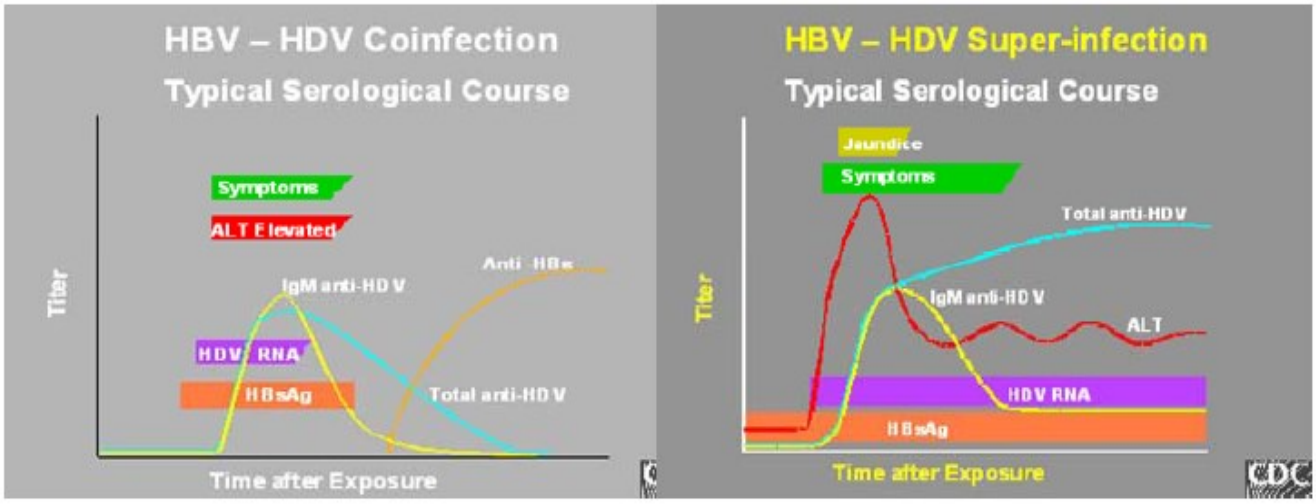
Criteria to distinguish a new case from previous reports

Not applicable

Comments

Report all available liver enzyme results for every case under liver function tests (Merlin disease code: 00000).

See graphic for additional information related to the serological course of disease.



Hepatitis E

Merlin disease code: 07053 Hepatitis E

Paper case report form
Merlin extended data required

Background

Hepatitis E is an acute viral illness characterized by discrete onset of symptoms and either jaundice or elevated liver enzymes. Symptoms most commonly include fatigue, abdominal pain, loss of appetite/anorexia, nausea, vomiting, or dark urine (tea colored).

Clinical criteria for case classification

Confirmatory:
Both of the following:

- Discrete onset of symptoms
- And either of the following:
    - Jaundice
    - Or elevated liver enzymes

Presumptive:
Discrete onset of symptoms

Laboratory criteria for case classification

Both of the following:

- One or more of the following as evidence of Hepatitis E virus (HEV) infection:
    - Positive IgM antibody to HEV (IgM anti-HEV)
    - Or positive HEV RNA by polymerase chain reaction (PCR)
    - Or positive total antibody (IgM and IgG) to HEV (anti-HEV)
- And all the following:
    - Absence of a positive IgM antibody to hepatitis A virus (IgM anti-HAV)
    - And absence of a positive IgM antibody to hepatitis B core antigen (IgM anti-HBc)
    - And absence of a positive hepatitis B virus surface antigen (HBsAg)
    - And absence of a positive hepatitis C virus antibody (anti-HCV)

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:
Confirmatory clinical criteria and laboratory criteria

Probable:
Presumptive clinical criteria and laboratory criteria

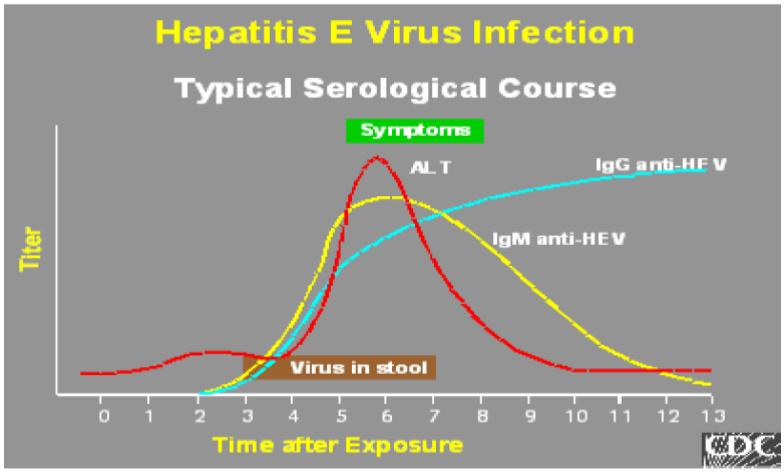
Criteria to distinguish a new case from previous reports

Not applicable

Comments

Report all available liver enzyme results for every case under liver function tests (Merlin disease code: 00000).

See graphic for additional information related to the serological course of disease.



Hepatitis G

Merlin disease code: 07059 Hepatitis G

Paper case report form
Merlin extended data required

Background

Persons with hepatitis G virus (HGV) infection may or may not have evidence of liver disease.

Clinical criteria for case classification

Not applicable

Laboratory criteria for case classification

Positive HGV RNA (e.g., polymerase chain reaction [PCR])

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:
Laboratory criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

The pathogenic role of HGV remains under investigation. HGV is mainly transmitted via blood. Infection has been documents in persons that have received multiple blood transfusions or are intravenous drug users. It is estimated that frequency of infection is around 1-2% in healthy populations in the U.S. Epidemiologic research has shown that type 2 is prevalent in the U.S. Co-infection with hepatitis C virus is common.

Report all available liver enzyme results for every case under liver function tests (Merlin disease code: 00000).

Herpes B Virus, Possible Exposure (B Virus)

Florida HEALTH

Merlin disease code: 07103 Herpes B virus, possible exposure

Paper case report form
Merlin extended data required

Background

Possible exposures to herpes B virus include any bite, scratch, or mucous membrane exposure to bodily fluids from a non-human primate (NHP) capable of transmitting herpes B virus (HBV), primarily macaque monkeys.

Clinical criteria for case classification

Not applicable

Laboratory criteria for case classification

Not applicable

Epidemiological criteria for case classification

Exposed to bodily fluids or tissue from an NHP capable of transmitting HBV via a bite, scratch, mucous membrane, or environmental exposure

Case classification

Confirmed:
Epidemiological criteria

Not a case:
Exposure to NHP determined **not** to be capable of transmitting HBV

Criteria to distinguish a new case from previous reports

Not applicable

Comments

All monkey exposures as described above, including those where rabies post-exposure prophylaxis (PEP) is not recommended, should be reported as herpes B virus, possible exposure (Merlin disease code: 07103). Exposures where rabies PEP is recommended should be reported as herpes B virus, possible exposure (Merlin disease code: 07103) **and** rabies, possible exposure (Merlin disease code: 07101). Macaque monkeys are the primary reservoir for HBV, however other species of NHPs that are in direct contact with macaque monkeys can be infected and should be reported as confirmed cases. All other NHP exposures do **not** require HBV prophylaxis and serologic follow-up, and should be documented as not a case in Merlin.

HBV can migrate to the central nervous system within hours, therefore prompt wound cleansing followed by rapid initiation of anti-viral prophylaxis is recommended immediately following an exposure. The value of initiating prophylaxis >5 days after an exposure is unknown. Like herpes simplex virus in humans, infected animals are infected for life, but virus shedding only occurs intermittently

and is most likely to occur when the animal is stressed. There is no conclusive test that can definitively identify HBV negative animals or when infected animals are actively shedding virus.

Additional resources:

- CDC information for providers: https://www.cdc.gov/herpesbvirus/healthcare-providers.html
- National B Virus Laboratory: http://www2.gsu.edu/~wwwvir/index.html (titer testing is fee-based and can be ordered directly by health care providers)

Influenza A, Novel or Pandemic Strains

Florida HEALTH

Merlin disease code: 48790 Influenza, novel or pandemic strains

Specimens for all cases must be sent to the Bureau of Public Health Laboratories and must be cleared through the Bureau of Epidemiology (850) 245-4401.

CONTACT THE BUREAU OF EPIDEMIOLOGY

Paper case report form required

No Merlin extended data

Background

Human infections with novel influenza A viruses that can be transmitted from person to person may signal the beginning of an influenza pandemic. Rapid detection and reporting of human infections with novel influenza A viruses (viruses against which there is little to no pre-existing immunity) will facilitate prompt detection and characterization of influenza A viruses with pandemic potential and accelerate the implementation of effective public health responses.

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 the CDC 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 a Food and Drug Administration-authorized test specific for detection of that novel influenza virus.

Clinical criteria for case classification

An illness compatible with influenza virus infection (fever >100°Ft, with cough or sore throat)

Laboratory criteria for case classification

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 fourfold rise in strain-specific serum antibody titers are considered confirmatory.

Epidemiological criteria for case classification

Both of the following:

- Epidemiological link to laboratory-confirmed novel influenza A case
- **And** transmission of the agent by the usual modes of transmission is plausible

Case classification

Confirmed:
Laboratory criteria

Probable:
Clinical criteria and epidemiological criteria

Suspect:
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 H3viruses is classified as a suspected case until the confirmation process is complete.

Criteria to distinguish a new case from previous reports

Not applicable

Comments

This is a generic case definition for novel influenza infection. During an outbreak or pandemic situation such as for 2009 Novel Influenza A H1N1 event specific outbreak case definitions and reporting criteria will be developed. Please contact the Bureau of Epidemiology for the latest case definition during an outbreak or pandemic event.

For additional information about influenza or influenza surveillance, refer to the Bureau of Epidemiology Influenza website www.floridahealth.gov/diseases-and-conditions/influenza/index.html or the CDC Influenza web site: www.cdc.gov/flu/.

On December 13, 2006, the United States formally accepted the revision of the International Health Regulations, referred to as IHR (2005) (http://archive.hhs.gov/news/press/2006pres/20061213.html). 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 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.

Influenza-Associated Pediatric Mortality

Florida HEALTH

Merlin disease code: 48700 Influenza-associated pediatric mortality

Specimens for all cases must be sent to the Bureau of Public Health Laboratories

Paper case report form required

No Merlin extended data

Clinical criteria for case classification

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 <18 years old should be reported.

A death should not be reported if:

1. No laboratory confirmation of influenza virus infection
2. Influenza illness followed by full recovery to baseline health status prior to death
3. Death in person ≥18 years old
4. More likely cause of death after review and consultation

Laboratory criteria for case classification

Influenza virus testing may be done on pre- or post-mortem clinical specimens, and include identification of influenza A or B virus infections by a positive result by one or more of the following:

- Influenza virus isolation in cell culture from respiratory specimens
- **Or** reverse-transcriptase polymerase chain reaction (RT-PCR) testing of respiratory specimens
- **Or** immunofluorescent antibody staining (direct or indirect) of respiratory specimens
- **Or** rapid influenza diagnostic testing of respiratory specimens
- **Or** immunohistochemical (IHC) staining for influenza viral antigens in respiratory tract tissue from autopsy specimens
- **Or** fourfold rise in influenza hemagglutination inhibition (HI) antibody titer in paired acute and convalescent sera (single serum specimens are not interpretable)

Epidemiological criteria for case classification

Death in person <18 years old

Case classification

Confirmed:
Clinical criteria, laboratory criteria, and epidemiological criteria

Criteria to distinguish a new case from previous reports

Not applicable

Lead Poisoning

Merlin disease code: 94890 Lead poisoning

No paper case report form
No Merlin extended data

Background

Lead poisoning is often asymptomatic, but may result in impaired neurobehavioral development, low IQ, slow nerve conduction, peripheral neuropathies, and encephalopathy.

Clinical criteria for case classification

Not applicable

Laboratory criteria for case classification

Confirmatory:
Either of the following:

- Blood lead level ≥3.5 µg/dL measured from a venous specimen
- **Or** blood lead level ≥3.5 µg/dL measured from ***two*** capillary specimens, unknown specimens (i.e., venous or capillary), or a combination of capillary and unknown specimens taken ***within 12 weeks*** of one another

Supportive:
Blood lead level ≥3.5 µg/dL measured from a single capillary specimen or unknown specimen (i.e., venous or capillary)

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:
Confirmatory laboratory criteria

Suspect:
Supportive laboratory criteria

Criteria to distinguish a new case from previous reports

Only one case should be created for any person tested, regardless of the number of results received or the blood lead level. All additional results received for that person will be associated with that case.

Comments

All blood level lead tests are reportable in Florida. **Note that cases with blood lead levels ≥3.5 and <10 µg/dL will be automatically created and reported as lead poisoning cases in Merlin. No follow-up is required on**

these cases and no extended data will be required. Screening results <3.5 µg/dL will be maintained in Merlin and a case will be created with a dx status of "not a case" for each person.

The Childhood Lead Poisoning Screening and Case Management Guide is a resource available for CHD disease investigators and health care providers. It contains additional information on disease investigation, lead poisoning testing, case management, and requirements for environmental investigations. This guide can be found at the following link: www.floridahealth.gov/healthy-environments/lead-poisoning/_documents/childhood-leadpoisoning-screening-casemanagement-guide.pdf.

Legionellosis

Florida HEALTH

Merlin disease code: 48280 Legionellosis

Paper case report form
Merlin extended data required

Background

Legionellosis is associated with three clinically and epidemiologically distinct illnesses:

1) **Legionnaires' disease**: Characterized by fever, myalgia, cough, and clinical or radiographic pneumonia. Additional symptoms may include shortness of breath, headache, malaise, chest discomfort, confusion, nausea, diarrhea, or abdominal pain
2) **Pontiac fever**: A milder illness without pneumonia
3) **Extrapulmonary legionellosis**: Infections at sites outside the lungs with evidence of *Legionella* at that site

Clinical criteria for case classification

Legionnaires' disease:
Pneumonia including acute onset of lower respiratory illness with fever or cough

Pontiac fever:
One or more of the following: fever, chills, myalgia, malaise, headache, fatigue, nausea, or vomiting

Extrapulmonary legionellosis:
Clinical evidence of disease at sites outside the lungs (e.g., endocarditis, wound infection, joint infection, graft infection)

Laboratory criteria for case classification

Confirmatory:
One or more of the following:

- Isolation of any *Legionella* organism from lower respiratory secretions, lung tissue, pleural fluid, or extrapulmonary site (e.g., culture)
- **Or** detection of *Legionella pneumophila* serogroup 1 antigen in urine (e.g., antigen detection)
- **Or** detection of *Legionella* species by nucleic acid assay (e.g., polymerase chain reaction [PCR])
- **Or** fourfold or greater rise in antibody titer to either single *Legionella* species or multiple species (e.g., antibody titers)

Supportive:
Detection of specific *Legionella* antigen or staining of the organism in lower respiratory secretions, lung tissue, pleural fluid, or extrapulmonary site (e.g., antigen detection, direct fluorescent antibody [DFA] staining, immunohistochemistry)

Not a case:
Either of the following:

- Single positive antibody titers to either single *Legionella* species or multiple species (e.g., antibody detection)
- **Or** equivocal or negative antibody titers to either single *Legionella* species or multiple species (e.g., antibody detection)

Legionellosis (Continued)

Epidemiological criteria for case classification

Legionnaires' disease:
Either of the following in the 14 days before symptom onset:

- Epidemiological link to a setting with a confirmed source of *Legionella* (e.g., positive environmental sampling result associated with a cruise ship, public accommodation, cooling tower)
- Or epidemiological link to a setting with a suspected source of *Legionella* that is associated with at least one confirmed case

Pontiac fever:
Either of the following in the 3 days before symptom onset:

- Epidemiological link to a setting with a confirmed source of *Legionella* (e.g., positive environmental sampling result associated with a cruise ship, public accommodation, cooling tower)
- Or epidemiological link to a setting with a suspected source of *Legionella* that is associated with at least one confirmed case

Case classification

Confirmed:
Clinical criteria and confirmatory laboratory criteria

Probable:
Clinical criteria and epidemiological criteria

Suspect:
Clinical criteria and supportive laboratory criteria

Criteria to distinguish a new case from previous reports

Create a new case if a person's previous illness was followed by a period of recovery prior to acute onset of clinically compatible symptoms and subsequent laboratory evidence of infection.

Comments

Travel-associated Legionnaires' disease: Legionnaires' disease case spent ≥1 night away from usual residence in a hotel, cruise ship, or other public accommodation in 14 days before onset (excluding health care settings)

Travel-associated Pontiac fever: Pontiac fever case spent ≥1 night away from their usual residence in a hotel, cruise ship, or other public accommodation in 3 days before onset (excluding health care settings)

Presumptive health care-associated Legionnaires' disease: Legionnaires' disease case with ≥10 days of continuous stay at health care facility in 14 days before onset

Possible health care-associated Legionnaires' disease: Legionnaires' disease case spent a portion of 14 days before onset in health care facility, but not ≥10 days of continuous stay

Leptospirosis

Merlin disease code: 10090 Leptospirosis

Paper case report form required
No Merlin extended data

Clinical criteria for case classification

Both of the following:

- Fever within the past two weeks
- And either of the following:
    - Two or more of the following: myalgia, headache, jaundice, conjunctival suffusion without purulent discharge, rash (i.e., maculopapular or petechial)
    - Or one or more of the following: aseptic meningitis, gastrointestinal symptoms (e.g., abdominal pain, nausea, vomiting, diarrhea), pulmonary complications (e.g., cough, breathlessness, hemoptysis), cardiac arrhythmias, electrocardiograph abnormalities, renal insufficiency (e.g., anuria, oliguria), hemorrhage (e.g., intestinal, pulmonary, hematuria, hematemesis), jaundice with acute renal failure

Symptoms may be biphasic. Clinical presentation may range from very mild to fatal illness and in early stages can be confused with influenza or other more common febrile illnesses.

Laboratory criteria for case classification

Confirmatory:

One or more of the following:

- Isolation of *Leptospira* from a clinical specimen
- Or fourfold or greater increase in *Leptospira* agglutination titer between acute- and convalescent-phase serum specimens
- Or detection of *Leptospira* in a clinical specimen by direct immunofluorescence assay (DFA)
- 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 polymerase chain reaction [PCR]) from a clinical specimen

Presumptive:

One or more of the following:

- *Leptospira* MAT titer of ≥200 but <800 from one or more serum specimens
- Or detection of anti-*Leptospira* antibodies in a clinical specimen by indirect immunofluorescence assay (IFA)
- Or demonstration of *Leptospira* in a clinical specimen by darkfield microscopy
- Or detection of IgM antibodies against Leptospira in an acute phase serum specimen

Epidemiological criteria for case classification

Epidemiological link to confirmed or probable leptospirosis case or exposure event (adventure race, triathlon, flooding, infected animal, etc. with associated laboratory-confirmed cases)

Leptospirosis (Continued)

Case classification

Confirmed:
Confirmatory laboratory criteria

Probable:
Either of the following:

- Clinical criteria and presumptive laboratory criteria
- **Or** clinical criteria and epidemiological criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Leptospirosis is shed in the urine of many wild and domestic animals including rodents, pigs, raccoons, deer, and dogs. Animal reservoirs are often healthy appearing. The organism can survive for extended periods in moist conditions and water and is transmitted through ingestion or contact with cuts. Exposure risks include contact with contaminated water or infected animals (especially rodents) in the month prior to symptom onset. Laboratory testing should be routed through the Bureau of Public Health Laboratories after consultation with a central office environmental epidemiologist.

Listeriosis

Florida HEALTH

Merlin disease code: 02700 Listeriosis

Isolates for all cases must be sent to the Bureau of Public Health Laboratories

Paper case report form, Spanish required

Merlin extended data required

Clinical criteria for case classification

Invasive listeriosis

- Systemic illness caused by *Listeria 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 ≤28 days old. 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, or 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 and 28 days).

Non-invasive *Listeria* infections

- *Listeria* infection manifesting as an isolate from a non-invasive clinical specimen suggestive of a non-invasive infection includes febrile gastroenteritis, urinary tract infection, and wound infection.

Laboratory criteria for case classification

Confirmatory:

Isolation of *L. monocytogenes* from one or more of the following:

- Normally sterile site reflective of invasive infection
- **Or** products of conception (e.g., chorionic villi, placenta, fetal tissue, umbilical cord blood, amniotic fluid) collected at time of delivery for pregnancy loss, intrauterine fetal demise, or birth
- **Or** non-sterile neonatal specimen (e.g., meconium, tracheal aspirate, but not products of conception) collected within 48 hours of delivery

Presumptive:

Detection of *L. monocytogenes* by culture-independent diagnostic testing from one or more of the following:

- Normally sterile site reflective of invasive infection
- **Or** products of conception collected at time of delivery for pregnancy loss, intrauterine fetal demise, or birth
- **Or** non-sterile neonatal specimen collected within 48 hours of delivery

Supportive:

Isolation of *L. monocytogenes* from non-invasive clinical specimen (e.g., stool, urine, wound, or other specimen not specified in confirmatory laboratory criteria)

Epidemiological criteria for case classification

One or more of the following:

- Neonate whose mother has confirmatory or presumptive laboratory criteria from products of conception
- Or neonate with clinical criteria whose mother has confirmatory or presumptive laboratory criteria from a normally sterile site
- Or mother who gave birth to neonate that had confirmatory or presumptive laboratory criteria and neonatal specimen was collected within 28 days of birth

Case classification

Confirmed:
Confirmatory laboratory criteria

Probable:
Either of the following:

- Presumptive laboratory criteria
- Or epidemiological criteria

Suspect:
Supportive laboratory criteria

Criteria to distinguish a new case from previous reports

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. Evaluate duplicate or recurring reports of listeriosis on a case-by-case basis.

Comments

Meningitis due to *L. monocytogenes* should be reported as listeriosis (Merlin disease code: 02700) and not as bacterial or mycotic meningitis (Merlin disease code: 32090).

Merlin disease code: 06959 Lyme disease

Paper case report form
Merlin extended data required

Background

Florida is considered a low incidence state. Cases with suspected exposure in Florida should be prioritized for investigation before imported cases. This surveillance case definition was developed for national reporting of Lyme disease; it is not intended to be used in clinical diagnosis.

Lyme disease is a systemic, tick-borne disease with protean manifestations, including dermatologic, rheumatologic, neurologic, and cardiac abnormalities. The most common clinical marker for the disease is erythema migrans (EM), the initial skin lesion that occurs in 60%-80% of patients.

If **either** of the following are true, see ***acute Lyme disease***:

- A health care provider diagnosed EM in the absence of another known etiology
- **Or** symptom onset was within 30 days of laboratory testing and no late manifestation symptoms were reported.

If the following is true, see ***late-manifestation Lyme disease***:

A health care provider diagnosed Lyme disease and any of the following in the absence of another known etiology: recurrent join swelling, lymphocytic meningitis, cranial neuritis including Bell's palsy, radiculoneuropathy (radiating pain along a nerve, e.g., sciatica, symmetric or asymmetric numbness or tingling), encephalomyelitis, or second or third degree atrioventricular conduction defects.

Acute Lyme disease

For purposes of surveillance, EM is defined as a skin lesion that typically begins as a red macule or papule and expands over a period of days to weeks to form a large round lesion, often with partial central clearing. A single primary lesion must reach ≥5 cm in size across its largest diameter. Secondary lesions also may occur. Annular erythematous lesions occurring within several hours of a tick bite represent hypersensitivity reactions and do not qualify as EM. For most patients, the expanding EM lesion is accompanied by other acute symptoms, particularly fatigue, fever, headache, mildly stiff neck, arthralgia, or myalgia. These symptoms are typically intermittent. **The EM diagnosis must be made by a health care provider.** Laboratory confirmation is recommended for persons with no known exposure.

Late-manifestation Lyme disease

For purposes of surveillance, late manifestations include any of the following when an alternate explanation is not found:

- *Musculoskeletal system*: Recurrent, brief attacks (weeks or months) of objective joint swelling in one or a few joints, sometimes followed by chronic arthritis in one or a few joints. Manifestations **not** considered as criteria for diagnosis include chronic progressive arthritis not preceded by brief attacks and chronic symmetrical polyarthritis. Additionally, arthralgia, myalgia, or fibromyalgia syndromes alone are not criteria for musculoskeletal involvement.
- *Neurological system*: Any of the following, alone or in combination: lymphocytic meningitis; cranial neuritis, particularly facial palsy (may be bilateral); radiculoneuropathy; or, rarely, encephalomyelitis. Headache, fatigue, paresthesia, or mildly stiff neck alone, are **not** criteria for neurologic involvement.

- *Cardiovascular system*: Acute onset of high-grade (second degree or third degree) atrioventricular conduction defects that resolve in days to weeks and are sometimes associated with myocarditis. Palpitations, bradycardia, bundle branch block, or myocarditis alone are **not** criteria for cardiovascular involvement.

Clinical criteria for case classification

Acute Lyme disease:
A health care provider diagnosed EM ≥5 cm in the absence of a more likely diagnosis

Late-manifestation Lyme disease:
Health care provider diagnosed musculoskeletal, neurological, or cardiovascular system late manifestation in the absence of a more likely diagnosis

Unknown Lyme disease:
No clinical information available (no medical record or patient interview)

Rule out (criteria not met):
One of the following:

- Asymptomatic
- **Or** more likely diagnosis
- **Or** health care provider specifically stated this is not Lyme disease case

Laboratory criteria for case classification

Confirmatory:
One or more of the following:

- Isolation of *B. burgdorferi* sensu stricto or *B. mayonii* in culture
- **Or** detection of *B. burgdorferi* sensu stricto or *B. mayonii* by *B. burgdorferi* group-specific nucleic acid amplification (e.g., polymerase chain reaction [PCR])
- **Or** detection of *B. burgdorferi* group-specific antigens by immunohistochemical (IHC) assay on biopsy or autopsy tissues
- **Or** standard two-tier testing is positive:
    - Positive or equivocal for serum antibody to *B. burgdorferi* by immunoassay (e.g., enzyme immunoassay [EIA] or immunofluorescent [IF] assay)
    - **And** either of the following:
        - IgM western blot is positive for 2 or more of the following bands: 21-25 kDa (OspC), 39 kDa (BmpA), or 41 kDa (Fla) within 30 days of symptom onset **(for acute Lyme disease only)**
        - **Or** IgG western blot is positive for 5 or more of the following bands: 18 kDa, 21-25 kDa (OspC), 28 kDa, 30 kDa, 39 kDa (BmpA), 41 kDa (Fla), 45 kDa, 58 kDa (not GroEL), 66kDa, or 93 kDa
- **Or** modified two-tier test is positive

Presumptive:
IgG western blot is positive for 5 or more of the following bands: 18 kDa, 21-25 kDa (OspC), 28 kDa, 30 kDa, 39 kDa (BmpA), 41 kDa (Fla), 45 kDa, 58 kDa (not GroEL), 66kDa, or 93 kDa

Supportive:
Detection of *B. afzelii* or *B. garinii* by nucleic acid amplification (e.g., PCR) assay

Late-manifestation Lyme disease
Not a case:
Both of the following:

- Positive or equivocal for serum antibody to *B. burgdorferi* by immunoassay (e.g., EIA or IF assay)
- **And** negative IgG western blot

Epidemiological criteria for case classification

Exposure in a high incidence state (i.e., states with a 3-year average incidence of ≥10 cases per 100,000 persons, as defined by www.cdc.gov/lyme/stats/tables.html).

Florida is considered a low incidence state. Cases with suspected exposure in Florida should be prioritized for investigation before imported cases.

Case classification

Confirmed:
Either of the following:

- Clinical criteria and confirmatory laboratory criteria
- **Or** health care provider-diagnosed EM and epidemiological criteria

Probable:
Either of the following:

- Clinical criteria and presumptive laboratory criteria
- **Or** confirmatory laboratory criteria and epidemiological criteria

Suspect:
One of the following:

- Confirmatory or presumptive laboratory criteria and no clinical information available
- **Or** presumptive laboratory criteria and epidemiological criteria
- **Or** supportive laboratory criteria
- **Or** health care provider-diagnosed EM

Criteria to distinguish a new case from previous reports

Create a new case if a person is diagnosed as a reinfection (symptoms significantly resolved between the first and second diagnosis) in a new calendar year.

Comments

Lyme disease reports will not be considered cases if the medical provider specifically states this is not a case of Lyme disease, or the only symptom listed is "tick bite" or "insect bite."

Lyme disease can be acquired abroad in Europe and Asia. Incidences rates are available through some government agencies within these continents. If an infection is acquired abroad, please contact the case reviewer, who will determine if the exposure location is classified as high incidence or low incidence.

Association of Public Health Laboratories (APHL) Lyme testing interpretation tool: www.aphl.org/aboutAPHL/publications/Documents/ID-2021-Lyme-Disease-Serologic-Testing-Reporting.pdf.

Malaria

Merlin disease code: 08460 Malaria

Permanent slides for all cases must be sent to the Bureau of Public Health Laboratories

Paper case report form
Indigenous malaria case report form
Merlin extended data required

Clinical criteria for case classification

Signs and symptoms are variable; however, most patients experience fever. In addition to fever, common associated symptoms include headache, back pain, chills, sweats, myalgia, nausea, vomiting, diarrhea, and cough. Untreated *Plasmodium falciparum* infection can lead to coma, renal failure, pulmonary edema, and death. The diagnosis of malaria should be considered for any person who has these symptoms and who has traveled to an area in which malaria is endemic. Asymptomatic parasitemia can occur among persons who have been long-term residents of areas in which malaria is endemic.

Laboratory criteria for case classification

Confirmatory:
Either of the following:

- Detection of speciated or unspeciated malaria parasites by microscopy in thick or thin peripheral blood films by state public health laboratory or CDC
- Or detection of *Plasmodium* species DNA in peripheral blood by nucleic acid test (e.g., polymerase chain reaction [PCR] test)

Supportive:
Either of the following:

- Detection of circulating malaria-specific antigens using rapid diagnostic test (RDT)
- Or detection of malaria parasites by microscopy in thick or thin peripheral blood films by commercial laboratory

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:
Confirmatory laboratory criteria

Suspect:
Supportive laboratory criteria

Cases include persons 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 previous reports

Create a new case for a subsequent infection in the same person caused by a different *Plasmodium* species. A person with a subsequent attack caused by the same species in the U.S. may indicate a relapsing infection or treatment failure caused by drug resistance.

Comments

Reports of malaria parasites detected in thick or thin peripheral blood films should be accompanied by a determination of the species by morphologic criteria and a calculation of the percentage of red blood cells infected by asexual malaria parasites (parasitemia).

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 U.S. and its territories).
- Induced: Malaria acquired through artificial means (e.g., blood transfusion, common syringes, malariotherapy).
- Relapsing: Renewed manifestation (i.e., of clinical symptoms or parasitemia) of malarial infection that is separated from previous manifestations of the same infection by an interval greater than any interval resulting from the normal periodicity of the paroxysms.
- Cryptic: An isolated case of malaria that cannot be epidemiologically linked to additional cases.

Measles (Rubeola)

Florida HEALTH

Merlin disease code: 05590 Measles (rubeola)

Paper case report form

Specimens for all cases must be sent to the Bureau of Public Health Laboratories

Merlin extended data required

Clinical criteria for diagnosis

Confirmatory:

Both of the following in the absence of a more likely diagnosis:

- Fever (does not need to reach ≥101.0°F [>38.3°C])
- **And** rash (does not need to last ≥3 days)

Presumptive:

All of the following in the absence of a more likely diagnosis:

- Generalized maculopapular rash of ≥3 days
- **And** temperature ≥101.0°F (≥38.3°C)
- **And** cough, coryza, or conjunctivitis

Rule out (criteria not met):

More likely diagnosis

Laboratory criteria for case classification

Confirmatory:

One or more of the following:

- Isolation of measles virus
- **Or** detection of measles by nucleic acid amplification (e.g., polymerase chain reaction [PCR])
- **Or** IgG seroconversion or a significant rise in measles IgG antibody level between acute- and convalescent-phase specimens
- **Or** detection of measles IgM antibody

Rule out (criteria not met):

One or more of the following:

- Detection of measles by nucleic acid amplification (e.g., PCR)
- **Or** MMR vaccination during the previous 6-45 days
- **Or** CDC testing was negative
- **Or** BPHL testing was negative in the absence of positive CDC testing

Epidemiological criteria for case classification

Epidemiological link to laboratory-confirmed measles case

Case classification

Confirmed:

Either of the following:

- Confirmatory clinical criteria and confirmatory laboratory criteria
- **Or** confirmatory clinical criteria and epidemiological criteria

Probable:
Presumptive clinical criteria in the absence of negative measles laboratory testing

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Epidemiologic classification of internationally imported and U.S.-acquired cases

- **Internationally imported case:** An internationally imported case is defined as a case in which measles results from exposure to measles virus outside the U.S. as evidenced by at least some of the exposure period (7–21 days before rash onset) occurring outside the U.S. and rash onset occurring within 21 days of entering the U.S. 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:** A U.S.-acquired case is defined as a case in which the patient had not been outside the U.S. during the 21 days before rash onset or was known to have been exposed to measles within the U.S.

  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 epidemiological 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 U.S. 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 U.S.
  - **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.

Internationally imported, import-linked, and imported-virus cases are considered collectively to be import-associated cases.

Melioidosis (*Burkholderia pseudomallei*)

Florida HEALTH

Merlin disease code: 02500 Melioidosis (Burkholderia pseudomallei)

No paper case report form

Isolates or specimens for all cases must be sent to the Bureau of Public Health Laboratories

No Merlin extended data

This condition has been identified as a potential bioterrorism agent by the CDC

Background

Clinical presentation of the disease varies on a case-by-case basis. The following characteristics are typical of melioidosis:

- An acute or chronic localized infection which may or may not include symptoms of fever and muscle aches. Such infection often results in a skin ulcer, nodule, or abscess.
- An acute pulmonary infection with symptoms of high fever, headache, chest pain, anorexia, and general muscle aches.
- A bloodstream infection with symptoms of fever, headache, respiratory distress, abdominal pain, joint pain, muscle aches, or disorientation.
- A disseminated infection with symptoms of fever, weight loss, stomach or chest pain, muscle or joint pain, headache, or seizure. Abscesses in the liver, lung, spleen, and prostate are often observed in patients diagnosed with disseminated infections; less frequently, abscesses in the brain or other locations may occur.

Clinical criteria for case classification

Confirmatory:
One or more of the following in the absence of a more likely diagnosis: fever >100.4°F (38.0°C), muscle aches, skin ulcer, skin nodule, skin abscess, anorexia, weight loss, pneumonia, respiratory distress, chest pain, headache, abdominal pain, joint pain, disorientation, seizure, organ abscess (e.g., liver, lung, spleen, prostate, or brain), encephalomyelitis, meningitis, extra-meningeal disease

Presumptive:
Diagnosis of melioidosis in health care record

Rule out (confirmatory criteria not met):
More likely diagnosis

Laboratory criteria for case classification

Confirmatory:
Isolation of *Burkholderia pseudomallei*

Presumptive:
Either of the following:

- Fourfold or greater rise in *B. pseudomallei* antibody titer by indirect hemagglutination assay (IHA) between acute- and convalescent-phase serum specimens obtained at least 2 weeks apart
- **Or** evidence of *B. pseudomallei* DNA (e.g., by LRN-validated polymerase chain reaction [PCR] assay)

Supportive:
B. pseudomallei total antibody titer of ≥1:40 by IHA

Epidemiological criteria for case classification

One or more of the following:

- History of travel to a melioidosis-endemic region
- **Or** known exposure to *B. pseudomallei* from intentional release or known product/source exposure (outside of laboratory)
- **Or** known exposure to *B. pseudomallei* from occupational laboratory exposure

Vital records criteria for case classification

Death certificate lists melioidosis as cause of death or significant condition contributing to death

Case classification

Confirmed:
Confirmatory laboratory criteria

Probable:
Either of the following:

- Presumptive or confirmatory clinical criteria, presumptive laboratory criteria, and epidemiological criteria
- **Or** presumptive laboratory criteria, epidemiological criteria, and vital records criteria

Suspect:
One or more of the following:

- Confirmatory clinical criteria, supportive laboratory criteria, and epidemiological criteria
- **Or** presumptive clinical criteria, supportive laboratory criteria, and epidemiological criteria
- **Or** supportive laboratory criteria, epidemiological criteria, and vital records criteria

Criteria to distinguish a new case from previous reports

Not applicable

Meningitis, Bacterial or Mycotic

Florida HEALTH

Merlin disease code: 32090 Meningitis, bacterial or mycotic

Paper case report form
Merlin extended data required

Clinical criteria for case classification

Meningitis manifests most commonly with fever, headache, and a stiff neck; the disease may progress rapidly to shock and death. However, other manifestations may be observed.

Laboratory criteria for case classification

One or more of the following:

- Isolation of a bacterial,[1] cryptococcal,[2] or fungal species from cerebrospinal fluid
- **Or** isolation of bacterial[1] or fungal species from brain tissue
- **Or** isolation of bacterial,[1] cryptococcal,[2] or fungal species from blood

[1] **Excluding meningitis caused by *Haemophilus influenzae, Listeria monocytogenes, Neisseria meningitidis, Salmonella* species, *Streptococcus pneumoniae,* or other individually reportable bacterial diseases** (report these cases according to their appropriate case definitions using the specific disease codes)

[2] **Excluding meningitis caused by *Cryptococcus neoformans* or an unspecified *Cryptococcus* species** (report culture-confirmed *Cryptococcus gattii* meningitis cases)

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:
Clinical criteria and laboratory criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

See the case definitions for *Haemophilus influenzae,* invasive disease (Merlin disease code: 03841); listeriosis (Merlin disease code: 02700) caused by *Listeria monocytogenes*; meningococcal disease caused by *Neisseria meningitidis* (Merlin disease code: 03630); *Streptococcus pneumoniae,* invasive disease (Merlin disease code: 04823, 04830); and salmonellosis (Merlin disease code: 00300) caused by *Salmonella* species to report cases of meningitis caused by these species.

Meningococcal Disease

Florida HEALTH

Merlin disease code: 03630 Meningococcal disease

Paper case report form

Isolates for all cases must be sent to the Bureau of Public Health Laboratories

Merlin extended data required

Background

Meningococcal disease manifests most commonly as meningitis or meningococcemia that may progress rapidly to purpura fulminans, shock, and death. Other manifestations might be observed.

Clinical criteria for case classification

Clinical purpura fulminans in the absence of positive blood culture

Laboratory criteria for case classification

Confirmatory:

Either of the following:

- Isolation of *Neisseria meningitidis* from a normally sterile site (e.g., blood or cerebrospinal fluid [CSF], or less commonly, synovial, pleural, or pericardial fluid) or from purpuric lesions
- **Or** detection of *N. meningitidis*-specific nucleic acid in normally sterile site (e.g., blood or CSF) using a polymerase chain reaction (PCR)

Presumptive:

Either of the following:

- Detection of *N. meningitidis* antigen in formalin-fixed tissue by immunohistochemistry (IHC)
- **Or** detection of *N. meningitidis* antigen in CSF by latex agglutination

Supportive:

Gram-negative diplococci, not yet identified, from a normally sterile site (e.g., blood or CSF)

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:

Confirmatory laboratory criteria

Probable:

Presumptive laboratory criteria

Suspect:

Either of the following:

- Clinical criteria
- **Or** supportive laboratory criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Positive antigen test results from urine or serum specimens are unreliable for diagnosing meningococcal disease. Sputum cultures are not considered confirmatory, as sputum is not obtained from a normally sterile site.

Mercury Poisoning

Merlin disease code: 94899 Mercury poisoning

Paper case report form required
No Merlin extended data

Clinical criteria for case classification

The clinical presentation of mercury poisoning varies depending upon the form of mercury (elemental, organic or inorganic) as well as the route of exposure and the dose if ingested. Any organ system may be affected.

The signs and symptoms of acute exposure to mercury may vary depending on the form of mercury (elemental or inorganic). For elemental mercury, acute toxicity might result in fever, fatigue, and clinical signs of pneumonitis. For inorganic mercury, symptoms might include profuse vomiting and diarrhea that is often bloody, followed by hypovolemic shock, oliguric (decreased urine production) renal failure, and possibly death. Delayed toxicity symptoms (>1 month) are typical of organic mercury poisoning and usually involve the central nervous system. These symptoms might include paresthesias, headaches, ataxia, dysarthria (motor speech disorder), visual field constriction, blindness, and hearing impairment.

Laboratory criteria for case classification

One or more of the following:

- ≥10 micrograms per liter (µg/L) of urine
- **Or** ≥10 micrograms per liter (µg/L) of whole blood
- **Or** ≥5 micrograms per gram (µg/g) of hair

No definitive correlation exists between either blood or urine mercury levels or mercury toxicity. Urine mercury levels are not useful in evaluating organic mercury poisonings.

Epidemiological criteria for case classification

Either of the following:

- High index of suspicion based on exposure history location and time)
- **Or** epidemiological link to confirmed mercury poisoning case

Case classification

Confirmed:
Clinical criteria and laboratory criteria

Probable:
Clinical criteria and epidemiological criteria

Criteria to distinguish a new case from previous reports

Not applicable

Middle East Respiratory Syndrome (MERS)

Merlin disease code: 07992 Middle East respiratory syndrome (MERS)

Paper case report form required
No Merlin extended data

This case definition is subject to change. Please see the Surveillance and Investigation Guidance website (www.Floridahealth.gov/SurveillanceInvestigationGuide) for the current case definition.

Mpox

Florida HEALTH

Merlin disease code: 05004 Monkeypox

Specimens for all cases must be sent to the Bureau of Public Health Laboratories

CONTACT BUREAU OF EPIDEMIOLOGY

No paper case report form

Merlin extended data required

Background

Monkeypox is a zoonotic infection endemic to several Central and West African countries. African rodents and other small mammals are thought to be the reservoir. Non-human primates are also considered susceptible, and it is thought that many other mammals could potentially be susceptible. Cases of monkeypox have previously been identified in travelers from or residents of endemic countries.

Clinical criteria for case classification

Confirmatory:
Rash

Rule out (criteria not met):
More likely diagnosis

Laboratory criteria for case classification

Confirmatory:
Either of the following:

- Detection of monkeypox virus by nucleic acid amplification (NAA) in the absence of a negative orthopoxvirus result from the same multiplex NAA test
- **Or** detection of monkeypox virus by genomic sequencing

Presumptive:
One or more of the following:

- Detection of orthopoxvirus by NAA
- **Or** demonstration of orthopoxvirus by immunohistochemistry or electron microscopy
- **Or** detection of orthopoxvirus IgM in a specimen collected with 4 to 56 days after rash onset

Supportive:
Detection of monkeypox virus by NAA and a negative orthopoxvirus result from the same multiplex NAA test

Rule out (criteria not met):
One or more of the following:

- Both of the following:
  - Detection of orthopoxvirus by NAA
  - **And** laboratory evidence of infection with another non-variola orthopoxvirus
- **Or** detection of orthopoxvirus IgM in a specimen collected within 60 after vaccination
- **Or** both of the following:
  - Detection of monkeypox virus by NAA and a negative orthopoxvirus result from the same multiplex NAA test
  - **And** negative result for orthopoxvirus or monkeypox virus by NAA by a public health lab or CDC

Epidemiological criteria for case classification

Confirmatory:
One or more of the following in the 21 days prior to symptom onset:

- Contact with person with similar appearing rash or confirmed or probable monkeypox case
- **Or** close or intimate contact with individuals in a social network experiencing monkeypox, including men who have sex with men who meet partners through an online website, digital application ("app"), or social event (e.g., a bar or party)
- **Or** travel to country with confirmed cases of monkeypox or where monkeypox virus is endemic
- **Or** contact with dead or live wild animal or exotic pet that is an African endemic species or used a product derived such animals (e.g., game meat, creams, lotions, powders)

Rule out (criteria not met):
Either of the following:

- Negative result for non-variola orthopoxvirus
- **Or** negative result for monkeypox virus

Case classification

Confirmed:
Confirmatory laboratory criteria

Probable:
Presumptive laboratory criteria

Suspect:
Either of the following:

- Confirmatory clinical criteria and epidemiological criteria
- **Or** supportive laboratory criteria

Criteria to distinguish a new case from previous reports

Create a new monkeypox case if healthy tissue has replaced the site of all previous lesions after they have scabbed and fallen off and new lesions are positive for orthopoxvirus or monkeypox virus by molecular methods or genomic sequencing.

Multisystem Inflammatory Syndrome in Children (MIS-C)

Florida HEALTH

Merlin disease code: 00071 Multisystem Inflammatory Syndrome in Children (MIS-C)

No paper case report form
Merlin extended data required

Background

Multisystem inflammatory syndrome in children (MIS-C) is a rare condition temporally associated with COVID in persons <21 years old that includes inflammation of multiple body parts including heart, lungs, kidneys, brain, skin, eyes, and gastrointestinal organs. The cause of MIS-C is currently unknown. There is no specific laboratory test available for case confirmation. Laboratory testing is aimed at identifying evidence of inflammation as listed in laboratory criteria for case classification.

Clinical criteria for case classification

Confirmatory:

All of the following:

- Age <21 years
- **And** fever
- **And** either of the following:
  - Hospitalized
  - **Or** death
- **And** C-reactive protein (CRP) ≥3.0 mg/dL (30 mg/L)
- **And** new onset of two or more of the following:
  - Shock
  - Gastrointestinal **involvement** (abdominal pain, vomiting, or diarrhea)
  - Mucocutaneous **involvement** (rash, inflammation of oral mucosa, eye redness, or redness or swelling of hands or feet)
  - Cardiac involvement (left ventricular ejection fraction <55%; coronary artery dilatation, aneurysm, or ectasia; or elevated troponin)
  - Hematologic involvement (platelet count <150,000 cells/µL or absolute lymphocyte count < 1,000 cells/µL)

Rule out (criteria not met):

More likely diagnosis

Laboratory criteria for case classification

Confirmatory:

One or more of the following:

- Detection of SARS-CoV-2 RNA using molecular amplification test (e.g., polymerase chain reaction [PCR])
- **Or** detection of SARS-CoV-2 antigen
- **Or** detection of SARS-CoV-2 antibodies

Rule out (criteria not met):

Detection of SARS-CoV-2 RNA, antigen, or antibodies was not within 60 days before hospitalization or death or within the 7 days after hospitalization

MIS-C
(Continued)

Epidemiological criteria for case classification

COVID exposure to a confirmed or probable case of COVID in the 60 days before hospitalization or death

Vital records criteria for case classification

Death certificate for person <21 years old lists MIS as underlying cause of death or significant condition contributing to death

Case classification

Confirmed:
Confirmatory clinical criteria and laboratory criteria

Probable:
Confirmatory clinical criteria and epidemiological criteria

Suspect:
Vital records criteria

Criteria to distinguish a new case from previous reports

Create new case if onset dates or hospital admission dates >90 days apart

Mumps

Merlin disease code: 07290 Mumps

No paper case report form
Merlin extended data required

Background

Mumps is an illness with acute onset of unilateral or bilateral tender, self-limited swelling of the parotid or other salivary gland(s) lasting at least 2 days; acute illness characterized by a mumps-associated complication such as aseptic meningitis, encephalitis, hearing loss, orchitis, oophoritis, parotitis or other salivary gland swelling, mastitis, or pancreatitis.

Clinical criteria for case classification

Confirmatory:
One or more of the following: acute parotitis lasting at least 2 days, other salivary gland swelling lasting at least 2 days, aseptic meningitis, encephalitis, hearing loss, orchitis, oophoritis, mastitis, or pancreatitis

Presumptive:
One or more of the following in the absence of a more likely diagnosis: acute parotitis lasting at least 2 days, other salivary gland swelling lasting at least 2 days, orchitis, or oophoritis

Supportive:
One or more of the following in the absence of a more likely diagnosis: parotitis, acute salivary gland swelling, orchitis, or oophoritis

Laboratory criteria for case classification

Confirmatory:
Either of the following:

- Isolation of mumps virus in cell culture from clinical specimen (e.g., blood, urine, oral swab)
- **Or** detection of mumps nucleic acid (e.g., standard or real-time polymerase chain reaction [PCR])

Presumptive:
Positive anti-mumps IgM antibody

Epidemiological criteria for case classification

Epidemiological link to confirmed or probable mumps case

Case classification

Confirmed:
Confirmatory clinical criteria and confirmatory laboratory criteria

Probable:
Either of the following:

- Presumptive clinical criteria and presumptive laboratory criteria
- **Or** presumptive clinical criteria and epidemiological criteria

Suspect:
Either of the following:

- Confirmatory or presumptive laboratory criteria
- **Or** supportive clinical criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Epidemiologic classification of internationally imported and U.S.-acquired cases

- **Internationally imported case:** An internationally imported case is defined as a case in which mumps results from exposure to mumps virus outside the U.S. as evidenced by at least some of the exposure period (12-25 days before onset of parotitis or other mumps-associated complications) occurring outside the U.S. and onset of parotitis or other mumps-associated complications within 25 days of entering the U.S. and no known exposure to mumps in the U.S. during that time. All other cases are considered U.S.-acquired cases.
- **U.S.-acquired case:** A U.S.-acquired case is defined as a case in which the patient had not been outside the U.S. during the 25 days before onset of parotitis or other mumps-associated complications or was known to have been exposed to mumps within the U.S.

  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 epidemiological link to an internationally imported case was not identified but for which viral genetic evidence indicates an imported mumps genotype, i.e., a genotype that is not occurring within the U.S. in a pattern indicative of endemic transmission. An endemic genotype is the genotype of any mumps virus that occurs in an endemic chain of transmission (i.e., lasting ≥12 months). Any genotype that is found repeatedly in U.S.-acquired cases should be thoroughly investigated as a potential endemic genotype, especially if the cases are closely related in time or location.
  - **Endemic case**: A case for which epidemiological or virological evidence indicates an endemic chain of transmission. Endemic transmission is defined as a chain of mumps virus transmission continuous for ≥12 months within the U.S.
  - **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.

Internationally imported, import-linked, and imported-virus cases are considered collectively to be import-associated cases.

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. There fore, 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.

Currently, there is insufficient information to determine whether any mumps strains are endemic to the U.S. or to distinguish endemic from non-endemic strains.

Neurotoxic Shellfish Poisoning

Florida HEALTH

Merlin disease code: 98800 Neurotoxic shellfish poisoning

No paper case report form
No Merlin extended data

Clinical criteria for case classification

Onset is within a few minutes to a few hours after consumption of epidemiologically implicated shellfish (typically clams, mussels, oysters, whelks and certain gastropods). Symptoms include tingling and numbness of lips, mouth, fingers, and toes; muscular aches; ataxia, and dizziness and usually accompanied by diarrhea, vomiting and/or nausea. Symptoms sometimes include reversal of hot and cold sensations; pupil dilation; and respiratory distress. Illness is self-limited and generally milder than paralytic shellfish poisoning; some patients have required ICU support for respiratory distress. Duration is from a few hours to a few days.

Laboratory criteria for case classification

Detection of toxin (brevetoxin) in epidemiologically implicated shellfish

Epidemiological criteria for case classification

Either of the following:

- Consumed shellfish with a positive laboratory finding (brevetoxin)
- Or consumed shellfish from areas where other toxic shellfish have been found or where red tide is documented (shellfish beds closed in region by Florida Department of Agriculture and Consumer Services)

Case classification

Confirmed:
Clinical criteria and with epidemiological criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Contact your Regional Environmental Epidemiologist for information.

Merlin disease code: 03390 Pertussis

Paper case report form
Merlin extended data required

Clinical criteria for case classification

Confirmatory:
Both of the following in the absence of a more likely diagnosis:

- Cough illness lasting ≥2 weeks
- And one or more of the following: paroxysms of coughing, inspiratory "whoop", posttussive vomiting, or apnea (with or without cyanosis)

Presumptive:
Both of the following:

- Acute cough illness of any duration
- And one or more of the following: paroxysms of coughing, inspiratory "whoop", posttussive vomiting, or apnea (with or without cyanosis)

Supportive:
Acute cough illness of any duration

Laboratory criteria for case classification

Either of the following:

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

Epidemiological criteria for case classification

Epidemiological link to confirmed pertussis case

Case classification

Confirmed:
Confirmatory, presumptive, or supportive clinical criteria and laboratory criteria

Probable:
Either of the following:

- Confirmatory clinical criteria
- Or presumptive clinical criteria and epidemiological criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

The clinical criteria above are appropriate for endemic or sporadic cases. In outbreak settings, a probable case may be defined as a cough illness lasting ≥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,[1,2] such testing should not be relied on as a criterion for laboratory confirmation. Serologic testing (IgM and IgG) for pertussis is available in some areas but is not standardized and, therefore, should not be relied on as a criterion for laboratory confirmation.

Pesticide-Related Illness and Injury, Acute

Florida HEALTH

Merlin disease code: 09894 Pesticide-related illness and injury, acute

Paper case report form
Merlin extended data required

Clinical criteria for case classification

Any acute adverse health effect resulting from exposure to a pesticide product (defined under the Federal Insecticide Fungicide and Rodenticide Act [FIFRA[1]] with the exception that disinfectants are excluded) including health effects due to an unpleasant odor, injury from explosion of a product, inhalation of smoke from a burning product, and allergic reaction.

Symptoms typically involve one or more of the following: systemic signs or symptoms (including respiratory, gastrointestinal, allergic, and neurological signs/symptoms), dermatologic lesions, or ocular lesions.

Laboratory criteria for case classification

One or more of the following:

- Detection of pesticide, pesticide metabolite(s), or toxic response to pesticide in clinical specimen (e.g., blood, urine), which may include one or more of the following:
    - Detection above laboratory reference range of pesticide or pesticide metabolite(s) in clinical specimen
    - **Or** detection of biochemical response to pesticide in clinical specimen
    - **Or** at least 20% decrease in plasma or red blood cell (RBC) cholinesterase (ChE) levels relative to non-exposed baseline blood specimens
    - **Or** plasma or RBC ChE level >15% below the laboratory reference range in the absence of baseline specimens
- **Or** detection of pesticide in environmental sample (e.g., foliage residue, analysis of suspect liquid)
- **Or** detection of pesticide on clothing or equipment used by the case subject

Epidemiological criteria for case classification

Not applicable

Case classification

Provided below (criteria A, B, and C). Scores are either 1 or 2, and are assigned based on all available evidence. The classification matrix follows the criteria section (Table 1). The matrix provides the case classification categories and the criteria scores needed to place the case into a specific category.

Confirmed and probable cases (see the classification matrix) are reportable. Suspect (i.e., possible and suspicious) cases are only reportable for only occupationally (work-related) exposed or cluster (two or more related cases) associated cases.

Pesticide-Related Illness and Injury, Acute (Continued)

A. Documentation of Pesticide Exposure:

A1. Laboratory, clinical, or environmental evidence corroborates exposure (one or more of the following must be satisfied to receive a score of A1):

- Analytical results from foliage residue, clothing residue, air, soil, water, or biologic samples.
- Observation of residue and/or contamination (including damage to plant material from herbicides) by a trained professional[2].
- Biologic evidence of exposure (e.g., response to administration of an antidote such as 2-PAM, Vitamin K, or repeated doses of atropine).
- Documentation by a licensed health care professional of a characteristic eye injury or dermatological effects at the site of direct exposure to pesticide product.
- Clinical description by a licensed health care professional of two or more post-exposure health effects (at least one of which is a sign) characteristic for the pesticide.

A2. Evidence of exposure based solely upon written or verbal report (one or more of the following must be satisfied to receive a score of A2):

- Report by case.
- Report by witness.
- Written records of application.
- Observation of residue and/or contamination (including damage to plant material from herbicides) by someone other than a trained professional.
- Other evidence suggesting that exposure occurred.

B. Documentation of Adverse Health Effect

B1.Two or more new post-exposure abnormal signs and/or test/laboratory findings reported by a licensed health care professional (this is B1 score).

B2. One or more of the following must be satisfied to receive a score of B2:

- Two or more new post-exposure abnormal signs reported (when new post-exposure signs and test/laboratory findings are insufficient to satisfy a B1 score, they can be used in lieu of symptoms towards satisfying a B2 score).
- Any new illness or exacerbation of pre-existing illness diagnosed by a licensed physician, but information on signs, symptoms, and/or test findings are not available or are insufficient for a B.1 or B.2. score.

C. Evidence Supporting a Causal Relationship Between Pesticide Exposure and Health Effects

C1. Causal relationship between pesticide exposure and health effects exists (one or more of the following must be satisfied to receive a score of C1):

- Health effects (in criteria B) are characteristic for the pesticide and the temporal relationship between exposure and health effects is plausible.
- Health effects (in criteria B) are consistent with an exposure-health effect relationship based upon the known toxicology (i.e., exposure dose, symptoms, and temporal relationship) of the putative agent from commonly available toxicology texts, government publications, information supplied by the manufacturer, or two or more case series or positive epidemiologic studies published in peer-review literature.

C2. Insufficient toxicological information is available to determine causal relationship between exposure and health effects. This includes circumstances where minimal human health effects data are available, or where there are less than two published case series or positive epidemiologic studies linking health effects to exposure to the particular pesticide product/ingredient or class of pesticides (this is C2 score).

Table 1 - Case classification matrix

Classification criteria	Confirmed	Probable		Suspect	
				Possible	Suspicious
A. Exposure	A.1	A.1	A.2	A.2	A.1 or A.2
B. Health Effects	B.1	B.2	B.1	B.2	B.1 or B.2
C. Causal Relationship	C.1	C.1	C.1	C.1	C.2

Suspect (i.e., possible and suspicious) cases which are not part of a cluster (two or more related cases) or occupationally related pesticide exposures (typically limited household exposures) no longer need to be reported.

Criteria to distinguish a new case from previous reports

Not applicable

Comments

The Florida Poison Control Network (800-222-1222) can provide emergency information to physicians and the public. For information regarding Florida pesticide laws and regulations, contact the Florida Department of Agriculture and Consumer Services, Bureau of Compliance Monitoring at 850-488-3314. For information regarding this case definition, contact the Bureau of Epidemiology.

For information concerning regulation and use of pesticides, contact the U.S. EPA's Office of Pesticide Programs at 703-305-5336. For information concerning Florida pesticide laws and regulations, contact the Florida Department of Agriculture and Consumer Services, Bureau of Pesticides at 850-617-7917.

1. Pesticides are defined under FIFRA as any substance or mixture of substances intended to prevent, destroy, repel or mitigate insects, rodents, nematodes, fungi, weeds, microorganisms, or any other form of life declared to be a pest by the Administrator of the U.S. EPA and any substance or mixture of substance intended for use as a plant regulator, defoliant, or desiccant. Pesticides include herbicides, insecticides, rodenticides, fungicides, disinfectants, wood treatment products, growth regulators, insect repellents, etc.
2. Trained professional may be a plant pathologist, agricultural inspector, agricultural extension agent, industrial hygienist, or any other licensed or academically trained specialist with expertise in plant pathology and/or environmental effects of pesticides. A licensed pesticide applicator may also be considered a trained professional.

Plague

Merlin disease code: 02100 Plague

Isolates or specimens for all cases must be sent to the Bureau of Public Health Laboratories

CONTACT BUREAU OF EPIDEMIOLOGY

Paper case report form required

No Merlin extended data

This condition has been identified as a potential bioterrorism agent by the CDC

Background

Plague is caused by *Yersinia pestis*, which is transmitted to humans by fleas or by direct exposure to infected tissues or respiratory droplets. The disease is characterized by fever, chills, headache, malaise, prostration, and leukocytosis.

The disease manifests in one or more of the following principal clinical forms:

- Regional lymphadenitis (bubonic plague)
- Septicemia without an evident bubo (septicemic plague)
- Plague pneumonia, resulting from hematogenous spread in bubonic or septicemic cases (secondary pneumonic plague) or inhalation of infectious droplets (primary pneumonic plague)
- Pharyngitis and cervical lymphadenitis resulting from exposure to larger infectious droplets or ingestion of infected tissues (pharyngeal plague)

Clinical criteria for case classification

Confirmatory:

Acute onset of fever as reported by the patient or health care provider

One or more of the following specific clinical manifestations may be present (not required): regional lymphadenitis (bubonic plague), septicemia (septicemic plague), pneumonia (pneumonic plague), or pharyngitis with cervical lymphadenitis (pharyngeal plague)

Presumptive:

Confirmatory criteria in the absence of a more likely diagnosis

Supportive:

No clinical information available (no medical record or patient interview)

Laboratory criteria for case classification

Confirmatory:

Either of the following:

- Both of the following:
  - Isolation of *Y. pestis* from a clinical specimen
  - **And** secondary assay validating culture identification (e.g., bacteriophage lysis assay, direct fluorescent antibody assay [DFA]) performed by the CDC or Laboratory Response Network
- **Or** fourfold or greater change in serum antibody titer to *Y. pestis* fraction 1 (F1) antigen

Presumptive:
Either of the following:

- Both of the following:
  - Elevated serum antibody titer to *Y. pestis* F1 antigen
  - **And** no history of plague vaccination
- **Or** detection of *Y. pestis* DNA or antigens, including F1 antigen, in a clinical specimen by DFA, immunohistochemical assay (IHC), or polymerase chain reaction (PCR)

Epidemiological criteria for case classification

One or more of the following:

- Epidemiological link to person or animals with confirmatory laboratory evidence within 2 weeks before symptom onset
- **Or** close contact with confirmed pneumonic plague case, including but not limited to presence within 2 meters of person with active cough due to pneumonic plague
- **Or** traveled in 2 weeks before symptom onset to geographically localized area with confirmed plague epizootic activity in fleas or animals as determined by relevant local authorities

Case classification

Confirmed:
Either of the following:

- Confirmatory clinical criteria and confirmatory laboratory criteria
- **Or** Confirmatory clinical criteria, presumptive laboratory criteria, and epidemiological criteria

Probable:
Presumptive clinical criteria and presumptive laboratory criteria

Suspect:
Either of the following:

- Confirmatory clinical criteria and epidemiological criteria
- **Or** confirmatory or presumptive laboratory criteria and no clinical information available

Criteria to distinguish a new case from previous reports

Serial or subsequent plague infections in a person should only be counted if there is a new epidemiologically compatible exposure and new symptom onset.

Poliomyelitis, Nonparalytic

Florida HEALTH

Merlin disease code: 04520 Poliomyelitis, nonparalytic

Specimens for all cases must be sent to the Bureau of Public Health Laboratories

CONTACT BUREAU OF EPIDEMIOLOGY
No paper case report form
No Merlin extended data

Background

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.

Clinical criteria for case classification

Does not have symptoms of paralytic poliomyelitis

Laboratory criteria for case classification

Poliovirus isolate identified in appropriate clinical specimen (e.g., stool, cerebrospinal fluid, oropharyngeal secretions), with confirmatory typing and sequencing performed by the CDC Poliovirus Laboratory, as needed

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:
Clinical and laboratory criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

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 04590”.

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 U.S. in 2002[2]. Therefore, the Minnesota poliovirus infections were the result of importation of a vaccine-derived poliovirus into the U.S. and the first time a VDPV has been shown to circulate in a community in a developed country. Circulating VDPVs commonly revert to a wild poliovirus phenotype and have increased transmissibility and 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]

1. CDC. Poliovirus infections in four unvaccinated children – Minnesota, August-October 2005. MMWR; 54(41); 1053–1055.
2. CDC. Poliomyelitis prevention in the U.S. 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.

Poliomyelitis, Paralytic

Merlin disease code: 04590 Poliomyelitis, paralytic

Specimens for all cases must be sent to the Bureau of Public Health Laboratories

CONTACT BUREAU OF EPIDEMIOLOGY
No paper case report form
No Merlin extended data

Clinical criteria for case classification

Confirmatory:
Both of the following:

- Acute onset of a flaccid paralysis of one or more limbs with decreased or absent tendon reflexes in the affected limbs, without other apparent cause, and without sensory or cognitive loss
- And one of the following:
  - Neurologic deficit 60 days after onset of initial symptoms
  - Or death
  - Or unknown follow-up status

Presumptive:
Acute onset of a flaccid paralysis of one or more limbs with decreased or absent tendon reflexes in the affected limbs, without other apparent cause, and without sensory or cognitive loss

Laboratory criteria for case classification

Not applicable

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:
Confirmatory clinical criteria

Probable:
Presumptive clinical criteria

Criteria to distinguish a new case from previous reports

Not applicable

Psittacosis (Ornithosis)

Florida HEALTH

Merlin disease code: 07390 Psittacosis (ornithosis)

Paper case report form required

Whole blood (purple top tube) and unstained whole blood smear from confirmed cases must be sent to the Bureau of Public Health Laboratories

No Merlin extended data

This condition has been identified as a potential bioterrorism agent by the CDC

Clinical criteria for case classification

One or more of the following: fever, chills, headache, photophobia, cough, myalgia

Laboratory criteria for case classification

Confirmatory:

Either of the following:

- Isolation of *Chlamydia psittaci* from respiratory secretions
- **Or** fourfold or greater increase in antibody against *C. psittaci* by complement fixation (CF) or microimmunofluorescence (MIF) to a reciprocal titer of ≥32 between paired acute and convalescent phase serum specimens obtained at least 2-4 weeks apart

Supportive:

Either of the following:

- Presence of IgM antibody against *C. psittaci* by MIF greater or equal 1:32 in at least one serum specimen obtained after symptom onset
- **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)

Epidemiological criteria for case classification

Epidemiologic risk factors include exposure to a *C. psittaci* confirmed infected bird's feces or secretions, exposure to same dried bird feces or secretions as a confirmed case, and bird owners, pet shop employees, veterinarians, poultry plant workers and others exposed to birds and their secretions. Cultures of *C. psittaci* pose an aerosol exposure risk to laboratory workers. Follow up should be conducted with the laboratory to identify any potential lab exposures.

Presumptive:

Epidemiological link to confirmed psittacosis case

Supportive:

History of close contact with *C. psittaci* positive bird or its feces or secretions in 2 weeks before symptom onset

Case classification

Confirmed:

Clinical criteria and confirmatory laboratory criteria

Probable:

Either of the following:

- Clinical criteria and supportive laboratory criteria
- **Or** clinical criteria and presumptive epidemiological criteria

Suspect:
Clinical criteria in the absence of a more likely diagnosis and supportive epidemiological criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

The serologic findings by CF also may occur as a result of infection with *Chlamydia pneumoniae* or *Chlamydia trachomatis*. Results from MIF and CF should be interpreted with caution due to possible cross reactivity with *C. pneumoniae* and *C. trachomatis*. 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 (PCR) has been developed and validated in avian specimens but has not yet been validated for use in humans.

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.

Q Fever, Acute (*Coxiella burnetii*)

Florida HEALTH

Merlin disease code: 08301 Q fever, acute (Coxiella burnetii)

Paper case report form required

Acute and convalescent sera for all cases must be sent to the Bureau of Public Health Laboratories

No Merlin extended data

This condition has been identified as a potential bioterrorism agent by the CDC

Background

Acute Q fever is an illness characterized by 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.

Clinical criteria for case classification

Both of the following:

- Acute fever
- And one or more of the following: rigors, severe retrobulbar headache, acute hepatitis, pneumonia, elevated liver enzyme levels

Laboratory criteria for case classification

Confirmatory:

One or more of the following:

- Fourfold change in IgG-specific antibody titer to *Coxiella. burnetii* phase II antigen by indirect immunofluorescence assay (IFA) between paired serum specimens, (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)
- Or detection of *C. burnetii* in a clinical specimen by immunohistochemistry (IHC)
- Or isolation of *C. burnetii* from a clinical specimen by culture

Presumptive:

Either of the following:

- Single supportive IFA IgG titer of ≥1:128 to phase II antigen (phase I titers may be elevated as well)
- Or serologic evidence of elevated phase II IgG or IgM antibody reactive with *C. burnetii* antigen by enzyme immunoassay (EIA), dot-EIA, 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

Q Fever, Acute (*Coxiella burnetii*) (Continued)

Epidemiological criteria for case classification

Epidemiological link to Q fever case with laboratory criteria

Case classification

Confirmed:
Either of the following:

- Clinical criteria and confirmatory laboratory criteria
- **Or** confirmatory laboratory criteria and epidemiological criteria

Probable:
Clinical criteria and presumptive laboratory criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Serologic profiles of pregnant women infected with acute Q fever during gestation may progress frequently and rapidly to those characteristic of chronic infection.

Exposure is usually via aerosol, is broadly interpreted, and may be unknown, 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, Chronic (*Coxiella burnetii*)

Florida HEALTH

Merlin disease code: 08302 Q fever, chronic (Coxiella burnetii)

Paper case report form required

Acute and convalescent sera for all cases must be sent to the Bureau of Public Health Laboratories

No Merlin extended data

This condition has been identified as a potential bioterrorism agent by the CDC

Background

Chronic Q fever is an infection that persists for >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 persons are particularly susceptible. Rare cases of chronic hepatitis without endocarditis, osteomyelitis, osteoarthritis, and pneumonitis have been described.

Clinical criteria for case classification

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 case classification

Confirmatory:

One or more of the following:

- Serological evidence of IgG antibody to *Coxiella burnetii* phase I antigen ≥ 1:800 by indirect immunofluorescence assay (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 polymerase chain reaction (PCR)
- **Or** detection of *C. burnetii* antigen in a clinical specimen by immunohistochemistry (IHC)
- **Or** isolation of *C. burnetii* from a clinical specimen by culture

Presumptive:

Antibody titer to *C. burnetii* phase I IgG antigen ≥1:128 and <1:800 by IFA

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:

Clinical criteria and confirmatory laboratory criteria

Probable:

Clinical criteria and presumptive laboratory criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Specimens from suspected chronic patients should be evaluated for IgG titers to both phase I and phase II antigens. Current commercially available EIA 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.

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.

Rabies, Animal

Merlin disease code: 07102 rabies, animal

Paper case report form required
No Merlin extended data

Clinical criteria for case classification

Not applicable

Laboratory criteria for case classification

Either of the following:

- Isolation of rabies virus (in cell culture or in a laboratory animal)
- **Or** detection of rabies antibody by direct fluorescent antibody test

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:
Laboratory criteria in an animal

Criteria to distinguish a new case from previous reports

Not applicable

Rabies, Human

Merlin disease code: 07100 Rabies, human

CONTACT THE BUREAU OF EPIDEMIOLOGY
No paper case report form
No Merlin extended data

Clinical criteria for case classification

Rabies is an acute encephalomyelitis that almost always progresses to coma or death within 10 days after the first symptom.

Laboratory criteria for case classification

One or more of the following:

- Detection by direct fluorescent antibody of viral antigens in a clinical specimen (preferably the brain or the nerves surrounding hair follicles in nape of the neck)
- **Or** isolation (in cell culture or in a laboratory animal) of rabies virus from saliva, cerebrospinal fluid (CSF), or central nervous system tissue
- **Or** identification of a rabies-neutralizing antibody titer ≥5 (complete neutralization) in the serum or CSF of an unvaccinated person

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:
Clinical criteria and laboratory criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Laboratory confirmation by all of the above methods is strongly recommended. CDC requests the following specimens: CSF, serum, or saliva (not sputum), biopsy of skin from the back of the neck just above hairline. Neck biopsy and saliva specimens should be sent packed in dry ice.

Rabies, Possible Exposure

Merlin disease code: 07101 Rabies, possible exposure

Paper case report form
Merlin extended data required

Background

A rabies exposure is considered any bite, scratch, or other contact in which saliva or nervous tissue of a suspect or known rabid animal enters an open or fresh wound or comes in contact with mucous membranes by entering the eye, mouth, or nose of another animal or person.

Clinical criteria for case classification

Not applicable

Laboratory criteria for case classification

Not applicable

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:
Bite or other significant exposure of a human by a confirmed or suspected rabid animal, including non-human primates

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Only bites or other exposures where rabies post-exposure prophylaxis (PEP) is recommended should be reported as rabies, possible exposure (Merlin disease code: 07101). Do not report animal bites where PEP is not recommended. However, please report the following exceptions: if PEP is not recommended but the patient still requests to receive PEP, and if you are unable to determine whether PEP was recommended for a particular case. For these exceptions, please use the Case Notes in Merlin to explain the particular situation.

All *monkey* bites, including those where PEP is not recommended, should be reported as herpes B virus, possible exposure (Merlin disease code: 07103).

The Rabies Prevention and Control in Florida Guidebook is updated annually and should be considered the most up-to-date resource for rabies related questions. To locate the guidebooks, please visit the following website: www.floridahealth.gov/diseases-and-conditions/rabies/index.html.

Page 34 includes the definition and interpretation of what constitutes a rabies exposure.
Page 35 includes information regarding risk assessment of potential exposures.
Page 37 provides a patient management chart with a bulleted summary.

Additional information can be found on the website: www.floridahealth.gov/diseases-and-conditions/rabies/index.html.

Ricin Toxin Poisoning

Florida HEALTH

Merlin disease code: 98830 Ricin toxin poisoning

No paper case report form

Specimens for all cases must be sent to the Bureau of Public Health Laboratories

No Merlin extended data

This condition has been identified as a potential bioterrorism agent by the CDC

Clinical criteria for case classification

Clinical criteria depend on the route of exposure:

- **Inhalation**: Inhalation of ricin typically leads to cough and respiratory distress followed by pulmonary edema, respiratory failure, and multi-system organ dysfunction. Weakness and influenza-like symptoms of fever, myalgia, and arthralgia might also be reported.
- **Ingestion**: Ingestion of ricin would cause internal bleeding of the stomach and intestines that would lead to vomiting and bloody diarrhea. This may be followed by hypovolemic shock and multisystem organ dysfunction. Weakness and influenza-like symptoms, fever, myalgia, and arthralgia, might also be reported.
- **Injection** (data are limited): Low doses of intravenous ricin may result in influenza-like symptoms of fatigue and myalgia. Pain at the injection site. Depending on dose, may progress to multi-organ failure.
- **Skin and eye exposure**: Ricin is unlikely to be absorbed through skin. Contact with ricin powders or products may cause redness and pain of the skin and eyes.

Death from ricin poisoning could take place depending on the route of exposure (inhalation, ingestion, or injection) and the dose received.

Laboratory criteria for case classification

Environmental:
Detection of ricin in environmental samples

Biologic:
Detection of ricinine in urine specimens

Epidemiological criteria for case classification

Either of the following:

- High index of suspicion (reliable intelligence or patient history) for ricin exposure
- Epidemiological link to confirmed ricin poisoning case

Case classification

Confirmed:
Clinical criteria and laboratory criteria

Probable:
Clinical criteria and epidemiological criteria

A case can be confirmed in the absence of laboratory testing if either a predominant amount of clinical and nonspecific laboratory evidence of a particular chemical is present or if there is 100% certainty of the etiology of the agent.

Rocky Mountain Spotted Fever and Spotted Fever Rickettsiosis

Florida HEALTH

Merlin disease code: 08309 Rocky Mountain spotted fever and spotted fever rickettsiosis

Paper case report form

Acute and convalescent sera for all cases must be sent to the Bureau of Public Health Laboratories

Merlin extended data required

Background

Rocky Mountain spotted fever (RMSF) has been nationally notifiable since the 1920s. In 2010, RMSF became nationally notifiable under the category of spotted fever rickettsiosis (SFR), which captures cases of RMSF (caused by *Rickettsia rickettsii*), *R. parkeri* rickettsiosis, Pacific Coast tick fever, and others. In the early stages of disease, it can be difficult to clinically distinguish between RMSF and other SFRs. Commercially available serologic tests are unable to differentiate between these spotted fever group *Rickettsiae* (SFGR) species. There is increasing suspicion that other SFGR species may be responsible for many of the SFR cases, including diseases associated with *R. parkeri, R. amblyommatis*, *R. montanensis*, *R. massiliae*, *R. rhipecephali*, and other *Rickettsia* species.

Disease onset occurs 3-14 days following a tick bite. Illness is characterized by acute onset of fever, and may be accompanied by headache, malaise, myalgia, nausea, vomiting, or neurologic signs. A macular or maculopapular rash appears 4-7 days following onset in many (~80%) patients, often present on the palms and soles. An eschar skin lesion develops at the site of the tick bite for many SFR cases but not RMSF.

Imported SFR are identified occasionally in Florida in international travelers, with African tick bite fever being most common. More information about imported cases of SFR is available at www.cdc.gov/otherspottedfever/imported/index.html. Rodent mites are associated with the SFR rickettsialpox which has a broad international distribution and is also present in the U.S.

Clinical criteria for case classification

Both of the following lasting less than 30 days:

- Any reported fever or chills or evidence of fever-reducing medication
- **And** one or more of the following: rash, eschar, headache, muscle aches, anemia, thrombocytopenia, any hepatic transaminase elevation

Notes:

- Symptoms lasted >30 days, clinical criteria not met
- More likely diagnosis, clinical criteria not met for probable cases
- No clinical information available (no medical record or patient interview)

Laboratory criteria for case classification

Confirmatory:

One or more of the following:

- Fourfold change in SFGR IgG-specific antibody titer by indirect immunofluorescence assay (IFA) between paired serum specimens (one taken in the first week of illness and a second 2-4 weeks later)
- **Or** detection of SFGR nucleic acid in a clinical specimen via amplification of a specific target by polymerase chain reaction (PCR)
- **Or** detection of SFGR antigen in a biopsy or autopsy specimen by immunohistochemistry (IHC)

- **Or** both of the following:
  - Isolation of SFGR species from a clinical specimen in cell culture
  - **And** molecular confirmation (e.g., PCR or sequence)

Presumptive:
Elevated SFGR IgG antibody titer ≥1:128 by IFA in a sample taken within 60 days of symptom onset

Supportive:
Elevated SFGR IgG antibody titer <1:128 by IFA in a sample taken within 60 days of symptom onset

Epidemiological criteria for case classification

Exposure to potential tick habitats in the 14 days before symptom onset (history of tick bite not required)

Case classification

Confirmed:
Clinical criteria, confirmatory laboratory criteria, and epidemiological criteria

Probable:
Clinical criteria, presumptive laboratory criteria, and epidemiological criteria

Suspect:
Either of the following:

- Confirmatory or presumptive laboratory criteria and no clinical information available
- **Or** clinical criteria, supportive laboratory criteria, and epidemiological criteria

Criteria to distinguish a new case from previous reports

Create a new case when person previously reported as probable or confirmed case has episode of new clinically compatible illness with confirmatory laboratory evidence.

Comments

SFRs do not result in chronic or persistent infections. Symptoms do not last >30 days, even without treatment.

An IgM antibody response has been shown inaccurate in identifying acute illness and therefore insufficient to diagnose SFR. In addition, data suggest that the prevalence of IgG antibodies reactive to SFGR in asymptomatic persons may be more common than previously assumed. The presence of these IgG antibodies may reflect past exposures rather than acute cases thereby confounding the interpretation of a single IgG antibody test result.

Sensitivity for whole blood SFGR PCR is not well defined. False negative results may also occur if the specimen is collected after doxycycline treatment is given. Therefore, dual testing with PCR and paired serology should be conducted.

Anaplasmosis, ehrlichiosis, and SFR can cause non-specific febrile illnesses. Therefore, all three diseases should be tested for if an infection is suspected in cases with exposure in Florida. *Anaplasma*, *Ehrlichia*, and *Rickettsia* serology can cross-react, creating false positives. Confirmatory testing and epidemiologic

investigation can help determine the causative agent.

Occupation and travel history should be recorded if relevant to exposure.

Rubella

Merlin disease code: 05690 Rubella

Specimens for all cases must be sent to the Bureau of Public Health Laboratories

Paper case report form

Merlin extended data required

Clinical criteria for case classification

Confirmatory:

All of the following:

- Acute onset of generalized maculopapular rash
- **And** temperature >99.0 °F (>37.2 °C)
- **And** arthralgia, arthritis, lymphadenopathy, or conjunctivitis

Supportive:

Any generalized rash illness of acute onset

Rule out (clinical criteria not met):

One or more of the following:

- More likely diagnosis
- **Or** negative culture, PCR, or IgM result
- **Or** symptoms are due to reactivation of previous rubella infection/vaccination

Laboratory criteria for case classification

Confirmatory:

One or more of the following:

- Isolation of rubella virus
- **Or** detection of rubella virus-specific nucleic acid by polymerase chain reaction (PCR) or genomic sequencing
- **Or** IgG seroconversion or a significant rise between acute- and convalescent-phase titers in serum rubella IgG antibody level by any standard serologic assay

Presumptive:

Positive rubella IgM antibody result

Rule out (laboratory criteria not met):

One or more of the following:

- Positive IgM or IgG result can be explained by MMR vaccination during previous 6-45 days
- **Or** IgM positive ruled out by more specific testing in public health laboratory
- **Or** isolation, PCR, genomic sequencing, or IgM result is due to reactivation of rubella virus infection/vaccination

Epidemiological criteria for case classification

Epidemiological link to rubella case with laboratory criteria

Case classification

Confirmed:
One or more of the following:

- Confirmatory laboratory criteria
- **Or** presumptive laboratory criteria and epidemiological criteria
- **Or** confirmatory or supportive clinical criteria and presumptive laboratory criteria
- **Or** confirmatory clinical criteria and epidemiological criteria

Probable:
Confirmatory clinical criteria

Suspect:
Supportive clinical criteria

Unknown:
Presumptive laboratory criteria and unknown clinical information

Not a case:
Presumptive laboratory criteria and no confirmatory or supportive clinical criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Persons who are rubella IgM positive without compatible symptoms or risk factors for rubella infection should **not** be reported as a rubella case. Confirmatory testing at BPHL for these situations is not recommended. If such a case is entered in Merlin, it should be submitted with a dx status of "not a case".

Epidemiologic classification of internationally imported and U.S.-acquired cases

- **Internationally imported case:** An internationally imported case is defined as a case in which rubella results from exposure to rubella virus outside the U.S. as evidenced by at least some of the exposure period (12–23 days before rash onset) occurring outside the U.S. and the onset of rash within 23 days of entering the U.S. 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 U.S. during the 23 days before rash onset or was known to have been exposed to rubella within the U.S.

  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 epidemiological 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 U.S. 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 U.S.
- **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.

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.

Rubella, Congenital Syndrome

Florida HEALTH

Merlin disease code: 77100 Rubella, congenital syndrome

Specimens for all cases must be sent to the Bureau of Public Health Laboratories

Paper case report form required

No Merlin extended data

Background

An illness usually manifesting in infancy resulting from rubella infection in utero and characterized by signs or symptoms from the following categories:

- Cataracts/congenital glaucoma, congenital heart disease (most commonly patent ductus arteriosus, or peripheral pulmonary artery stenosis), hearing impairment, pigmentary retinopathy
- Purpura, splenomegaly, jaundice, microcephaly, developmental delay, meningoencephalitis, radiolucent bone disease

Clinical criteria for case classification

Confirmatory:

One or more of the following: cataracts/congenital glaucoma, congenital heart disease, hearing impairment, pigmentary retinopathy, purpura, splenomegaly, jaundice, microcephaly, developmental delay, meningoencephalitis, radiolucent bone disease

Presumptive:

Either of the following in the absence of a more likely diagnosis:

- Two or more of the following: cataracts/congenital glaucoma, congenital heart disease, hearing impairment, pigmentary retinopathy
- Or both of the following:
    - One or more of the following: cataracts/congenital glaucoma, congenital heart disease, hearing impairment, pigmentary retinopathy
    - And one or more of the following: purpura, splenomegaly, jaundice, microcephaly, developmental delay, meningoencephalitis, radiolucent bone disease

Laboratory criteria for case classification

One or more of the following:

- Isolation of rubella virus
- Or detection of rubella-specific IgM antibody
- Or detection of rubella virus-specific nucleic acid by polymerase chain reaction (PCR)
- 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)

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:
Confirmatory clinical criteria and laboratory criteria

Probable:
Presumptive clinical criteria

Suspect:
Confirmatory clinical criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Epidemiologic classification of internationally imported and U.S.-acquired cases
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 U.S. 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 U.S.-acquired case is one in which the mother acquired rubella from an exposure in the U.S.

  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.
  - **Import-virus case:** A case for which an epidemiological 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 U.S. 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 U.S.
  - **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.

Rubella, Congenital Syndrome (Continued)

Internationally imported, import-linked, and imported-virus cases are considered collectively to be import-associated cases.

A person with laboratory evidence of infection, but without any clinical signs or symptoms is **not** reportable as congenital rubella (Merlin disease code: 77100), but may be reportable as rubella (Merlin disease code: 05690).

In probable cases, cataracts and congenital glaucoma are interpreted as a single complication.

Salmonella Paratyphi Infection

Florida HEALTH

Merlin disease code: 00210 *Salmonella* Paratyphi infection

Isolates or specimens for all confirmed and probable cases must be sent to the Bureau of Public Health Laboratories in Jacksonville; serum specimens for suspect cases should not be forwarded

Paper case report form

Merlin extended data required

Background

Infections caused by *Salmonella* serotypes Paratyphi A, B (tartrate negative), or C are 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 *Salmonella* Paratyphi A, B (tartrate negative), or C may be prolonged.

Clinical criteria for case classification

One or more of the following: fever, diarrhea, abdominal cramps, constipation, anorexia, relative bradycardia

Laboratory criteria for case classification

Confirmatory:
Isolation of *Salmonella* Paratyphi A, B (tartrate negative), or C from a clinical specimen

Presumptive:
Detection of *Salmonella* Paratyphi A, B (tartrate negative), or C in a clinical specimen using a culture-independent diagnostic test

Supportive:
Detection of antibodies to *Salmonella* Paratyphi A, B (tartrate negative), or C in a clinical specimen using a serologic test in the absence of a negative *Salmonella* culture from a blood or stool specimen

Epidemiological criteria for case classification

Either of the following:

- Epidemiological link to confirmed *Salmonella* Paratyphi infection case
- **Or** epidemiological link to probable *Salmonella* Paratyphi infection case with laboratory criteria

Case classification

Confirmed:
Confirmatory laboratory criteria

Probable:
Either of the following:

- Clinical criteria and presumptive laboratory criteria
- **Or** clinical criteria and epidemiological criteria

Suspect:
Supportive laboratory criteria

Salmonella Paratyphi Infection (Continued)

Criteria to distinguish a new case from previous reports

Create a new case when either:

- Positive laboratory result is received >365 days after most recent positive laboratory result associated with previously reported case
- Or two or more different serotypes are identified in specimens (report each serotype as separate case).

Comments

Infections with *Salmonella* serotypes Paratyphi A, B (tartrate negative), or C should only be reported as *Salmonella* Paratyphi infection (Merlin disease code: 00210) and not as salmonellosis (Merlin disease code: 00300) or *Salmonella* Typhi infection (Merlin disease code: 00200).

Infections with *Salmonella* Paratyphi B (tartrate positive) should only be reported as salmonellosis (Merlin disease code: 00300) and not as *Salmonella* Paratyphi infection (Merlin disease code: 00210 or *Salmonella* Typhi infection (Merlin disease code: 00200).

Salmonella Typhi Infection

Florida HEALTH

Merlin disease code: 00200 *Salmonella* Typhi infection

Paper case report form

Isolates or specimens for all confirmed and probable cases must be sent to the Bureau of Public Health Laboratories in Jacksonville; serum specimens for suspect cases should not be forwarded

Merlin extended data required

This condition has been identified as a potential bioterrorism agent by the CDC

Background

Infections caused by *Salmonella* serotype Typhi are 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 *Salmonella* Typhi may be prolonged.

Clinical criteria for case classification

One or more of the following: fever, diarrhea, abdominal cramps, constipation, anorexia, relative bradycardia

Laboratory criteria for case classification

Confirmatory:
Isolation of *Salmonella* Typhi from a clinical specimen

Presumptive:
Detection of *Salmonella* Typhi in a clinical specimen using a culture-independent diagnostic test

Supportive:
Detection of antibodies to *Salmonella* Typhi in a clinical specimen using a serologic test in the absence of a negative *Salmonella* culture from a blood or stool specimen

Epidemiological criteria for case classification

Either of the following:

- Epidemiological link to confirmed *Salmonella* Typhi infection case
- **Or** epidemiological link to probable *Salmonella* Typhi infection case with laboratory criteria

Case classification

Confirmed:
Confirmatory laboratory criteria

Probable:
Either of the following:

- Clinical criteria and presumptive laboratory criteria
- **Or** clinical criteria and epidemiological criteria

Suspect:
Supportive laboratory criteria

Criteria to distinguish a new case from previous reports

Create a new case when a positive laboratory result is received >365 days after the most recent positive laboratory result associated with a previously reported case.

Comments

Infection with *Salmonella* Typhi should only be reported as *Salmonella* Typhi infection (Merlin disease code: 00200) and not as salmonellosis (Merlin disease code: 00300) or *Salmonella* Paratyphi infection (Merlin disease code: 00210).

Salmonellosis

Merlin disease code: 00300 Salmonellosis

Paper case report form

Isolates or specimens for all cases must be sent to the Bureau of Public Health Laboratories

Merlin extended data optional

Background

Salmonellosis is an illness of variable severity commonly manifested by diarrhea, abdominal pain, nausea, and sometimes vomiting. Asymptomatic infections may occur, and the organism may cause extra-intestinal infections.

Clinical criteria for case classification

One or more of the following: abdominal pain, diarrhea, fever, vomiting

Laboratory criteria for case classification

Confirmatory:
Isolation of *Salmonella* from a clinical specimen

Presumptive:
Detection of *Salmonella* in a clinical specimen using a culture-independent diagnostic test

Supportive:
One or more of the following:

- Detection of *Salmonella* in a clinical specimen using non-isolate based sequencing
- **Or** detection of antibodies to *Salmonella* in a clinical specimen using a serologic test
- **Or** laboratory test with a methodology not previously mentioned

Epidemiological criteria for case classification

Either of the following:

- Epidemiological link to confirmed salmonellosis case
- **Or** epidemiological link to probable salmonellosis case with laboratory criteria

Case classification

Confirmed:
Confirmatory laboratory criteria

Probable:
Either of the following:

- Presumptive laboratory criteria
- **Or** clinical criteria and epidemiological criteria

Suspect:
Supportive laboratory criteria

Criteria to distinguish a new case from previous reports

Create a new case when either:

- Positive laboratory result is received >365 days after most recent positive laboratory result associated with a previously reported case
- Or two or more different serogroups/serotypes are identified (report each serogroup/serotype as separate case).

Comments

Asymptomatic infections and infections at sites other than the gastrointestinal tract with any laboratory criteria are considered cases and should be reported.

Infections with *Salmonella* serotype Paratyphi B (tartrate positive) should be reported as salmonellosis (Merlin disease code: 00300) and not as *Salmonella* Paratyphi infection (Merlin disease code: 00210) or *Salmonella* Typhi infection (Merlin disease code: 00200).

Infections with *Salmonella* serotypes Paratyphi A, B (tartrate negative), or C should be reported as *Salmonella* Paratyphi infection (Merlin disease code: 00210), not as salmonellosis (Merlin disease code: 00300).

Infections with *Salmonella* serotype Typhi should be reported as *Salmonella* Typhi infection (Merlin disease code: 00200), not as salmonellosis (Merlin disease code: 00300).

Serogroup and serotype information is critical to understanding the epidemiology of salmonellosis in Florida and all details should be entered accurately and appropriately into Merlin. Additional characterization of *Salmonella* isolates will be performed by the Bureau of Public Health Laboratories (BPHL).

Saxitoxin Poisoning (Paralytic Shellfish Poisoning)

Merlin disease code: 98840 Saxitoxin poisoning (Paralytic Shellfish Poisoning)

No paper case report form
No Merlin extended data

Clinical criteria for case classification

A person with circumoral paresthesia; numbness or tingling of the face, arms, and legs; ataxia; respiratory distress; headache; dizziness; weakness; nausea; or vomiting. Onset is 15 minutes to 10 hours following the consumption of puffer fish. Illness can also be linked to consumption of molluscan shellfish from non-Florida waters such as from northern Pacific and other cold water sources (not known to be present in molluscan shellfish in Florida at this time). In severe cases, muscle paralysis and respiratory failure occur, with death occurring in 2 to 25 hours. Cases associated with Florida puffer fish consumption experience milder symptoms and fewer hospitalizations.

Laboratory criteria for case classification

Toxin detection in urine or food sample

Epidemiological criteria for case classification

Either of the following:

- Epidemiological link to confirmed saxitoxin poisoning case
- **Or** history of exposure to puffer fish or non-Florida molluscan shellfish

Case classification

Confirmed:
Clinical criteria and laboratory criteria

Probable:
Clinical criteria and epidemiological criteria

Suspect:
Clinical criteria and history of exposure to puffer fish or non-Florida molluscan shellfish is unknown

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Contact your Regional Environmental Epidemiologist for information.

Scombroid Poisoning

Merlin disease code: 91000 Scombroid poisoning

No paper case report form
No Merlin extended data

Background

Symptoms of scombroid poisoning include tingling or burning in or around the mouth or throat, rash, hives, itching of the skin, drop in blood pressure, headache, dizziness, nausea, vomiting, diarrhea, asthmatic-like constriction of air passages, heart palpitations, and respiratory distress. Symptoms can occur within a few minutes to a few hours of consumption and last from 12 hours to a few days and occur after consumption of fish known to produce histamine.

Clinical criteria for case classification

One or more of the following symptoms: tingling or burning in or around mouth or throat, rash, hives, itching, drop in blood pressure, headache, dizziness, nausea, vomiting, diarrhea, asthmatic-like constriction of air passages, heart palpitations, respiratory distress

Laboratory criteria for case classification

Not applicable

Epidemiological criteria for case classification

History of consuming fish known to produce histamine in the 2 hours before symptom onset

Case classification

Confirmed:
Clinical criteria and epidemiological criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Even single sporadic cases should be reported as a single-case outbreak to the regional environmental epidemiologist. Testing for the toxin in implicated fish is available from the Florida Department of Agriculture and Consumer Services. Contact your Regional Environmental Epidemiologist for information.

Severe Acute Respiratory Syndrome (SARS)

Florida HEALTH

Merlin disease code: 07982 Severe acute respiratory syndrome (SARS)

Specimens for all cases must be sent to the Bureau of Public Health Laboratories

Paper case report form required

No Merlin extended data

Clinical criteria for case classification

Early illness:

Presence of two or more of the following: fever (might be subjective), chills, rigors, myalgia, headache, diarrhea, sore throat, rhinorrhea

Mild-to-moderate respiratory illness:

Both of the following:

- Temperature of >100.4° F (>38° C)
- **And** one or more clinical findings of lower respiratory illness (e.g., cough, shortness of breath, difficulty breathing)

Severe respiratory illness:

Both of the following:

- 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 (ARDS)
  - **Or** autopsy findings consistent with pneumonia or acute respiratory distress syndrome without an identifiable cause

Laboratory criteria for case classification

One or more of the following are the 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 [EIA])
- **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 (RT-PCR) test validated by CDC and with subsequent confirmation in a reference laboratory (e.g., CDC)

Epidemiological criteria for case classification

Likely exposure to SARS-CoV:

Either of the following exposures in the 10 days before symptom onset:

- Close contact with confirmed case of SARS-CoV disease
- **Or** close contact with a person with mild-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 symptom onset

Possible exposure to SARS-associated coronavirus (SARS-CoV):

Either of the following exposures in the 10 days before symptom onset:

- Travel to a foreign or domestic location with documented or suspected recent transmission of SARS-CoV
- **Or** close contact with a person with mild-to-moderate or severe respiratory illness and history of travel in the 10 days before symptom onset to foreign or domestic location with documented or suspected recent transmission of SARS-CoV

Severe Acute Respiratory Syndrome (SARS) (Continued)

Exclusion criteria

Exclude as a SARS report under investigation (SARS RUI), including as a CDC-defined probable SARS-CoV case, if one or more of the following applies:

- Alternative diagnosis fully explains illness
- Antibody to SARS-CoV is undetectable in a serum specimen obtained >28 days after onset of illness
- Case reported based on contact with a person who was excluded subsequently as a case of SARS-CoV disease

Case classification

SARS Report Under Investigation (RUI)

- Reports from areas where SARS is not known to be active:
  - SARS RUI-1: Severe illness compatible with SARS in group likely to be first affected by SARS-CoV if it is introduced from a person without clear epidemiological links to known cases of SARS-CoV disease or places with known ongoing transmission
- Reports from areas where SARS activity is occurring:
  - SARS RUI-2: Clinical criteria for mild-to-moderate illness and epidemiological criteria for possible exposure (spring 2003 CDC definition for suspect cases)
  - SARS RUI-3: Clinical criteria for severe illness and epidemiological criteria for possible exposure (spring 2003 CDC definition for probable cases)
  - SARS RUI-4: Clinical criteria for early or mild-moderate illness and epidemiological criteria for likely exposure to SARS-CoV

SARS-CoV disease classification

Confirmed:
Early, mild-to-moderate, or severe clinical criteria and laboratory criteria

Probable:
Clinical criteria for severe respiratory illness and epidemiological criteria for likely exposure to SARS-CoV

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Information regarding the current criteria for laboratory diagnosis of SARS-CoV is available at www.cdc.gov/sars/index.html.

Merlin disease code: 72000 Severe vaping-associated pulmonary illness (VAPI)

Paper case report form
Merlin extended data required

Clinical criteria for case classification

Confirmatory:

1. Hospitalized with both of the following:
   - Pulmonary infiltrates, such as opacities on plain film chest radiograph or ground-glass opacities on chest CT
   - **And** no evidence in medical record of alternative plausible diagnoses (e.g., cardiac, rheumatologic, or neoplastic process)

2. Died outside a hospital or prior to hospital admission (e.g., at home, in route to a hospital, in an emergency department) and all of the following:
   - No chest imaging or clinical evaluation
   - **And** pathologic evidence of acute lung injury (e.g., diffuse alveolar damage, acute fibrinous pneumonitis or bronchiolitis, or organizing pneumonia often with vacuolated or foamy macrophages or pneumocytes)
   - **And** no evidence in medical record or at autopsy of alternative plausible diagnoses

Supportive:

Both of the following:

- Hospitalized
- **And** pulmonary infiltrates, such as opacities on plain film chest radiograph or ground-glass opacities on chest CT

Laboratory criteria for case classification

Confirmatory:

1. Hospitalized and all of the following on initial work-up:
   - Negative respiratory viral panel,
   - **And** absence of a positive influenza PCR
   - **And** absence of a positive influenza rapid test
   - **And** absence of positive result for all other clinically indicated respiratory ID testing (e.g., urine antigen for *Streptococcus pneumoniae* and *Legionella*, sputum culture if productive cough, bronchoalveolar lavage culture, blood culture, testing for HIV-related opportunistic respiratory infections if appropriate)

2. Died outside a hospital or prior to hospital admission in the absence of pulmonary infection (e.g., influenza, *S. pneumoniae*, *Legionella*, and other infectious diseases, including HIV-related infections as appropriate, as evidenced by microscopy, immunohistology, microbiology, or molecular testing)

Severe Vaping-Associated Pulmonary Illness (VAPI) (Continued)

Presumptive:

1. Hospitalized with both of the following:
   - Clinical team caring for the patient believes pulmonary infection is not the sole cause of the underlying respiratory disease process
   - **And** one or more of the following:
     - Positive respiratory viral panel
     - **Or** respiratory viral panel was not performed
     - **Or** positive influenza PCR
     - **Or** positive influenza rapid test
     - **Or** positive result for other clinically indicated respiratory ID testing

2. Died outside a hospital or prior to hospital admission and both of the following:
   - Medical examiner or other forensic pathologist believes pulmonary infection is not the sole cause of the underlying respiratory disease process
   - **And** one or more of the following:
     - Positive respiratory viral panel
     - **Or** positive influenza PCR
     - **Or** positive influenza rapid test
     - **Or** positive result for other clinically indicated respiratory ID testing

Epidemiological criteria for case classification

Used e-cigarette ("vaping") or dabbing to inhale substances in 90 days before onset

Case classification

Confirmed:

Either of the following:

- Confirmatory clinical criteria (1), confirmatory laboratory criteria (1), and epidemiological criteria
- **Or** confirmatory clinical criteria (2), confirmatory laboratory criteria (2), and epidemiological criteria

Probable:

Either of the following:

- Confirmatory clinical criteria (1), presumptive laboratory criteria (1), and epidemiological criteria
- **Or** confirmatory clinical criteria (2), presumptive laboratory criteria (2), and epidemiological criteria

Suspect:

Supportive clinical criteria and epidemiological criteria will **temporarily** be classified as suspect while being investigated (all cases will eventually be classified as confirmed, probable, or not a case)

Not a case:

One or more of the following:

- Did not use e-cigarette ("vaping") or dabbing to inhale substances in 90 days before onset
- Or not hospitalized or death
- Or hospitalized but no pulmonary infiltrates
- Or died outside a hospital or prior to hospital admission but did not have pathologic evidence of acute lung injury
- Or evidence in medical record of alternative plausible diagnoses (e.g., cardiac, rheumatologic, or neoplastic process)

Criteria to distinguish a new case from previous reports

Not applicable

Shiga Toxin-Producing *Escherichia coli* (STEC) Infection

Florida HEALTH

Merlin disease code: 00800 *Escherichia coli*, Shiga toxin-producing (STEC) infection

Paper case report form

Isolates for all cases must be sent to the Bureau of Public Health Laboratories in Jacksonville; all Shiga toxin, Shiga toxin gene, *E. coli* O157 gene, enterohemorrhagic *E. coli* (EHEC), or STEC-positive specimens must also be sent

Merlin extended data required

Background

STEC infections have variable severity characterized by diarrhea (often bloody) and abdominal cramps. Illness may be complicated by hemolytic uremic syndrome (HUS). Some clinicians still use the term thrombotic thrombocytopenic purpura (TTP) for adults with post-diarrheal HUS.

Clinical criteria for case classification

Presumptive:
Either abdominal cramps or diarrhea

Supportive:
Diagnosis of post-diarrheal HUS (TTP)

Laboratory criteria for case classification

Confirmatory:
Either of the following:

- Isolation of *E. coli* O157:H7 from a clinical specimen
- **Or** both of the following:
    - Detection of Shiga toxin or Shiga toxin genes in a clinical specimen using a culture-independent diagnostic test (CIDT)
    - **And** isolation of *E. coli* from a clinical specimen

Presumptive:
Both of the following:

- Isolation of *E. coli* O157 from a clinical specimen without confirmation of H antigen
- **And** no known detection of Shiga toxin or Shiga toxin genes in a clinical specimen using a CIDT

Supportive:
One or more of the following:

- Identification of an elevated antibody titer against a known Shiga toxin-producing serogroup of *E. coli*
- **Or** detection of *E. coli* O157 or STEC/enterohemorrhagic *E. coli* (EHEC) in a clinical specimen using a CIDT
- **Or** both of the following:
    - 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

Shiga Toxin-Producing *Escherichia coli* (STEC) Infection (Continued)

Epidemiological criteria for case classification

Either of the following:

- Epidemiological link to confirmed STEC infection case
- **Or** epidemiological link to probable STEC infection case with laboratory criteria

Case classification

Confirmed:
Confirmatory laboratory criteria

Probable:
One or more of the following:

- Presumptive laboratory criteria
- **Or** presumptive clinical criteria and supportive laboratory criteria
- **Or** presumptive clinical criteria and epidemiological criteria

Suspect:
Either of the following:

- Supportive laboratory criteria
- **Or** supportive clinical criteria

Criteria to distinguish a new case from previous reports

Create a new case when either:

- Positive laboratory result is received >180 days after most recent positive laboratory result associated with previously reported case
- **Or** two or more different serogroups/serotypes are identified (report each serogroup/serotype as separate case).

Comments

Asymptomatic infections and infections at sites other than the gastrointestinal tract in people with confirmatory laboratory criteria or presumptive laboratory criteria are considered STEC cases and should be reported.

Although infections with Shiga toxin-producing organisms in the U.S. are primarily caused by STEC, in recent years an increasing number of infections are due to Shiga toxin-producing *Shigella*. People with Shiga toxin or Shiga toxin genes detected using a CIDT and *Shigella* isolated 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. People with Shiga toxin or Shiga toxin genes detected using a CIDT who do not have *Shigella* isolated from a clinical specimen should be classified as a suspect or probable case, regardless of whether detection of Shiga toxin or Shiga toxin genes is confirmed by a public health laboratory.

Shiga Toxin-Producing *Escherichia coli* (STEC) Infection (Continued)

People with STEC infections who develop HUS should be reported as STEC (Merlin disease code: 00800) and HUS (Merlin disease code: 42000). A laboratory result that reports only "*E. coli*" does not indicate STEC.

STEC laboratory results can be difficult to interpret. For paper laboratory results, please create a Merlin lab result and attach a scanned copy of the paper laboratory result.

Shigellosis

Florida HEALTH

Merlin disease code: 00490 Shigellosis

Paper case report form
Merlin extended data optional

Background

Shigellosis is an illness of variable severity commonly manifested by diarrhea, fever, nausea, cramps, and tenesmus. Asymptomatic infections may occur.

Clinical criteria for case classification

One or more of the following: abdominal cramps, diarrhea, fever, vomiting

Laboratory criteria for case classification

Confirmatory:
Isolation of *Shigella* from a clinical specimen

Presumptive:
Detection of *Shigella* or *Shigella*/EIEC* in a clinical specimen using a culture-independent diagnostic test

Supportive:
One or more of the following:

- Detection of *Shigella* in a clinical specimen using non-isolate based sequencing
- **Or** detection of antibodies to *Shigella* in a clinical specimen using a serologic test
- **Or** a laboratory test with a methodology not previously mentioned

* Some multiplex polymerase chain reaction (PCR) tests report "*Shigella*/EIEC". EIEC stands for enteroinvasive *Escherichia coli*.

Epidemiological criteria for case classification

Either of the following:

- Epidemiological link to confirmed shigellosis case
- **Or** epidemiological link to probable shigellosis case with laboratory criteria

Case classification

Confirmed:
Confirmatory laboratory criteria

Probable:
Either of the following:

- Presumptive laboratory criteria
- **Or** clinical criteria and epidemiological criteria

Suspect:
Supportive laboratory criteria

Criteria to distinguish a new case from previous reports

Create a new case when either:

- Positive laboratory result is received >90 days after most recent positive laboratory result associated with a previously reported case
- Or two or more different serotypes are identified (report each serotype as separate case).

Comments

Asymptomatic infections and infections at sites other than the gastrointestinal tract with any laboratory criteria are considered cases and should be reported.

Smallpox

Florida HEALTH

Merlin disease code: 05090 Smallpox

Specimens for all cases must be sent to the Bureau of Public Health Laboratories

This condition has been identified as a potential bioterrorism agent by the CDC

CONTACT BUREAU OF EPIDEMIOLOGY

No paper case report form

No Merlin extended data

Clinical criteria for case classification

Confirmatory:

Both of the following:

- Acute onset of fever ≥101° F (≥38.3 °C)
- **Followed by** a rash characterized by firm deep seated vesicles or pustules in the same stage of development without other apparent cause

Presumptive:

Presentations of smallpox that do not meet the classical confirmatory clinical criteria: hemorrhagic type, flat type, or *Variola sine eruptione* (detailed clinical description available here: www.cdc.gov/smallpox/clinicians/clinical-disease.html)

Supportive:

Generalized, acute vesicular or pustular rash illness with fever preceding development of rash by 1-4 days

Laboratory criteria for case classification

Either of the following:

- 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)

Epidemiological criteria for case classification

Confirmatory:

Epidemiological link to confirmed smallpox case with laboratory criteria

Presumptive:

Epidemiological link to confirmed smallpox case

Case classification

Confirmed:

Either of the following:

- Laboratory criteria
- **Or** confirmatory clinical criteria and confirmatory epidemiological criteria

Probable:

Confirmatory or presumptive clinical criteria and presumptive epidemiological criteria

Suspect:

Supportive clinical criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

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.

Staphylococcal Enterotoxin B Poisoning

Florida HEALTH

Merlin disease code: 38200 Staphylococcal enterotoxin B poisoning

No paper case report form

Specimens for all cases must be sent to the Bureau of Public Health Laboratories

No Merlin extended data

This condition has been identified as a potential bioterrorism agent by the CDC

Clinical criteria for case classification

Staphylococcal enterotoxin B (SEB) is an exotoxin produced by *Staphylococcus aureus*. Clinical signs include nonspecific flu-like symptoms.

- **General symptoms**: Fever, chills, headache, myalgia, conjunctival injection, varying degrees of prostration, potentially septic shock or death
- **Aerosolized exposure**: Nonproductive cough for up to four weeks, retrosternal chest pain, shortness of breath
- **Ingestion exposure**: Nausea, vomiting, diarrhea

Laboratory criteria for case classification

Detection in blood, urine, respiratory secretions, or nasal swabs by enzyme immunoassays (EIA) or chemiluminescence test

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:
Clinical criteria diagnosed by clinical signs and epidemiology

Criteria to distinguish a new case from previous reports

Not applicable

Staphylococcus aureus Infection, Vancomycin Non-Susceptible

Florida HEALTH

Merlin disease code: 38100 *Staphylococcus aureus* Infection, intermediate resistance to vancomycin (VISA)
38101 *Staphylococcus aureus* infection, resistant to vancomycin (VRSA)

Isolates for all cases must be sent to the Bureau of Public Health Laboratories

CONTACT BUREAU OF EPIDEMIOLOGY
No paper case report form
No Merlin extended data

Clinical criteria for case classification

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 persons who remain asymptomatic. The most frequent site of *S. aureus* colonization is the nares.

Laboratory criteria for case classification

Intermediate Resistance (GISA/VISA):
Isolation of *Staphylococcus aureus* from clinical specimen with minimum inhibitory concentration (MIC) between 4 and 8 μg/ml to vancomycin

Resistance (GRSA/VRSA):
Isolation of *Staphylococcus aureus* from clinical specimen with an MIC ≥16 μg/ml to vancomycin

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:
Clinical criteria and laboratory criteria

Criteria to distinguish a new case from previous reports

Not applicable

Streptococcus pneumoniae Invasive Disease

Florida HEALTH

Merlin disease code: 04800 *Streptococcus pneumoniae* invasive disease

Paper case report form

Merlin extended data required for cases <6 years

Background

Streptococcus pneumoniae infections cause many clinical syndromes, depending on the site of infection (e.g., acute otitis media, pneumonia, bacteremia, or meningitis).

Clinical criteria for case classification

Not applicable

Laboratory criteria for case classification

Confirmatory:

- Isolation of *S. pneumoniae* from a normally sterile site (e.g., blood, cerebrospinal fluid, joint fluid, pleural fluid, pericardial fluid)
- **And for resistant isolates:** intermediate- or high-level resistance of the *S. pneumoniae* isolate to at least one antimicrobial agent currently approved for use in treating pneumococcal infection

Presumptive:

Identification of *S. pneumoniae* from a normally sterile body site by a culture-independent diagnostic test

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:

Confirmatory laboratory criteria

Probable:

Presumptive laboratory criteria

Criteria to distinguish a new case from previous reports

Create a new case for a positive laboratory collected >30 days after most recently collected positive specimen associated with a previously reported case.

Comments

Report both resistant and non-resistant isolates. *S. pneumoniae* invasive diseases cases in people ≥6 years old are only reportable for laboratories participating in electronic laboratory reporting (ELR). Cases in people ≥6 years old will be automatically created and reported in Merlin based on ELR results. For people ≥6 years old, case reports received from health care providers or via paper laboratory results do not

need to be investigated or entered into Merlin; however, county health departments can choose to enter and report these cases.

All cases in children <6 years old are reportable for all laboratories and health care providers. All cases in children <6 years old need to be investigated and reported, regardless of the method through which the case reports were received. **Extended data in Merlin is only required for those cases in people <6 years old.**

Resistance defined by Clinical and Laboratory Standards Institute (CLSI) approved methods and CLSI-approved interpretive minimum inhibitory concentration (MIC) standards (µg/mL) *for S. pneumoniae*. CLSI recommends that all invasive *S. pneumoniae* isolates found to be "possibly resistant" to beta-lactams (i.e., an oxacillin zone size of <20 mm) by oxacillin screening should undergo further susceptibility testing by using a quantitative MIC method acceptable for penicillin, extended-spectrum cephalosporins, and other drugs as clinically indicated.

Tetanus

Merlin disease code: 03700 Tetanus

Paper case report form
Merlin extended data required

Clinical criteria for case classification

Either of the following:

- Acute onset of hypertonia or painful muscular contractions (usually of the muscles of the jaw and neck) and generalized muscle spasms diagnosed as tetanus by a health care provider in the absence of a more likely diagnosis
- Or death with tetanus listed on the death certificate as the cause of death or a significant condition contributing to death

Laboratory criteria for case classification

Not applicable

Epidemiological criteria for case classification

Not applicable

Case classification

Probable:
Clinical criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

There is no definition for “confirmed” tetanus.

Trichinellosis (Trichinosis)

Florida HEALTH

Merlin disease code: 12400 Trichinellosis (trichinosis)

Paper case report form required
No Merlin extended data

Background

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.

Clinical criteria for case classification

One or more of the following: fever, myalgia, periorbital edema, eosinophilia

Laboratory criteria for case classification

Confirmatory:
Demonstration of *Trichinella* larvae in tissue obtained by muscle biopsy

Supportive:
Positive *Trichinella* serologic test (e.g., enzyme immunoassay [EIA], immunofluorescence assay [IF])

Epidemiological criteria for case classification

Either of the following:

- Consumed a meat product in which the parasite was demonstrated
- **Or** shared epidemiologically implicated meal or ate epidemiologically implicated meat product

Case classification

Confirmed:
Clinical criteria and confirmatory or supportive laboratory criteria

Probable:
Clinical criteria and epidemiological criteria

Suspect:
Supportive laboratory criteria epidemiological criteria

Criteria to distinguish a new case from previous reports

Do **not** create a new case unless separate epidemiologically compatible exposures can be documented.

Comments

In an outbreak setting, at least one clinical case must have laboratory criteria. 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 (Wilson et. al, 2006).

Tularemia (*Francisella tularensis*)

Florida HEALTH

Merlin disease code: 02190 Tularemia (Francisella tularensis)

Paper case report form required

Isolates or specimens for all cases must be sent to the Bureau of Public Health Laboratories

No Merlin extended data

This condition has been identified as a potential bioterrorism agent by the CDC

Clinical criteria for case classification

An illness characterized by several distinct forms, including the following:

- **Ulceroglandular**: Cutaneous ulcer with regional lymphadenopathy
- **Glandular**: Regional lymphadenopathy with no ulcer
- **Oculoglandular**: Conjunctivitis with preauricular lymphadenopathy
- **Oropharyngeal**: Stomatitis or pharyngitis or tonsillitis and cervical lymphadenopathy
- **Pneumonic**: Primary pulmonary disease
- **Typhoidal**: Febrile illness without early localizing signs and symptoms

Laboratory criteria for case classification

Confirmatory:

Either of the following:

- Isolation of *Francisella tularensis* from a clinical or autopsy specimen
- **Or** fourfold or greater change in serum IgM or IgG titer to *F. tularensis* antigen (e.g., direct fluorescent antibody [DFA], enzyme immunoassay [EIA]) between acute and convalescent specimens

Presumptive:

One or more of the following:

- Detection of *F. tularensis* in a clinical or autopsy specimen by immunofluorescence (IF) assay
- **Or** detection of *F. tularensis* in a clinical or autopsy specimen by a polymerase chain reaction (PCR)
- **Or** both of the following:
    - Elevated serum IgM or IgG titer to *F. tularensis* antigen (e.g., DFA, EIA)
    - **And** no history of tularemia vaccination

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:

Clinical criteria and confirmatory laboratory criteria

Probable:

Clinical criteria and presumptive laboratory criteria

Criteria to distinguish a new case from previous reports

Serial or subsequent cases of tularemia experienced by one person should only be counted if there is an additional epidemiologically compatible exposure and new symptom onset. 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.

Comments

Follow up with laboratory staff to identify any possible exposures. Clinical diagnosis is supported by evidence or history of a tick or deerfly bite, exposure to tissues of a mammalian host of *F. tularensis* (e.g., rodent, rabbit, hare), exposure to potentially contaminated water, laboratory exposure, or residence in or recent travel to a *F. tularensis* endemic area. Tularemia cases are most commonly reported in the midwest, western, and northeastern U.S. states. *F. tularen*sis infections acquired in Florida are uncommon.

Typhus Fever, Epidemic (*Rickettsia prowazekii*)

Florida HEALTH

Merlin disease code: 08000 Typhus fever, epidemic (*Rickettsia prowazekii*) — No paper case report form

Specimens for all cases must be sent to the Bureau of Public Health Laboratories — No Merlin extended data

This condition has been identified as a potential bioterrorism agent by the CDC

Clinical criteria for case classification

Several distinct *Rickettsia* species cause typhus fevers in humans. Each agent produces disease with a distinct epidemiology, but all cause illness, usually with fever, headache, or rash, or a combination of these.

Laboratory criteria for case classification

Either of the following:

- Demonstration of *Rickettsia prowazekii* species in tissues or body fluids
- **Or** fourfold change in specific antibody titers in sequential sera

Epidemiological criteria for case classification

Not applicable

Case classification

Confirmed:
Clinical criteria and laboratory criteria

Probable:
Clinical criteria

Criteria to distinguish a new case from previous reports

Not applicable

Vaccinia

Florida HEALTH

Merlin disease code: 09990 Vaccinia

Isolates for all cases must be sent to the Bureau of Public Health Laboratories

CONTACT BUREAU OF EPIDEMIOLOGY

No paper case report form

No Merlin extended data

Clinical criteria for case classification

Vaccinia disease can present as any number of clinical manifestations ranging from self-limited responses to life-threatening events due to receiving or being inadvertently inoculated with vaccinia as a result of smallpox vaccination.

Clinical complications can include one or more of the following:

- **Eczema vaccinatum:** Characterized by localized or generalized popular, vesicular, or pustular rash, which can occur anywhere on the body, with a predilection for areas of previous atopic dermatitis (e.g., face, forearms, antecubital fossa, popliteal fossa). Rash onset may occur concurrently or shortly after development of the Smallpox vaccine lesion and is often accompanied by fever, malaise, lymphadenopathy and prostration or severe systemic illness.
- **Erythema multiforme major (Stevens-Johnsons Syndrome):** Characterized by systemic symptoms (fever, malaise, prostration) and involvement of 2 or more mucosal surfaces or 10% of the body surface area.
- **Fetal vaccinia (congenital vaccinia):** Characterized by skin lesions (e.g., vesicular, pustular, or ulcerative) and/or organ involvement in a newborn. The skin lesions are similar to those of generalized vaccinia or progressive vaccinia and can be confluent and extensive.
- **Post-vaccinial encephalitis or encephalomyelitis:** Characterized by onset of symptoms 6-15 days post-vaccination. Symptoms include any change in mental status (confusion, delirium, drowsiness, restlessness, disorientation, amnesia, seizures, loss of consciousness, coma) or sensorimotor function (altered sensation, weakness, paresis, aphasia, incontinence or urinary retention, obstinate constipation).
- **Progressive vaccinia:** Characterized by a painless progressive and ulcerating lesion at the vaccination site that does not heal, often with central necrosis, and with little or no inflammation
- **Generalized vaccinia:** Characterized by disseminated maculopapular or vesicular rash, frequently on an erythematous base, usually occurring 6-9 days after first-time vaccination. Lesions may occur on any part of the body, most often on the trunk and abdomen, less commonly on the face and limbs. Though usually benign and self-limiting, can develop into severe systemic illness.
- **Inadvertent inoculation:** Characterized by extensive vesicular and pustular lesion(s) at a distant different location on the vaccinee, or anywhere on a close contact, which is not generalized but may involve a large contiguous area.
- **Ocular vaccinia:** Characterized by inflammation of peri-ocular soft tissue or the eye itself (blepharitis, conjunctivitis, keratitis, iritis).
- **Pyogenic (staphylococcal) infection:** Characterized by vesiculo-pustular lesion at the site of vaccination, often spreading peripherally in circumferential fashion, with clearing behind the advancing border. Bacterial lymphangitis and regional lymphadenitis may occur, but most often the lesions are solely superficial infections.

- **Streptococcal infections:** Characterized by a piled up eschar, heaping at the vaccination site. Lymphangitis occurs commonly as does edematous painful regional lymphadenitis.
- **Enteric and anaerobic infections:** Characterized by purulence with or without extensive necrosis at the vaccination site. Necrotic fasciitis has also been encountered in some cases.
- **Other serious adverse events:** Serious to life-threatening events resulting in hospitalization, permanent disability, life-threatening illness, or death in a Smallpox vaccinee, or a close contact of a vaccinee.

Laboratory criteria for case classification

None unless laboratory confirmation is indicated to distinguish from other infections or other pox

Epidemiological criteria for case classification

Not applicable

Case classification

Probable:
Clinical features compatible with diagnosis, other causes are excluded, and supportive information is available

Suspect:
Either of the following:

- Clinical features compatible with diagnosis where further investigation required
- **Or** clinical features compatible with the diagnosis where additional investigation did not provide supportive information and did not identify an alternative diagnosis

Criteria to distinguish a new case from previous reports

Not applicable

Varicella (Chickenpox)

Merlin disease code: 05290 Varicella (chickenpox)

Paper case report form
Merlin extended data required

Clinical criteria for case classification

Illness with acute onset of diffuse (generalized) maculo-papulovesicular rash without other apparent cause

Laboratory criteria for case classification

One or more of the following:

- Isolation of varicella virus from a clinical specimen
- **Or** detection of varicella antigen by direct fluorescent antibody (DFA)
- **Or** detection of varicella-specific nucleic acid by polymerase chain reaction (PCR)
- **Or** fourfold rise in serum anti-varicella IgG antibody between acute- and convalescent-phase serum specimens

Epidemiological criteria for case classification

Epidemiological link to confirmed or probable varicella case

Case classification

Confirmed:
Either of the following:

- Clinical criteria and laboratory criteria
- **Or** clinical criteria and epidemiological criteria

Probable:
Clinical criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Two probable cases that are epidemiologically linked would be considered confirmed, even in the absence of laboratory confirmation. In vaccinated persons who develop varicella >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 or no vesicles).

Laboratory confirmation of cases of varicella is available through the Bureau of Public Health Laboratories; laboratory confirmation should be obtained for fatal cases, in outbreak settings, and in other special circumstances. Genotyping at the CDC is recommended for large outbreaks. Varicella IgM testing is not always available from commercial laboratories and is not recommended.

Varicella cases should only be reported for cases of chickenpox. Herpes-zoster infections (shingles) are not reportable.

Varicella (Chickenpox) Mortality

Merlin disease code: 05290 Varicella (chickenpox)

Paper case report form required
Merlin extended data required

Clinical criteria for case classification

See varicella (chickenpox) case definition

Laboratory criteria for case classification

See varicella (chickenpox) case definition

Epidemiological criteria for case classification

See varicella (chickenpox) case definition

Case classification

Confirmed:
Confirmed varicella case that contributed directly or indirectly to acute medical complications resulting in death

Probable:
Probable varicella case that contributed directly or indirectly to acute medical complications resulting in death

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Cases of varicella infection that resulted in death should be reported under the reporting code for varicella (disease code 05290) in Merlin with the date of death listed in the case information. It should be noted in the Merlin case notes that infection due to varicella was determined as the cause of death.

Laboratory confirmation of cases of varicella is available through the Bureau of Public Health Laboratories; laboratory confirmation should be obtained for fatal cases.

The additional varicella Death Investigation Worksheet must still be filled out and attached to the case in Merlin or sent to Bureau of Epidemiology. Please see case definition for varicella (chickenpox) in order to classify a case of varicella infection that did not result in death.

Varicella mortality should only be reported for cases of chickenpox. Herpes-zoster infections (shingles) are not reportable.

Vibriosis (Excluding *Vibrio cholerae* Type O1)

Florida HEALTH

Merlin disease code: 00196 Vibriosis (*Grimontia hollisae*)
00195 Vibriosis (*Vibrio alginolyticus*)
00198 Vibriosis (*Vibrio cholerae* Type Non-O1)
00194 Vibriosis (*Vibrio fluvialis*)
00197 Vibriosis (*Vibrio mimicus*)
00540 Vibriosis (*Vibrio parahaemolyticus*)
00199 Vibriosis (*Vibrio vulnificus*)
00193 Vibriosis (Other *Vibrio* Species)

Paper case report form
Merlin extended data required

Isolates or specimens for all cases must be sent to the Bureau of Public Health Laboratories

Clinical criteria for case classification

Infection of variable severity characterized by diarrhea and vomiting, primary septicemia, or wound infections; asymptomatic infections may occur, and organism may cause extra-intestinal infections

Laboratory criteria for case classification

Confirmatory:
Isolation of a species of the family Vibrionaceae (other than toxigenic *V. cholerae* O1 or O139, which is reported as cholera) from a clinical specimen

Presumptive:
Detection of a species of the family Vibrionaceae (other than toxigenic *V. cholerae* O1 or O139, which is reportable as cholera) in a clinical specimen using a culture-independent diagnostic test

Epidemiological criteria for case classification

Either of the following:

- Epidemiological link to confirmed vibriosis case
- **Or** epidemiological link to probable vibriosis case with laboratory criteria

Case classification

Confirmed:
Confirmatory laboratory criteria

Probable:
Either of the following:

- Presumptive laboratory criteria
- **Or** clinical criteria and epidemiological criteria

Vibriosis (Excluding *Vibrio cholerae* Type O1) (Continued)

Criteria to distinguish a new case from previous reports

Create a new case when either:

- Positive laboratory result is received >30 days after most recent positive laboratory result associated with a previously reported case
- **Or** two or more different Vibrionaceae species are identified in specimens from same (report each species as a separate case).

Comments

Infections due to **toxigenic** *V. cholerae* O1 or O139 should **not** be reported as vibriosis, but **should** be reported as cholera (Merlin disease code: 00190). If no species is reported, the case **should** be reported as other *Vibrio* species (Merlin disease code: 00193). If species information subsequently becomes available, the case should be updated to the appropriate disease reporting code.

All cases that are reported as probable due to the CIDT should be reported as other *Vibrio* species (Merlin reporting code=00193). If the case is subsequently culture-confirmed, the case should be updated to a confirmed case of the appropriate disease reporting code.

Genera in the family Vibrionaceae (not all have been recognized to cause human illness) currently include: *Aliivibrio*, *Allomonas*, *Catenococcus*, *Enterovibrio*, *Grimontia*, *Listonella*, *Photobacterium*, *Salinivibrio*, and *Vibrio*.

For paper laboratory results, please create a Merlin lab result and attach a scanned copy of the paper laboratory result. A copy of shellfish tags (where appropriate) should also be scanned and attached to the Merlin case.

The Florida Department of Agriculture and Consumer Services Molluscan Shellfish Program should be notified through your Regional Environmental Epidemiologist of any *Vibrio* infections thought to be associated with shellfish consumption.

Contact your Regional Environmental Epidemiologist for additional information.

Viral Hemorrhagic Fever

Florida HEALTH

Merlin disease code: 06591 Viral hemorrhagic fever, Crimean-Congo
06592 Viral hemorrhagic fever, Ebola
06593 Viral hemorrhagic fever, Guanarito
06594 Viral hemorrhagic fever, Junin
06595 Viral hemorrhagic fever, Lassa
06596 Viral hemorrhagic fever, Lujo
06597 Viral hemorrhagic fever, Machupo
06598 Viral hemorrhagic fever, Marburg
06599 Viral hemorrhagic fever, Sabia
06600 Viral hemorrhagic fever, Chapare

CONTACT BUREAU OF EPIDEMIOLOGY IMMEDIATELY
Available 24/7 at (850) 245-4401
No paper case report form
No Merlin extended data

Isolates or specimens for all cases must be sent to the Bureau of Public Health Laboratories

Viral hemorrhagic fevers, including filoviruses like Ebola and Marburg and arenaviruses like Lassa and Machupo, have been identified as a potential bioterrorism agent by the CDC.

Background

Diagnosis of viral hemorrhagic fever (VHF) must be made by a physician. Common presenting complaints are fever, myalgia, and prostration, with headache, pharyngitis, conjunctival injection, flushing, and gastrointestinal symptoms. This may be complicated by spontaneous bleeding, petechiae, hypotension and perhaps shock, edema, and neurologic involvement.

VHF can be caused by:

- Filoviruses: Ebola, Marburg
- Old world arenaviruses: Lassa, Lujo
- New world arenaviruses: Guanarito, Machupo, Junin, Sabia, Chapare
- Crimean-Congo hemorrhagic fever virus

Clinical criteria for case classification

Both of the following:

- Fever ≥100.4°F (38°C)
- **And** one or more of the following clinical findings: severe headache, myalgia (muscle pain), erythematous maculopapular rash on the trunk with fine desquamation 3–4 days after rash onset, vomiting, diarrhea, abdominal pain, bleeding not related to injury, thrombocytopenia, pharyngitis (arenaviruses only), proteinuria (arenaviruses only), retrosternal chest pain (arenaviruses only)

Laboratory criteria for case classification

One or more of the following laboratory findings:

- Detection of VHF viral antigens in blood by enzyme immunoassay (EIA)
- **Or** VHF viral isolation in cell culture for blood or tissues
- **Or** detection of VHF-specific genetic sequence by reverse transcriptase polymerase chain reaction (PCR) from blood or tissues
- **Or** detection of VHF viral antigens in tissues by immunohistochemistry (IHC)

Epidemiological criteria for case classification

One or more of the following exposures in the 3 weeks before symptom onset:

- Contact with blood or other body fluids of a patient with VHF
- Or residence in or travel to a VHF endemic area or area with active transmission
- Or work in a laboratory that handles VHF specimens
- Or work in a laboratory that handles bats, rodents, or primates from VHF endemic area or area with active transmission
- Or exposure to semen from a confirmed acute or clinically recovered of VHF

Case classification

Confirmed:
Clinical criteria and laboratory criteria

Suspect:
Clinical criteria and epidemiological criteria

Criteria to distinguish a new case from previous reports

Create a new case if not previously counted as a case of VHF caused by virus determined by laboratory evidence.

Yellow Fever

Merlin disease code: 06090 Yellow fever

Specimens for all cases must be sent to the Bureau of Public Health Laboratories

Paper case report form

Merlin extended data required

Clinical criteria for case classification

One or more of the following in the absence of a more likely diagnosis: fever, jaundice, bilirubin ≥3.0 mg/dL

Laboratory criteria for case classification

Confirmatory:

One or more of the following:

- Both of the following:
  - Isolation of virus or detection of specific viral antigen or nucleic acid in tissue, blood, cerebrospinal fluid (CSF), or other body fluid (e.g., culture, immunohistochemistry [IHC], polymerase chain reaction [PCR])
  - **And** no history of yellow fever vaccination within 30 days before symptom onset, unless there is molecular evidence of infection with wild-type yellow fever virus
- **Or** both of the following:
  - Fourfold or greater change in virus-specific neutralizing antibody titers in paired sera (e.g., plaque reduction neutralization [PRNT])
  - **And** no history of yellow fever vaccination within 30 days before symptom onset
- **Or** all of the following:
  - Virus-specific IgM antibodies in serum or CSF (e.g., enzyme immunoassay [EIA], microsphere immunoassay [MIA], immunofluorescence assay [IF])
  - **And** confirmatory virus-specific neutralizing antibodies in the same or a later specimen (e.g., PRNT)
  - **And** no history of yellow fever vaccination

Presumptive:

All of the following:

- Virus-specific IgM antibodies in serum or serum (e.g., EIA, MIA, IF)
- **And** negative, equivocal, or indeterminate result for IgM antibodies in serum or CSF for arboviruses endemic to the region where exposure occurred (e.g., EIA, MIA, IF)
- **And** no history of yellow fever vaccination

Supportive:

One or more of the following:

- Both of the following:
  - Isolation of virus from or detection of specific viral antigen or nucleic acid in tissue, blood, CSF, or other body fluid (e.g., culture, IHC, PCR)
  - **And** yellow fever vaccination within 30 days before symptom onset with molecular evidence of infection with the vaccine strain

- **Or** both of the following:
    - One or more of the following:
        - Isolation of virus from or detection of specific viral antigen or nucleic acid in tissue, blood, CSF, or other body fluid (e.g., culture, IHC, PCR)
        - **Or** fourfold or greater change in virus-specific neutralizing antibody titers in paired sera (e.g., PRNT)
        - **Or** both of the following:
            - Virus-specific IgM antibodies in serum or CSF (e.g., EIA, MIA, IF)
            - **And** confirmatory virus-specific neutralizing antibodies in the same or a later specimen (e.g., PRNT)
        - **Or** both of the following:
            - Virus-specific IgM antibodies in serum or CSF (e.g., EIA, MIA, IF)
            - **And** negative, equivocal, or indeterminate result for IgM antibodies in serum or CSF for arboviruses endemic to the region where exposure occurred (e.g., EIA, MIA, IF)
    - **And** yellow fever vaccination within 30 days before symptom onset where vaccine-associated illness could not be ruled out

Epidemiological criteria for case classification

One or more of the following:

- Resided in or recently traveled to area with known yellow fever virus transmission
- **Or** epidemiological link to confirmed or probable case
- **Or** likely vector exposure in area with suitable seasonal and ecological conditions for potential local vector-borne transmission
- **Or** received of blood or blood products in 30 days before symptom onset
- **Or** received of organ or tissue transplant in 30 days before symptom onset

Case classification

Confirmed*:*
Clinical criteria, confirmatory laboratory criteria, and epidemiological criteria

Probable:
Clinical criteria, presumptive laboratory criteria, and epidemiological criteria

Suspect:
One or more of the following:

- Clinical criteria and supportive laboratory criteria
- **Or** confirmatory or presumptive laboratory criteria and epidemiological criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Cross-reaction with related flaviviruses (e.g., dengue, West Nile, yellow fever, Japanese encephalitis viruses) on serological tests is common and results may be difficult to interpret. Due to this cross reactivity, it is important to ask if there has been any lifetime travel to a flavivirus-endemic country or vaccination for Japanese encephalitis virus.

Yellow fever vaccination history is essential to properly interpret yellow fever diagnostic test results. Following routine vaccination, yellow fever vaccine viral RNA can be detected in serum for up to 14 days, and IgM and neutralizing antibodies can persist for years. In addition, yellow fever vaccine-associated viscerotropic disease is a rare serious adverse event in which vaccine virus proliferates in multiple organs within weeks after vaccination; viral RNA and antigen can be detected in serum and tissues and may be indistinguishable from wild-type disease without additional testing.

Arboviral IgM antibodies may be detected in some patients months or years after their acute infection or vaccination. 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 neutralizing 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.

Clinicians should also consider testing for dengue, chikungunya, and Zika viruses for suspected yellow fever cases. As testing capacity allows, specimens meeting the requirements for yellow fever virus PCR testing at the Bureau of Public Health Laboratories (BPHL) will also be tested for dengue, chikungunya, and Zika viruses as appropriate.

Zika Virus Disease and Infection, Congenital

Florida HEALTH

Merlin disease code: 06012 Zika virus disease and infection, congenital

Specimens for all cases must be sent to the Bureau of Public Health Laboratories

Paper case report form

Merlin extended data required

Background

Zika virus (ZIKV) is an emerging mosquito-borne virus that has spread rapidly across the Americas in 2015 and 2016. Only about 1 in 5 people infected with Zika virus are symptomatic and some patients may not have fever. ZIKV disease, dengue fever, and chikungunya fever are difficult to differentiate clinically. It is also important to note that co-infections with these viruses can occur. Subsequent investigations have demonstrated vertical transmission of ZIKV to the fetus in pregnant women. These in utero infections have been associated with the potential for devastating outcomes including microcephaly, other central nervous system (CNS) abnormalities, and spontaneous abortions. There is also an association with ZIKV infection and post-infection Guillain-Barré syndrome (GBS).

Clinical criteria for case classification

Zika virus disease:
Liveborn infant with one or more of the following not explained by another etiology: congenital microcephaly, intracranial calcifications, structural brain or eye abnormalities, or other congenital CNS-related abnormalities

Zika virus infection:
No clinical criteria required

Laboratory criteria for case classification

Confirmatory:
Either of the following:

- Detection of ZIKV by culture, viral antigen, or viral RNA in fetal tissue, amniotic fluid, neonatal serum, cerebrospinal fluid (CSF), urine, or umbilical cord blood* performed by a state public health laboratory (PHL) or the CDC in a specimen collected within 2 days of birth (or later if perinatal infection has been ruled out)
- **Or** all of the following:
    - Positive enzyme immunosorbent assay (EIA) or immunofluorescent assay (IFA) test for ZIKV IgM antibodies in neonatal serum, CSF, or umbilical cord blood* collected within 2 days of birth (or later if perinatal infection has been ruled out)
    - **And** positive neutralizing antibody titers by plaque reduction neutralization test (PRNT) against ZIKV
    - **And** negative neutralizing antibody titers by PRNT against dengue virus (DENV) or other flaviviruses endemic to the region where exposure occurred

Presumptive:

- Both of the following:
    - Positive or equivocal EIA or IFA test for ZIKV IgM antibodies in neonatal serum, CSF, or umbilical cord blood* collected within 2 days of birth (or later if perinatal infection has been ruled out)
    - **And** positive neutralizing antibody titers by PRNT against ZIKV

- **Or** all of the following:
  - Positive or equivocal EIA or IFA test for ZIKV IgM antibodies in neonatal serum, CSF, or umbilical cord blood* collected within 2 days of birth or later if perinatal infection has been ruled out
  - **And** negative or equivocal EIA or IFA test for DENV IgM antibodies or IgM antibodies to other flaviviruses endemic to the region where the exposure occurred
  - **And** no PRNT performed

Supportive:

- All of the following:
  - Positive or equivocal EIA or IFA test for ZIKV IgM antibodies in neonatal serum, CSF, or umbilical cord blood*
  - **And** no DENV IgM testing performed
  - **And** no PRNT performed
  - **And** mother's test results do not rule out recent ZIKV infection
- **Or** both of the following:
  - Positive neutralizing antibody titers by PRNT against ZIKV in a sample collected ≥18 months after birth
  - **And** no travel to an area with known ZIKV transmission reported for the infant since birth
- **Or** both of the following:
  - Positive neutralizing antibody titers by PRNT against ZIKV in a sample collected ≥18 months after birth
  - **And** case reviewer determined low ZIKV exposure risk postnatally after reviewing postnatal travel history and 18-month test results
- **Or** both of the following:
  - Positive EIA or IFA for ZIKV IgM antibodies from a commercial laboratory
  - **And** no testing performed by a PHL or CDC on the same specimen
- **Or** both of the following:
  - Positive ZIKV PCR by a commercial laboratory
  - **And** no testing performed by a PHL or CDC on the same specimen

Not a case:

One or more of the following:

- Both of the following:
  - Positive or equivocal EIA or IFA for ZIKV IgM antibodies by a commercial laboratory
  - **And** negative or indeterminate EIA or IFA for ZIKV IgM antibodies by a PHL or CDC for the same specimen
- **Or** all of the following:
  - Positive ZIKV PCR by a commercial laboratory,
  - **And** negative or equivocal PCR by a PHL or CDC
  - **And** absence of a positive or equivocal EIA or IFA for ZIKV IgM antibodies by a PHL or CDC for the same specimen

- **Or** positive neutralizing antibody titers by PRNT against ZIKV in sample collected <18 months after birth
- **Or** negative neutralizing antibody titers by PRNT against ZIKV
- **Or** negative ZIKV PCR
- **Or** negative or indeterminate EIA or IFA for ZIKV IgM antibodies
- **Or** testing is otherwise determined to be falsely positive by case reviewer

* While collection of umbilical cord blood was initially recommended, neonatal serum is the preferred specimen type. Umbilical cord blood should only be submitted for testing when no serum is available.

Epidemiological criteria for case classification

Infant whose mother meets one or more of the following:

- Resides in or recent travel to an area with known ZIKV transmission
- **Or** sexual contact with a confirmed or probable case of ZIKV infection or person with recent travel to an area with known ZIKV transmission
- **Or** receipt of blood or blood products within 30 days of symptom onset
- **Or** receipt of organ or tissue transplant within 30 days of symptom onset
- **Or** association in time and place with a confirmed or probable case
- **Or** likely vector exposure in an area with suitable seasonal and ecological conditions for potential local vectorborne transmission

Case classification

Confirmed*:*
Confirmatory laboratory criteria and epidemiological criteria

Probable:
Presumptive laboratory criteria and epidemiological criteria

Suspect:
Supportive laboratory criteria and epidemiological criteria

Criteria to distinguish a new case from previous reports

Not applicable

Comments

As part of the complete evaluation of congenital microcephaly or other CNS birth defects, testing for other congenital infections such as syphilis, toxoplasmosis, rubella, cytomegalovirus infection, lymphocytic choriomeningitis virus infection, and herpes simplex virus infections should be considered. An assessment of potential genetic and other teratogenic causes of the congenital anomalies should also be performed.

Cross-reaction with related flaviviruses (e.g., dengue, West Nile, yellow fever, Japanese encephalitis viruses) on serological tests is common and results may be difficult to interpret. Due to this cross-reactivity, it is important to ask if there has been any lifetime travel by the mother to a flavivirus-endemic country or vaccination for

yellow fever or Japanese encephalitis viruses. In addition, people with dengue infection often test positive for ZIKV IgM. It is also important to get the lifetime travel history for the infant, particularly if PRNT testing is going to be performed at 18 months of age to assess congenital exposure.

Zika Virus Disease and Infection, Non-Congenital

Florida HEALTH

Merlin disease code: 06010 Zika virus disease and infection, non-congenital

Paper case report form

Acute and convalescent sera for infections believed to be Florida-acquired must be sent to the Bureau of Public Health Laboratories (sera for infections believed to be acquired outside Florida do not need to be forwarded to BPHL unless the serum is from a pregnant woman, infant, or possible Guillain-Barré syndrome case)

Merlin extended data required

Background

Zika virus (ZIKV) is an emerging mosquito-borne virus that has spread rapidly across the Americas in 2015 and 2016. Only about 1 in 5 people infected with Zika virus are symptomatic and some patients may not have fever. ZIKV disease, dengue fever, and chikungunya fever are difficult to differentiate clinically. It is also important to note that co-infections with these viruses can occur. Subsequent investigations have demonstrated vertical transmission of ZIKV to the fetus in pregnant women. These in utero infections have been associated with the potential for devastating outcomes including microcephaly, other central nervous system abnormalities, and spontaneous abortions. There is also an association with ZIKV infection and post-infection Guillain-Barré syndrome (GBS).

Clinical criteria for case classification

Zika virus disease:

One or more of the following in the absence of a more likely diagnosis:

- One or more of the following: fever (measured or reported), rash, arthralgia, or conjunctivitis
- **Or** complication of pregnancy including either fetal loss or fetus or neonate with congenital microcephaly, congenital intracranial calcifications, other structural brain or eye abnormalities, or other congenital central nervous system-related abnormalities including defects such as clubfoot or multiple joint contractures
- **Or** GBS meeting Brighton Collaboration level 1, 2, or 3 or other neurologic manifestations

Zika virus infection:

No clinical criteria required

Laboratory criteria for case classification

Confirmatory:

For all locally acquired cases (including index, sporadic, and locally acquired via mosquito exposure after epidemiological linkage or transmission in an area has been established), either of the following:

- Detection of ZIKV by culture, viral antigen, or viral RNA in serum, CSF, tissue, or other specimen (e.g., urine, whole blood, amniotic fluid, semen) by a state public health laboratory (PHL) or the CDC
- **Or** all of the following:
  - Positive enzyme immunoassay (EIA), microsphere immunofluorescence assay (MIA), or immunofluorescent assay (IF) for ZIKV IgM antibodies in serum or CSF by a PHL or CDC
  - **And** positive neutralizing antibody titers by plaque reduction neutralization test (PRNT) against ZIKV by a PHL or CDC
  - **And** negative neutralizing antibody titers by PRNT against dengue virus (DENV) (or other flaviviruses endemic to the region where exposure occurred) by a PHL or CDC

For imported cases, either of the following:

- Detection of ZIKV by culture, viral antigen, or viral RNA in serum, CSF, tissue, or other specimen (e.g., urine, whole blood, amniotic fluid, semen)
- **Or** all of the following:
  - Positive EIA, MIA, or IF for ZIKV IgM antibodies in serum or CSF
  - **And** positive neutralizing antibody titers by PRNT against ZIKV
  - **And** negative neutralizing antibody titers by PRNT against DENV (or other flaviviruses endemic to the region where exposure occurred)

Presumptive:

For index or sporadic cases acquired locally via mosquito exposure, all of the following:

- Positive EIA, MIA, or IF for ZIKV IgM antibodies in serum or CSF by a PHL or CDC
- **And** positive neutralizing antibody titers by PRNT against ZIKV by a PHL or CDC
- **And** absence of positive EIA, MIA, or IF for DENV IgM antibodies (or other flaviviruses endemic to the region where the exposure occurred)

For cases acquired locally via mosquito exposure after epidemiological linkage or transmission in an area has been established, one or more of the following:

- All of the following:
  - Positive or equivocal EIA, MIA, or IF for ZIKV IgM antibodies in serum or CSF by a PHL or CDC
  - **And** positive neutralizing antibody titers by PRNT against ZIKV by a PHL or CDC
  - **And** absence of positive EIA, MIA, or IF for DENV IgM antibodies (or other flaviviruses endemic to the region where the exposure occurred)
- **Or** all of the following:
  - Positive EIA, MIA, or IF for ZIKV IgM antibodies in serum or CSF by a PHL or CDC
  - **And** negative or equivocal EIA, MIA, or IF for DENV IgM antibodies (or other flaviviruses endemic to the region where the exposure occurred) by a PHL or CDC
  - **And** absence of a negative neutralizing antibody titers by PRNT against ZIKV
- **Or** both of the following:
  - Seroconversion from negative for ZIKV IgM antibodies in an acute-phase specimen to positive for ZIKV IgM antibodies in a convalescent-phase specimen by EIA, MIA, or IF in serum or CSF by a PHL or CDC
  - **And** negative or equivocal EIA, MIA, or IF for DENV IgM antibodies (or other flaviviruses endemic to the region where the exposure occurred) by a PHL or CDC
- **Or** all of the following:
  - Positive EIA, MIA, or IF for ZIKV IgM antibodies in serum or CSF by a PHL or CDC
  - **And** negative DENV polymerase chain reaction (PCR) by a PHL or CDC
  - **And** negative or equivocal EIA, MIA, or IF for DENV IgM antibodies by a PHL or CDC
  - **And** seroconversion from negative for DENV IgG antibodies in an acute-phase specimen to positive for DENV IgG antibodies in a convalescent-phase specimen by EIA, MIA, or IF by a PHL or CDC

- **Or** all of the following:
  - Positive EIA, MIA, or IF for ZIKV IgM antibodies in serum
  - **And** positive EIA, MIA, or IF for DENV IgM antibodies (or other flaviviruses endemic to the region where the exposure occurred)
  - **And** epidemiological linkage to a confirmed or probable ZIKV case

For imported cases in pregnant women, all of the following:

- Positive or equivocal EIA, MIA, or IF for ZIKV IgM antibodies in serum or CSF
- **And** positive neutralizing antibody titers by PRNT against ZIKV
- **And** absence of positive EIA, MIA, or IF for DENV IgM antibodies (or other flaviviruses endemic to the region where the exposure occurred)

For non-pregnant, imported cases, one or more of the following:

- All of the following:
  - Positive or equivocal EIA, MIA, or IF for ZIKV IgM antibodies in serum or CSF
  - **And** positive neutralizing antibody titers by PRNT against ZIKV
  - **And** absence of positive EIA, MIA, or IF for DENV IgM antibodies (or other flaviviruses endemic to the region where the exposure occurred)
- **Or** both of the following:
  - Seroconversion from negative for ZIKV IgM antibodies in an acute-phase specimen to positive for ZIKV IgM antibodies in a convalescent-phase specimen by EIA, MIA, or IF in serum or CSF
  - **And** negative or equivocal EIA, MIA, or IF for DENV IgM antibodies (or other flaviviruses endemic to the region where the exposure occurred)
- **Or** all of the following:
  - Positive EIA, MIA, or IF for ZIKV IgM antibodies in serum or CSF
  - **And** negative DENV PCR
  - **And** negative or equivocal EIA, MIA, or IF for DENV IgM antibodies
  - **And** seroconversion from negative for DENV IgG antibodies in an acute-phase specimen to positive for DENV IgG antibodies in a convalescent-phase specimen by EIA, MIA, or IF
- **Or** all of the following:
  - Positive EIA, MIA, or IF for ZIKV IgM antibodies in serum or CSF
  - **And** negative DENV PCR
  - **And** negative or equivocal EIA, MIA, or IF for DENV IgM antibodies
  - **And** positive for DENV IgG antibodies
- **Or** all of the following:
  - Positive EIA, MIA, or IF for ZIKV IgM antibodies in serum
  - **And** positive EIA, MIA, or IF for DENV IgM antibodies (or other flaviviruses endemic to the region where the exposure occurred)
  - **And** epidemiological linkage to a confirmed or probable ZIKV case

Zika Virus Disease and Infection, Non-Congenital (Continued)

Supportive:

For locally acquired cases and imported cases in pregnant women, one or more of the following:

- Both of the following:
  - Positive ZIKV PCR by a commercial laboratory
  - **And** no testing performed by a PHL or CDC on the same specimen
- **Or** both of the following:
  - Positive EIA, MIA, or IF for ZIKV IgM antibodies by a commercial laboratory
  - **And** no testing performed by a PHL or CDC on the same specimen

For all cases, one or more of the following:

- All of the following:
  - Positive, equivocal, or indeterminate EIA, MIA, or IF for ZIKV IgM antibodies in serum or CSF
  - **And** absence of positive DENV IgM antibodies (or other flaviviruses endemic to the region where the exposure occurred)
  - **And** absence of positive or negative neutralizing antibody titers by PRNT against ZIKV
- **Or** both of the following:
  - Positive neutralizing antibody titers by PRNT against ZIKV
  - **And** absence of positive DENV IgM antibodies (or other flaviviruses endemic to the region where the exposure occurred)
- **Or** all of the following:
  - Positive ZIKV PCR by a commercial laboratory
  - **And** negative or equivocal ZIKV PCR by a PHL or CDC for the same specimen
  - **And** absence of a positive or equivocal EIA, MIA, or IF for ZIKV IgM antibodies by a PHL or CDC for the same specimen
  - **And** no additional specimens collected
- **Or** all of the following:
  - Positive or equivocal EIA, MIA, or IF for ZIKV IgM antibodies by a commercial laboratory
  - **And** negative EIA, MIA, or IF for ZIKV IgM antibodies by a PHL or CDC for the same specimen
  - **And** positive neutralizing antibody titers by PRNT against ZIKV

Not a case:

One or more of the following:

- Both of the following:
  - Positive or equivocal EIA, MIA, or IF for ZIKV IgM antibodies by a commercial laboratory
  - **And** negative EIA, MIA, or IF for ZIKV IgM antibodies by a PHL or CDC for the same specimen
- **Or** all of the following:
  - Positive ZIKV PCR by a commercial laboratory
  - **And** negative or equivocal ZIKV PCR by a PHL or CDC
  - **And** negative or indeterminate EIA, MIA, or IF for ZIKV IgM antibodies by a PHL or CDC for the same specimen
  - **And** negative or indeterminate EIA, MIA, or IF for ZIKV IgM antibodies in a convalescent specimen collected 7 days to 12 weeks after the first specimen

- **Or** negative ZIKV PCR
- **Or** negative EIA, MIA, or IF for ZIKV IgM antibodies
- **Or** testing is otherwise determined to be falsely positive by case reviewer

Epidemiological criteria for case classification

General epidemiological criteria:

For symptomatic cases, one or more of the following:

- Resided in or recently traveled to area with **outbreak** ZIKV transmission
- **Or** received blood or blood products within 30 days of symptom onset
- **Or** received organ or tissue transplant within 30 days of symptom onset
- **Or** epidemiological link to confirmed or probable case
- **Or** sexual contact with confirmed or probable case of ZIKV infection or person with recent travel to area with **outbreak** ZIKV transmission
- **Or** likely vector exposure in area with suitable seasonal and ecological conditions for potential local vectorborne transmission

For asymptomatic cases in pregnant women, one or more of the following:

- Resided in or recently traveled to area with **outbreak** ZIKV transmission
- **Or** epidemiological link to confirmed or probable case
- **Or** sexual contact with confirmed or probable case of ZIKV infection or person with recent travel to area with **outbreak** ZIKV transmission

For possibly locally acquired asymptomatic cases:

Epidemiological link to confirmed or probable Zika case

Confirmatory perinatal linkage:

Mother whose baby is a confirmed congenital Zika case

Presumptive perinatal linkage:

Mother whose baby is a probable congenital Zika case

Supportive perinatal linkage:

Mother whose baby is a suspect congenital Zika case

Case classification

Confirmed*:*

Either of the following:

- Confirmatory laboratory criteria and general epidemiological criteria
- **Or** confirmatory perinatal linkage

Probable:

Either of the following:

- Presumptive laboratory criteria and general epidemiological criteria
- **Or** presumptive perinatal linkage

Suspect:
One or more of the following:

- Supportive laboratory criteria and general epidemiological criteria
- **Or** supportive perinatal linkage
- **Or** case transferred from another jurisdiction that does not otherwise meet Florida's case definition

Criteria to distinguish a new case from previous reports

Not applicable

Comments

Cross-reaction with related flaviviruses (e.g., dengue, West Nile, yellow fever, Japanese encephalitis viruses) on serological tests is common and results may be difficult to interpret. Due to this cross-reactivity, it is important to ask if there has been any lifetime travel to a flavivirus-endemic country or vaccination for yellow fever or Japanese encephalitis viruses. In addition, people with dengue infection often test positive for ZIKV IgM.

Due to the cross-reactivity seen among flaviviruses, persons testing positive for both ZIKV and DENV IgM should be reported as flavivirus disease and infection (Merlin disease code: 07000). PRNT is not required to meet these criteria; however, if a PRNT is performed, there should be positive neutralizing antibody titers to both ZIKV and DENV. If a person with flavivirus results is epidemiologically linked to a confirmed or probable ZIKV or DENV case, the case should not be reported as a flavivirus case.

Clinicians should also consider testing for dengue and chikungunya fever for suspect cases of ZIKV disease if fever was reported. As testing capacity allows, all specimens meeting the requirements for ZIKV disease PCR testing at the Bureau of Public Health Laboratories (BPHL) will also be tested for dengue and chikungunya viruses if the patient reported fever. All specimens collected in the first four days of illness and meeting standard requirements for dengue and chikungunya testing will also be tested for Zika virus by PCR if travel to a ZIKV disease endemic area is reported.

Differentiating between ZIKV and DENV infections in PCR-negative patients with positive flavivirus labs

- Conjunctivitis and pruritic rash are more common with ZIKV disease than dengue fever.
- Thrombocytopenia and leukopenia are more common and severe in cases of dengue fever compared to ZIKV disease.
- ZIKV is not known to cause severe syndromes that can be seen with DENV (dengue hemorrhagic fever or dengue shock syndrome).
- ZIKV IgM titers are usually positive in dengue fever patients. DENV IgM titers may or may not be positive in ZIKV disease patients. EIA IgM results from BPHL are not quantitative and the values derived from this assay cannot be compared between illnesses.
- For non-PCR positive cases, dengue fever cases should be created instead of ZIKV disease cases if one or more of the following is true:
    - Clinician ordered dengue testing, did not request Zika testing, and dengue IgM was positive.
    - Clinician ordered Zika testing and Zika IgM was negative, while dengue IgM was positive.
    - PRNT testing is positive for dengue and negative for Zika.