Surveillance Case Definitions for *Select* Reportable Diseases in Florida

Florida Department of Health
Bureau of Epidemiology

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☎ **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***

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Case Definitions for Select Diseases and Conditions Under Public Health Surveillance

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 epidemiologic 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 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 FDOH. 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 (http://www.Floridahealth.gov/SurveillanceInvestigationGuide).

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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

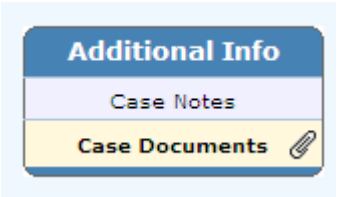
Suspect Immediately: Report immediately, 24 hours a day, 7 days a week (24/7), by phone upon initial clinical suspicion or laboratory test order

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*

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 (CRFs) 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.

PAPER CASE REPORT FORM (CRF) REQUIRED:
An electronic extended data screen is not available in Merlin. A paper CRF must be completed to capture disease-specific risk factors. Paper CRFs 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 CRF, they can be faxed to the Bureau of Epidemiology 850-414-6894 where staff will scan and attach the CRF to the case.



HOW TO USE INFORMATION IN THIS REPORT

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

CLINICALLY COMPATIBLE ILLNESS: A clinical syndrome generally compatible with the disease, as described in the clinical description.

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 LABORATORY EVIDENCE: Specified laboratory results that are consistent with the diagnosis and are part of the **confirmed** case classification.

PRESUMPTIVE LABORATORY EVIDENCE: Specified laboratory results that are consistent with the diagnosis and are part of the **probable** case classification..

SUPPORTIVE LABORATORY EVIDENCE: Specified laboratory results that are consistent with the diagnosis and are part of the **suspect** case classification.

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.

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DISEASES/CONDITIONS

☎ Amebic Encephalitis (*Naegleria fowleri, Balamuthia mandrillaris, Acanthamoeba*)

Merlin reporting code = 13620
Case report form (CRF): *Primary Amebic Meningoencephalitis CRF*
PAPER CRF REQUIRED

Naegleria fowleri Causing Primary Amebic Meningoencephalitis (PAM)

Clinical description

N. fowleri is a free-living ameboflagellate that invades the brain and meninges via the nasal mucosa and olfactory nerve to cause acute, fulminant hemorrhagic meningoencephalitis (primary amebic meningoencephalitis – PAM), primarily in healthy children and young adults with a recent history of exposure to warm fresh water. Initial signs and symptoms of PAM begin 1 to 14 days after infection and include sudden onset of headache, fever, nausea, vomiting, and stiff neck accompanied by positive Kernig's and Brudzinski's signs. In some cases, abnormalities in taste or smell, nasal obstruction and nasal discharge may be seen. Other symptoms may include photophobia, mental-state abnormalities, lethargy, dizziness, loss of balance, other visual disturbances, hallucinations, delirium, seizures, and coma. After the onset of symptoms, the disease progresses rapidly and usually results in death within 3 to 7 days. Although a variety of treatments have been shown to be active against amebae *in vitro* and have been used to treat infected persons, most infections have still been fatal.

Laboratory criteria for case classification

Detection of *N. fowleri*

- Organisms in CSF, biopsy, or tissue specimens;

OR

- Nucleic acid (e.g., polymerase chain reaction) in CSF, biopsy, or tissue specimens;

OR

- Antigen (e.g., direct fluorescent antibody) in CSF, biopsy, or tissue specimens.

Case classification

Confirmed: A clinically compatible illness in a person with laboratory evidence. When available, molecular characterization should be reported (e.g. genotype).

Comments

N. fowleri may cause clinical illness similar to bacterial meningitis, particularly in its early stages. Definitive diagnosis by a reference laboratory may be required. Unlike *B. mandrillaris* and *Acanthamoeba* spp., *N. fowleri* is commonly found in CSF.

Balamuthia mandrillaris Disease

Clinical description

B. mandrillaris is an opportunistic free-living ameba that may invade the brain through the blood, probably from a primary infection in the skin (from ulcers or dermatitis), the sinuses and middle ear (from rhinitis, sinusitis, or otitis media), or via organ transplantation. The incubation period is not well characterized but has been observed to range from 2 weeks to months or possibly years. Once in the brain, the amebae can cause meningoencephalitis or granulomatous amebic encephalitis (GAE). The

amebae may also invade the brain via the nasal mucosa and olfactory nerve. *B. mandrillaris* GAE often has a slow and insidious onset and develops as a subacute or chronic disease lasting several weeks to months; however, *B. mandrillaris* infections associated with organ transplantation have an especially rapid clinical course. *B. mandrillaris* GAE generally affects persons who are immunosuppressed from a variety of causes (e.g., HIV/AIDS, IV drug use). However, cases have also occurred in young children and older adults with no obvious signs of immunosuppression. In some instances, affected individuals have had a relatively rapid clinical course. Initial symptoms of *B. mandrillaris* GAE may include headache, photophobia, and stiff neck accompanied by positive Kernig's and Brudzinski's signs. Other symptoms may include nausea, vomiting, low-grade fever, muscle aches, weight loss, mental-state abnormalities, lethargy, dizziness, loss of balance, cranial nerve palsies, other visual disturbances, hemiparesis, seizures, and coma. Painless skin lesions appearing as plaques a few millimeters thick and one to several centimeters wide have been observed in some patients, especially patients outside the U.S., preceding the onset of neurological symptoms by 1 month to approximately 2 years. Once the disease progresses to the acute stage, it is generally fatal within weeks or months. However, a few patients have survived this infection.

Laboratory criteria for case classification

Detection of *B. mandrillaris*

- Organisms in CSF, biopsy, or tissue specimens;

OR

- Nucleic acid (e.g., polymerase chain reaction) in CSF, biopsy, or tissue specimens;

OR

- Antigen (e.g., direct fluorescent antibody) in CSF, biopsy, or tissue specimens.

Case classification

Confirmed: A clinically compatible illness in a person with laboratory evidence. When available, molecular characterization should be reported (e.g. genotype).

Comments

B. mandrillaris and *Acanthamoeba* spp. may cause clinically similar illnesses and may be difficult to differentiate using commonly available laboratory procedures. Definitive diagnosis by a reference laboratory may be required. A negative test on CSF does not rule out *B. mandrillaris* infection because the organism load in the CSF is often low.

Acanthamoeba Disease (Excluding Keratitis)

Clinical description

The genus *Acanthamoeba* includes several species of opportunistic free-living amebae that may invade the brain through the blood, probably from a primary infection in the skin (from ulcers or dermatitis) or the sinuses and middle ear (from rhinitis, sinusitis, or otitis media). Once in the brain, the amebae cause a granulomatous amebic encephalitis (GAE). The amebae may also invade the brain via the nasal mucosa and olfactory nerve. *Acanthamoeba* GAE has a slow and insidious onset and develops as a subacute or chronic disease lasting several weeks to months. *Acanthamoeba* GAE generally affects persons who are immunosuppressed from a variety of causes (e.g., HIV/AIDS, diabetes, organ transplantation). However, a few cases have been described in individuals with no obvious signs of immunosuppression. Initial symptoms of *Acanthamoeba* GAE may include headache, photophobia, and stiff neck accompanied by positive Kernig's and Brudzinski's signs. Other symptoms may include nausea, vomiting, low-grade fever, muscle aches, weight loss, mental-state abnormalities, lethargy, dizziness, loss of balance, cranial nerve palsies, other visual disturbances, hemiparesis, seizures, and

coma. Once the disease progresses to the acute stage, it is generally fatal within weeks or months. However, a few patients have survived this infection.

Laboratory criteria for case classification

Detection of *Acanthamoeba* spp.

- Organisms in CSF, biopsy, or tissue specimens;

OR

- Nucleic acid (e.g., polymerase chain reaction) in CSF, biopsy, or tissue specimens;

OR

- Antigen (e.g., direct fluorescent antibody) in CSF, biopsy, or tissue specimens.

Case classification

Confirmed: A clinically compatible illness in a person with laboratory evidence. When available, species designation and molecular characterization (e.g., genotype) should be reported.

Comments

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

Acanthamoeba Keratitis

Clinical description

Acanthamoeba keratitis is a local infection of the cornea (outer layer of the visual pathway of the eye) caused by a microscopic, free-living ameba belonging to the genus *Acanthamoeba*. Symptoms include foreign body sensation, photophobia, decreased visual acuity, tearing, pain, and redness of the eye. It occurs most typically among health, contact lens users, but can occur in anyone. Although treatable with topical medications, affected individuals are at risk for permanent visual impairment or blindness. *Acanthamoeba* organisms are ubiquitous in nature and can be found in bodies of water (e.g., lakes and oceans), soil, and air.

Laboratory criteria for case classification

Confirmatory:

Detection of *Acanthamoeba* spp.

- Organisms in corneal scraping or biopsy specimens;

OR

- Nucleic acid (e.g., polymerase chain reaction) in corneal scraping or biopsy specimens;

OR

- Antigen (e.g., direct fluorescent antibody) in corneal scraping, or biopsy specimens.

Presumptive:

Identification of *Acanthamoeba* trophozoites or cysts using confocal microscopy

Case classification

Confirmed: A clinically compatible illness in a person with confirmatory laboratory evidence. When available, species designation and molecular characterization (e.g., genotype) should be reported.

Probable: A clinically compatible illness in a person with presumptive laboratory evidence.

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! Anthrax

Merlin reporting code = 02200
Case report form (CRF): N/A
CONTACT BUREAU OF EPIDEMIOLOGY

Clinical description

An illness with acute onset characterized by several distinct clinical forms, including the following:

- 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.
- 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.
- Gastrointestinal: Severe abdominal pain and tenderness, nausea, vomiting, hematemesis, bloody diarrhea, anorexia, fever, absominal swelling and septicemia.
- Oropharyngeal: A painless mucosal lesion in the oral cavity or oropharynx, cervical adenopathy and edema, pharyngitis, fever and possibly septicemia.
- Meningeal: Fever, convulsions, coma, or meningeal signs. Signs of another form will likely be evident as this syndrome is usually secondary to the above syndromes.

Laboratory criteria for case classification

Confirmatory:

- Isolation of *Bacillus anthracis* from a clinical specimen by the Laboratory Response Network (LRN);

OR

- Demonstration of *B. anthracis* antigens in tissues by immunohistochemical staining using both *B. anthracis* cell wall and capsule monoclonal antibodies;

OR

- Evidence of a four-fold rise in antibodies to protective antigen between acute and convalescent sera or a fourfold change in antibodies to protective antigen in paired convalescent sera using Centers for Disease Control and Prevention (CDC) quantitative anti-PA IgG ELISA testing;

OR

- Documented anthrax environmental exposure AND evidence of *B. anthracis* DNA (for example, by LRN-validated polymerase chain reaction) in clinical specimens collected from a normally sterile site (such as blood or CSF) or lesion of other affected tissue (skin, pulmonary, reticuloendothelial, or gastrointestinal).

Presumptive:

- Evidence of *B. anthracis* DNA (for example, by LRN-validated polymerase chain reaction) in clinical specimens collected from a normally sterile site (such as blood or CSF) or lesion of other affected tissue (skin, pulmonary, reticuloendothelial, or gastrointestinal);

OR

- Positive result on testing of clinical serum specimens using the Quick ELISA Anthrax-PA kit;

OR

- Detection of Lethal Factor (LF) in clinical serum specimens by LF mass spectrometry;

OR

- Positive result on testing of culture from clinical specimens with the RedLine Alert test.

Case classification

Confirmed: A clinically compatible illness in a person with confirmatory laboratory evidence.

Probable: A clinically compatible illness in a person that does not meet the confirmed case definition AND with one of the following:

- Epidemiological link to a documented anthrax environmental exposure

OR

- Presumptive laboratory evidence.

Suspect: An illness suggestive of one of the known anthrax clinical forms in a person with no confirmatory or presumptive laboratory evidence AND no epidemiologic evidence relating it to anthrax.

Comments

Any isolates from cases or suspected cases must be sent to the Bureau of Public Health Laboratories. Detection of a suspected case is a PUBLIC HEALTH EMERGENCY and requires immediate reporting to the Bureau of Epidemiology at 850-245-4401. This condition has been identified as a potential bioterrorism agent by the CDC.

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Arboviral Diseases (Neuroinvasive and Non-Neuroinvasive)

Merlin reporting code = 06250 California serogroup Virus Neuroinvasive Disease
= 06251 California serogroup Virus Non-Neuroinvasive Disease
= 06220 Eastern Equine Encephalitis Neuroinvasive Disease
= 06221 Eastern Equine Encephalitis Non-Neuroinvasive Disease
= 06230 St. Louis Encephalitis Neuroinvasive Disease
= 06231 St. Louis Encephalitis Non-Neuroinvasive Disease
= 06620 Venezuelan Equine Encephalitis Neuroinvasive Disease !
= 06621 Venezuelan Equine Encephalitis Non-Neuroinvasive Disease !
= 06630 West Nile Virus Neuroinvasive Disease
= 06631 West Nile Virus Non-Neuroinvasive Disease
= 06210 Western Equine Encephalitis Neuroinvasive Disease
= 06211 Western Equine Encephalitis Non-Neuroinvasive Disease
= 06000 Arboviral Disease, Other
Case report form (CRF): *Florida Confidential Vector-borne Disease Infection CRF*
MERLIN EXTENDED DATA REQUIRED

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*.

Clinical description

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 WBC 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 are capable of causing 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

Clinically compatible illness for arboviral disease is defined as follows:

Neuroinvasive disease
An illness characterized by both of the following:
- Meningitis with an increase in WBCs in CSF (pleocytosis), encephalitis, AFP, or other acute signs of central or peripheral neurologic dysfunction, as documented by a physician AND
- Absence of a more likely clinical explanation.

Non-neuroinvasive disease
An illness characterized by all the following:
- Fever (chills) as reported by the patient or a health care provider;
- Absence of neuroinvasive disease, AND
- Absence of a more likely clinical explanation.

Laboratory criteria for case classification

Confirmatory:
Neuroinvasive
- Isolation of virus from, or demonstration of specific viral antigen or nucleic acid in tissue, blood, **CSF**, or other body fluid (e.g., culture, immunohistochemistry [IHC], or polymerase chain reaction [PCR]);

OR
- Four-fold or greater change in virus-specific quantitative antibody titers in paired sera (e.g., enzyme-linked immunosorbent assay [EIA/ELISA], microsphere immunoassay [MIA], or immunofluorescence assay [IFA]);

OR
- Virus-specific IgM antibodies in serum with confirmatory virus-specific neutralizing antibodies in the same or a later specimen (e.g., EIA/ELISA with serum neutralization [SN] or plaque reduction neutralization [PRNT]);

OR
- Virus-specific IgM antibodies (e.g., EIA/ELISA, MIA, or IFA) in CSF with our without a reported pleocytosis, and a negative result for other IgM antibodies in CSF for arboviruses endemic to the region where exposure occurred.

Non-neuroinvasive disease
- Isolation of virus from, or demonstration of specific viral antigen or nucleic acid in, tissue, blood, or other body fluid, **excluding CSF**,

OR
- Four-fold or greater change in virus-specific quantitative antibody titers in paired sera,

OR
- Virus-specific IgM antibodies in serum with confirmatory virus-specific neutralizing antibodies in the same or a later specimen.

Presumptive:
Neuroinvasive and non-neuroinvasive disease
- Virus-specific IgM antibodies (e.g., EIA/ELISA, MIA, or IFA) in serum but with no other testing for arboviruses endemic to the region where exposure occurred.

Neuroinvasive disease only
- Virus-specific IgM antibodies (e.g., EIA/ELISA, MIA, or IFA) in CSF but with no other testing for arboviruses endemic to the region where exposure occurred.

Note that in Florida, West Nile virus (WNV) and St. Louis encephalitis virus (SLEV) are endemic and testing should be performed for both viruses. Dengue EIA/ELISA or PCR is recommended in non-neuroinvasive disease cases to rule out local dengue introductions. Chikungunya testing may also be recommended for some non-neuroinvasive disease cases.

Case classification

Confirmed:

Neuroinvasive disease

Illness clinically compatible with neuroinvasive disease in a person with confirmatory laboratory evidence.

Non-neuroinvasive disease

Illness clinically compatible with non-neuroinvasive disease in a person with confirmatory laboratory evidence.

Probable:

Neuroinvasive disease

Illness clinically compatible with neuroinvasive disease in a person with presumptive laboratory evidence.

Non-neuroinvasive disease

Illness clinically compatible with non-neuroinvasive disease in a person with presumptive laboratory evidence.

Comments

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 illness onset may not have detectable IgM and testing should be repeated on a convalescent-phase sample to rule out arboviral infection in those with a compatible clinical syndrome.
- **Persistence of IgM antibodies**. Arboviral IgM antibodies may be detected in some patients months or years after their acute infection, 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 (SN or 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 onset of symptoms, and knowledge of potentially cross-reactive arboviruses known to circulate in the geographic area should be considered when interpreting results.
- **Differentiating between dengue and West Nile 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 (CNS) infections.

Acute and convalescent sera from reported cases must be sent to the Bureau of Public Health Laboratories for confirmatory testing.

Notes

For the most recent Surveillance and Control of Selected Arthropod-borne Diseases in Florida Guidebook and additional information about arboviral diseases, please visit: http://www.floridahealth.gov/%5C/diseases-and-conditions/mosquito-borne-diseases/index.html.

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Arsenic Poisoning

Merlin reporting code = 98080
Case report form (CRF): *Acute Arsenic Poisoning CRF*
PAPER CRF REQUIRED

Clinical Description

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 Lab results for urine are reported in µg As/g creatinine (mcg/g creat) and are >15 µg/g creatinine, then results must be converted to µg As/Liter of urine using the following formula and conversion factor.

_____ (µg As/g creat) x _____ (mg creat/dL) x 0.01 = _____ (µg As/Liter urine)
given given calculated

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

Case classification

Confirmed:
A clinically compatible illness in a person with laboratory evidence.

Probable:
A clinically compatible illness in a person with a high index of suspicion (patient's exposure history regarding location and time) or the case is epidemiologically linked to a confirmed case.

Comments

Most cases of arsenic-induced toxicity in humans are due to exposure to inorganic arsenic. Humans may be exposed to organic arsenicals used in agriculture or those found in fish and shellfish. 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 this person is symptomatic, please recommend to have 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.

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Botulism

Merlin reporting code = 00510 (Foodborne) !
= 00511 (Infant)
= 00513 (Wound) !
= 00512 (Other, Unspecified) !
Case report forms (CRFs):
1. *Botulism Alert Summary*
2. *National Outbreak Reporting System CDC Form 52.13* (Foodborne only)
PAPER CRF REQUIRED

Clinical description

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 onset of symptoms 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.

Botulism, Foodborne

Clinical description

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

Laboratory criteria for case classification

- Detection of botulinum toxin in a clinical specimen or food for foodborne botulism

OR

- Isolation of *Clostridium botulinum* from a clinical specimen.

Case classification

Confirmed:

A clinically compatible illness in a person with laboratory evidence or that occurs among persons who ate the same food as persons who have laboratory evidence of botulism.

Probable:

A clinically compatible illness in a person with an epidemiologic link (e.g., ingestion of a home-canned food within the previous 48 hours).

Comments

Note that this is one of the few diseases in which an epi-linked case without laboratory confirmation is considered confirmed.

Botulism, Infant

Clinical description

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

Laboratory criteria for case classification

- Detection of botulinum toxin in stool or serum

OR

- Isolation of *Clostridium botulinum* from stool.

Case classification

Confirmed:

A clinically compatible illness in a person with laboratory evidence, occurring in a child aged less than 1 year.

Botulism, Wound

Clinical description

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

Laboratory criteria for case classification

- Detection of botulinum toxin in serum

OR

- Isolation of *Clostridium botulinum* from wound.

Case classification

Confirmed:

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

Probable:

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

Botulism, Other

Clinical description

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

- Detection of botulinum toxin in clinical specimen

OR

- Isolation of *Clostridium botulinum* from clinical specimen.

Case classification

Confirmed: A clinically compatible illness in a person with laboratory evidence in a patient aged greater than or equal to 1 year who has no history of ingestion of suspect food and has no wounds.

Specimens (food or clinical) must be sent to Bureau of Public Health Laboratories for laboratory diagnosis (toxin testing) from suspected cases of botulism and must be cleared through the Bureau of Epidemiology (850) 245-4401. Heptavalent botulinum antitoxin is available through the Bureau at the above telephone number, 24 hours per day. This condition has been identified as a potential bioterrorism agent by the CDC.

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! Brucellosis

Merlin reporting code = 02300
Case report form (CRF): *Brucellosis CRF*
MERLIN EXTENDED DATA REQUIRED

Clinical description

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:

- Isolation of *Brucella* sp. 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:

- *Brucella* total antibody titer ≥160 by standard tube agglutination test (SAT) or *Brucella* microagglutination test (BMAT) in one or more serum specimens obtained after onset of symptoms

OR

- Detection of *Brucella* DNA in a clinical specimen by polymerase chain reaction (PCR).

Case classification

Confirmed:

A clinically compatible illness in a person with confirmatory laboratory evidence.

Probable:

- A clinically compatible illness in a person who is epidemiologically linked to a confirmed case

OR

- A clinically compatible illness in a person with presumptive laboratory evidence.

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.

Any available isolates of the organism must be sent to the Bureau of Public Health Laboratories for confirmation and speciation. This condition has been identified as a potential bioterrorism agent by the CDC.

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Campylobacteriosis

Merlin reporting code = 03840
Case report form (CRF): N/A
NO CRF REQUIRED

Clinical description

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

Laboratory criteria for case classification

Confirmatory:
Isolation of *Campylobacter* spp. in a clinical specimen.

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

AND
- No other enteric pathogen is detected, if tested for (e.g., norovirus, rotavirus, *Cyclospora*, *Cryptosporidium*, *Salmonella*, *Shigella*, *Giardia*),

AND
- No culture result available for *Campylobacter* spp.

Supportive:
Detection of *Campylobacter* spp. in a clinical specimen using a culture-independent diagnostic test.

Case classification

Confirmed:
A person with confirmatory laboratory evidence.

Probable:
- A clinically compatible illness in a person who is epidemiologically linked to a confirmed case

OR
- A clinically compatible illness in a person with presumptive laboratory evidence.

Suspect:
A person with supportive laboratory evidence.

Criteria to distinguish a new case from previous reports

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

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Carbon Monoxide Poisoning

Merlin reporting code = 98600
Case report form (CRF): *Carbon Monoxide Poisoning Reporting Form*
PAPER CRF REQUIRED

Clinical description

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 individuals with the same degree of exposure or the same venous carboxyhemoglobin (COHb) level.

The most common signs and symptoms include headache, nausea, lethargy (or fatigue), 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, dyspnea (shortness of breath), palpitations, seizures, and loss of consciousness.

Laboratory criteria for case classification

Biologic evidence:
Elevated COHb concentration found in blood specimen determined by laboratory tests from a blood specimen or pulse CO-oximetry. Elevated levels of COHb should be interpreted in light of endogenous production, patient smoking status, and exposures to second hand smoke.

Environmental evidence:
Detection of CO from environmental monitoring data as provided by first responders (e.g., fire department, hazmat), environmental consultants, or other sources if deemed reliable.

Case classification

Only CO poisoning cases resulting from **unintentional** exposures are reportable.

Confirmed:

- A person with clinically compatible signs or symptoms and COHb level ≥9%,

OR

- A person with clinically compatible signs or symptoms and environmental evidence,

OR

- A person with COHb level ≥12%.

Probable:

- A person with clinically compatible signs or symptoms and the same environmental exposure as that of a confirmed case,

OR

- A person with clinically compatible signs or symptoms and smoke inhalation secondary to conflagration (explosive fire),

OR

- A person with 9%≤COHb≤12%.

Suspect:
A person with clinically compatible signs or symptoms and a history of recent exposure to CO.

Comments

Reliable CO environmental monitoring data

The acceptance of this 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 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.

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Chikungunya Fever

Merlin reporting code = 06540 (Imported)
= 06540 (Locally Acquired) !
Case report form (CRF): *Florida Confidential Vector-borne Disease Infection CRF*
MERLIN EXTENDED DATA REQUIRED

Clinical description

Acute phase symptoms include a sudden onset of continuous or intermittent high fever (usually >102º 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:

- Isolation of virus from, or demonstration of specific viral antigen or nucleic acid in tissue, blood, CSF, or other body fluid (e.g., culture, immunohistochemistry [IHC], or polymerase chain reaction [PCR]),

OR

- Four-fold or greater change in virus-specific quantitative antibody titers in paired sera (e.g., enzyme-linked immunosorbent assay [EIA/ELISA], microsphere immunoassay [MIA], or immunofluorescence assay [IFA]),

OR

- Virus-specific IgM antibodies in serum with confirmatory virus-specific neutralizing antibodies in the same or a later specimen (e.g., EIA/ELISA with serum neutralization [SN] or plaque reduction neutralization [PRNT]).

Presumptive:

- Virus-specific IgM antibodies (e.g., EIA/ELISA, MIA, or IFA) in serum.

Case classification

Confirmed:
A clinically compatible illness in a person with confirmatory laboratory evidence.

Probable:
A clinically compatible illness in a person with presumptive laboratory evidence.

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 ELISA/IFA) for both viruses.

- **Acute and convalescent sera from reported cases without recent (2 weeks prior to symptom onset) international travel must be sent to the Bureau of Public Health Laboratories for confirmatory testing.**

Notes

For the most recent Surveillance and Control of Selected Arthropod-borne Diseases in Florida Guidebook and additional information about arboviral diseases, please visit: http://www.floridahealth.gov/%5C/diseases-and-conditions/mosquito-borne-diseases/index.html.

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! Cholera (*Vibrio cholerae* Type O1)

Merlin reporting code = 00190 Cholera (*Vibrio cholerae*, Type-O1)
Case report form (CRF): *Cholera and Other Vibrio Illness Surveillance Report*
MERLIN EXTENDED DATA REQUIRED

Clinical description

An illness of variable severity that is characterized by diarrhea and/or vomiting; severity is variable.

Laboratory criteria for case classification

- Isolation of toxigenic (i.e., cholera toxin-producing) *Vibrio cholerae* O1 or O139 from stool or vomitus

OR

- Serologic evidence of recent infection.

Case classification

Confirmed:
A clinically compatible illness in a person with laboratory evidence.

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.

Notes

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

Any available isolates of the organism must be sent to the Bureau of Public Health Laboratories for confirmation and serotyping. This condition has been identified as a potential bioterrorism agent by the CDC.

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Ciguatera Fish Poisoning

Merlin reporting code = 98809
Case report forms (CRFs):
1. *Ciguatera CRF*
2. *National Outbreak Reporting System CDC Form 52.13*
MERLIN EXTENDED DATA REQUIRED

Clinical description

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.

Case classification

Confirmed:
A clinically compatible illness in a person with a history of fish consumption in the 24 hours before onset of symptoms.

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.

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Creutzfeldt-Jakob Disease (CJD)

Merlin reporting code = 04610
Case report form (CRF): *Creutzfeldt-Jakob Disease Worksheet*
PAPER CRF REQUIRED

Clinical description

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

Laboratory criteria for case classification

- Standard neuropathological techniques; and/or immunocytochemically; and/or Western blot confirmed protease-resistant PrP; and/or presence of scrapie-associated fibrils conducted on brain tissue.
- Analysis of tau or 14-3-3 proteins in CSF consistent with prion disease.
- Periodic sharp and slow wave complexes (PSWC) in EEG (Test suggestive but not specific for CJD).

Case classification

Confirmed:
A fatal outcome with a clinically compatible illness diagnosed by standard neuropathological techniques; and/or immunocytochemically; and/or Western blot confirmed protease-resistant PrP; and/or presence of scrapie-associated fibrils.

Probable:
A fatal outcome with a progressive dementia and ≥2 out of the following 4 clinical features:
- Myoclonus
- Visual or cerebellar signs
- Pyramidal/extrapyramidal signs
- Akinetic mutism

AND
- A clinical duration to death <2 years,

WITH
- Typical EEG during clinical illness or a tau or 14-3-3 CSF assay results consistent with prion disease, and
- No alternative diagnosis suggested during routine investigation.

Suspect:
A fatal outcome with a progressive dementia and ≥2 out of the following 4 clinical features:
- Myoclonus
- Visual or cerebellar signs
- Pyramidal/extrapyramidal signs
- Akinetic mutism

AND
- No EEG or atypical EEG and a clinical duration to death of <2 years.

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 the tau and 14-3-3 protein 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: http://www.cjdsurveillance.com.
Please notify Bureau of Epidemiology to assist with case evaluation and laboratory testing.

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Cryptosporidiosis

Merlin reporting code = 13680
Case report form (CRF): *Risk Factor for Cryptosporidium*
NO CRF REQUIRED

Clinical description

An illness characterized by diarrhea, abdominal cramps, loss of appetite (anorexia), nausea, or vomiting. Infected persons may be asymptomatic (asymptomatic persons are not considered clinical compatible).

Laboratory criteria for case classification

Confirmatory:
Evidence of *Cryptosporidium* organisms or DNA in stool, intestinal fluid, tissue samples, biopsy specimens, or other biological sample by certain laboratory methods with a high positive predictive value (PPV), (e.g., direct fluorescent antibody [DFA] test, polymerase chain reaction [PCR], enzyme immunoassay [EIA], or light microscopy of stained specimen).

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

Case classification

Confirmed:
A person with confirmatory laboratory evidence.

Probable:

- A person with presumptive laboratory evidence. When the diagnostic test method on a laboratory test result for *Cryptosporidium* cannot be determined, the case can only be classified as probable.

OR

- A clinically compatible illness (diarrhea must be present) in a person who is epidemiologically linked to a confirmed case.

Comments

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

The disease can be prolonged and life-threatening in severely immunocompromised persons.
When available, species designation and molecular characterization should be reported.

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Cyclosporiasis

Merlin reporting code = 00720
Case report forms (CRFs):
1) *Cyclosporiasis Surveillance CRF*
2) *National Hypothesis Generating Questionnaire*
MERLIN EXTENDED DATA REQUIRED
NATIONAL HYPOTHESIS GENERATING QUESTIONNAIRE REQUIRED for cases with onset dates between May and August

Clinical description

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

Laboratory criteria for case classification

- Demonstration of *Cyclospora* oocysts (by morphologic criteria or by demonstration of sporulation) in stool, duodenal/jejunal aspirates, or small-bowel biopsy

OR

- Demonstration of *Cyclospora* DNA (by polymerase chain reaction) in stool, duodenal/jejunal aspirates, or small-bowel biopsy.

Case classification

Confirmed:
A person with laboratory evidence.

Probable:
A clinically compatible illness in a person who is epidemiologically linked to a confirmed case.

Comments

Permanent slides from reported and suspect cases must be sent to the Bureau of Public Health Laboratories.

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Dengue Fever and Severe Dengue Fever

Merlin reporting code = 06100 Dengue Fever (Imported)
= 06100 Dengue Fever (Locally Acquired) !
= 06101 Dengue Fever, Severe
Case report form (CRF): *Florida Confidential Vector-borne Disease Infection CRF*
MERLIN EXTENDED DATA REQUIRED

Clinical description

Dengue fever

- Fever as reported by the patient or health care provider.
- 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
  - Arthralgia (joint pain)
  - 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)
  - Liver enlargement >2 centimeters

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

- Fever as reported by the patient or health care provider **AND**
- One or more of the following:
  - Hypovolemic shock with respiratory distress
  - Pleural effusion (fluid around the lungs)
  - Pericardial effusion (fluid around the heart)
  - Ascites (abdominal fluid)
  - Elevated hematocrit value for patient age and sex (often with rapid decrease in platelet count)
  - 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
  - Elevated aspartate aminotransferase (AST) or alanine aminotransferase (ALT) ≥1,000 units per liter (U/L)
  - Impaired level of consciousness and/or diagnosis of encephalitis, encephalopathy, or meningitis
  - Heart or other organ involvement including myocarditis, cholecystitis, and pancreatitis

Laboratory criteria for case classification

Confirmatory:

- Isolation of dengue virus from or demonstration of dengue-specific arboviral antigen or genomic sequences in tissue, blood, cerebrospinal fluid (CSF), or other body fluid by culture, polymerase chain reaction (PCR), or immunohistochemistry (IHC);

OR

- Seroconversion from negative for dengue-specific serum IgM or IgG antibody in an acute phase (≤5 days after symptom onset) specimen to positive for dengue-specific serum IgM or IgG antibodies in

a convalescent-phase specimen collected ≥5 days after symptom onset (e.g., enzyme-linked immunosorbent assay [EIA/ELISA], microsphere immunoassay [MIA]), or immunofluorescence assay [IFA]);

OR

- Demonstration of a four-fold 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 dengue viruses and other flaviviruses tested in a convalescent serum sample;

OR

- Virus-specific IgM antibodies (e.g., EIA/ELISA, MIA, or IFA) in CSF **and** a negative result for other IgM antibodies in CSF for arboviruses endemic to the region where exposure occurred.

Presumptive:

- Virus-specific IgM antibodies (e.g., EIA/ELISA, MIA, or IFA) in serum,

AND

- No other testing for arboviruses endemic to the region where exposure occurred,

AND

- More than 90 days from most recent previous dengue infection.

Epidemiological criteria for case classification

Association in time and place (e.g., household member, family member, classmate, or neighbor) with a confirmed or probable case.

Case classification

Confirmed:

A clinically compatible illness in a person with confirmatory laboratory evidence.

Probable:

A clinically compatible illness in a person with presumptive laboratory evidence.

Suspect:

A clinically compatible illness in a person who is epidemiologically linked to a confirmed or probable case.

Comments

Cases meeting the criteria for severe dengue fever (including DHF and DSS) should be reported as severe dengue fever (Merlin reporting code=06101), not as dengue fever (Merlin reporting code=06100).

Dengue re-infection

There are four dengue viruses, or serotypes. Dengue virus (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 dengue viruses. CDC estimates approximately 20% of dengue cases that have been previously exposed to another dengue virus may have transient or no significant elevation in dengue IgM titers, making identification of such cases extremely difficult without PCR testing on the acute sample. An individual 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 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 and severe in cases of dengue fever compared to WNV fever.

Guide to Interpretation and Classification of Common Dengue Laboratory Tests

Laboratory test	Days post-onset of sample collection	Interpretation of positive result	Explanation
Real-time PCR	≤ 5 days	Confirmatory (*Note)	Patient viremic while febrile; days 0-7
IgM (paired specimens, acute and convalescent)	≤ 5 days for acute specimen, > 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 specimens, acute and convalescent)	≤ 5 days for acute specimen, > 5 days for convalescent. (ideally 2 weeks apart)	Confirmatory	Negative IgG in an acute specimen followed by a positive IgG in a convalescent specimen OR 4 fold increase in titer between acute and convalescent specimen and confirmed by PRNT
IgM (single serum specimen)	> 5 days	Probable	IgM can remain positive for ≥ 3 months in cases of acute dengue infection
*Note: Only PCR for dengue or IgM ELISA-based antibody test can be used for diagnosis of dengue in single serum specimens			
NB: Previous flavivirus infections and the high prevalence of dengue IgG antibody in some populations (e.g., those resident in, or long-term visitors of dengue endemic countries) complicate interpretation of dengue serological test results. Therefore, a single serum sample 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.			

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.

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! Diphtheria

Merlin reporting code = 03290
Case report form (CRF): *Diphtheria Worksheet*
PAPER CRF REQUIRED

Clinical description

An upper-respiratory tract illness characterized by sore throat; low-grade fever; and an adherent membrane of the tonsil(s), pharynx, or nose (pseudomembrane).

Laboratory criteria for case classification

- Isolation of *Corynebacterium diphtheriae* from the nose or throat

OR

- Histopathologic diagnosis of diphtheria.

Case classification

Confirmed:

- A clinically compatible illness (pseudomembrane must be present) in a person with laboratory evidence

OR

- A clinically compatible illness (pseudomembrane must be present) in a person who is epidemiologically linked to a confirmed case.

Probable:

A clinically compatible illness (pseudomembrane must be present).

Comments

Respiratory disease caused by non-toxigenic *C. diphtheriae* should be reported as diphtheria.

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

Questions about diphtheria follow-up should be directed to the Department of Health Immunization Program at (850) 245-4342.

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Ehrlichiosis/Anaplasmosis

Merlin reporting code = 08381 Ehrlichiosis/Anaplasmosis, HGE, *A. phagocytophilum*
= 08382 Ehrlichiosis/Anaplasmosis, HME, *E. chaffeensis*
= 08383 Ehrlichiosis/Anaplasmosis, *E. ewigii*
= 08384 Ehrlichiosis/Anaplasmosis, Undetermined
Case report form (CRF): *Tick-Borne Rickettsial Disease CRF*
PAPER CRF REQUIRED

Clinical description

A tick-borne illness characterized by acute onset of fever and one or more of the following symptoms or signs: headache, myalgia, anemia, leukopenia, thrombocytopenia, elevated hepatic transaminases, nausea, vomiting, or rash. Intracytoplasmic bacterial aggregates (morulae) may be visible in the leukocytes of some patients.

Laboratory criteria for case classification

For the purposes of surveillance,

1. ***Ehrlichia chaffeensis* infection (formerly included in the category human monocytic ehrlichiosis [HME]):**

   Confirmatory:
   - Serological evidence of a fourfold change in IgG-specific antibody titer to *E. chaffeensis* antigen by indirect immunofluorescence assay (IFA) between paired serum samples (one taken in first week of illness and a second 2-4 weeks later),

   OR
   - Detection of *E. chaffeensis* DNA in a clinical specimen via polymerase chain reaction (PCR),

   OR
   - Demonstration of *E. chaffeensis* antigen in a biopsy or autopsy sample by immunohistochemistry (IHC),

   OR
   - Isolation of *E. chaffeensis* from a clinical specimen in cell culture.

   Presumptive:
   - Single elevated IgG antibody reactive with *E. chaffeensis* antigen by IFA, enzyme-linked immunosorbent assay (ELISA), dot-ELISA, 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).

2. ***Ehrlichia ewingii* infection (formerly included in the category Ehrlichiosis [unspecified, or other agent]):**

   Confirmatory:
   - Because the organism has never been cultured, antigens are not available. Thus, *E. ewingii* infections may only be diagnosed by molecular detection methods: *E. ewingii* DNA detected in a clinical specimen via amplification of a specific target by PCR.

3. ***Anaplasma phagocytophilum* infection (formerly included in the category human granulocytic ehrlichiosis [HGE]):**

   Confirmatory:
   - Serological evidence of a fourfold change in IgG-specific antibody titer to *A. phagocytophilum* antigen by IFA in paired serum samples (one taken in first week of illness and a second 2-4 weeks later),

   OR

- Detection of *A. phagocytophilum* DNA in a clinical specimen via amplification of a specific target by PCR,

OR

- Demonstration of anaplasmal antigen in a biopsy/autopsy sample by IHC,

OR

- Isolation of *A. phagocytophilum* from a clinical specimen in cell culture.

Presumptive:

- Single elevated IgG antibody reactive with *A. phagocytophilum* antigen by IFA, enzyme-linked immunosorbent Assay (ELISA), dot-ELISA, 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).

4. Human ehrlichiosis/anaplasmosis, undetermined:

Presumptive:

Identification of morulae in the cytoplasm of neutrophils or eosinophils by microscopic examination.

Epidemiological criteria for case classification

Exposure is defined as having been in potential tick habitats within the 14 days before onset of symptoms. A history of a tick bite is not required.

Case classification

Confirmed:

A clinically compatible illness in a person with confirmatory laboratory evidence.

Probable:

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

Suspect:

A person presumptive laboratory evidence but no clinical information available.

Comments

There are at least three species of bacteria, all intracellular, responsible for ehrlichiosis/anaplasmosis in the U.S.: *E. chaffeensis* (found primarily in monocytes), *A. phagocytophilum*, 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.

Four sub-categories of confirmed or probable ehrlichiosis/anaplasmosis should be reported: 1) human ehrlichiosis caused by *E. chaffeensis*, 2) human ehrlichiosis caused by *E. ewingii*, 3) human anaplasmosis caused by *A. phagocytophilum*, or 4) human ehrlichiosis/anaplasmosis, undetermined. Cases reported in the fourth sub-category 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 ELISA 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.

- **Acute and convalescent sera from reported and suspect cases should be acquired on all cases and sent to the Bureau of Public Health Laboratories.**

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Giardiasis, Acute

Merlin reporting code = 00710
Case report form (CRF): N/A
NO CRF REQUIRED

Clinical description

An illness caused by the protozoan *Giardia lamblia* (aka *G. intestinalis* or *G. duodenalis*) and characterized by diarrhea, abdominal cramps, bloating, weight loss, or malabsorption. Asymptomatic infections are common, but asymptomatic cases no longer meet the surveillance case definition as of January 2011.

Laboratory criteria for case classification

- Demonstration of *G. lamblia* cysts in stool;

OR

- Demonstration of *G. lamblia* trophozoites in stool, duodenal fluid, or small-bowel biopsy;

OR

- Demonstration of *G. lamblia* antigen in stool by a specific immunodiagnostic test (e.g., enzyme-linked immunosorbent assay);

OR

- Detection of *Giardia* DNA in stool, intestinal fluid, tissue samples, biopsy specimens or other biological sample.

Case classification

Confirmed:
A clinically compatible illness in a person with laboratory evidence.

Probable:
A clinically compatible illness in a person who is epidemiologically linked to a confirmed case.

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! Glanders *(Burkholderia mallei)*

Merlin reporting code = 02400
Case report form (CRF): N/A
NO CRF REQUIRED

Clinical description

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.

Case classification

Confirmed:
A clinically compatible illness in a person with laboratory evidence.

Comments

Isolates from 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.

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! *Haemophilus influenzae* Invasive Disease

Merlin reporting code= 03841
Case report form (CRF): *Active Bacterial Core Surveillance CRF*
MERLIN EXTENDED DATA REQUIRED (for cases <5 years old)

Clinical description

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:

- 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.

Case classification

Confirmed:
A person with confirmatory laboratory evidence.

Probable:
Meningitis in a person with presumptive laboratory evidence.

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.

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 samples 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 samples are unreliable for diagnosis of *H. influenzae* disease. Sputum cultures are not confirmatory as sputum is not obtained from a sterile site.

- **Isolates from cases in people <5 years old must be sent to the Bureau of Public Health Laboratories for typing to determine if they are type b.**

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Hansen's Disease (Leprosy)

Merlin reporting code = 03090
Case report form (CRF): *Leprosy Surveillance Report*
PAPER CRF REQUIRED

Clinical description

A chronic bacterial disease characterized by the involvement primarily of skin as well as peripheral nerves and the mucosa of the upper airway. Clinical forms of Hansen 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 an infiltration of the 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 (skin biopsy needed for definitive diagnosis):

- Absence of growth of mycobacteria on conventional media (if done) AND
    - 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

Case classification

Confirmed: A clinically compatible illness in a person with confirmatory laboratory evidence.

Suspect: A clinically compatible illness in a person with supportive laboratory evidence.

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, http://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.

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☎ Hantavirus Infection

Merlin reporting code = 07869 Hantavirus Pulmonary Syndrome
= 07870 Hantavirus Infection, Non-Pulmonary Syndrome
Case report form (CRF): *Hantavirus Pulmonary Syndrome CRF*
PAPER CRF REQUIRED

Clinical description

Hantavirus pulmonary syndrome (HPS) is a febrile illness (i.e., temperature >101.0°F or >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 (NPS) 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:

HPS:

- Illness characterized by acute onset of fever >101.0°F or >38.3°C) **and**
- At least one of the following clinical features:
  - Bilateral diffuse interstitial edema
  - Clinical diagnosis of acute respiratory distress syndrome (ARDS)
  - Radiographic evidence of noncardiogenic pulmonary edema
  - An unexplained respiratory illness resulting in death
  - Health care record contains a diagnosis of hantavirus pulmonary syndrome
  - Death certificate lists hantavirus pulmonary syndrome as a cause of death or a significant condition contributing to death

NPS hantavirus infection:

- Illness characterized by acute onset of fever >101.0°F or >38.3°C) **and**
- The **absence** of all the following clinical features:
  - Bilateral diffuse interstitial edema
  - Clinical diagnosis of acute respiratory distress syndrome (ARDS)
  - Radiographic evidence of noncardiogenic pulmonary edema
  - An unexplained respiratory illness resulting in death

Laboratory criteria for case classification

- Detection of hantavirus-specific (Sin Nombre virus [SNV]) IgM or rising titers of hantavirus-specific IgG,

OR

- Detection of hantavirus-specific (SNV) ribonucleic acid (RNA) in clinical specimens (i.e., polymerase chain reaction [PCR]),

OR

- Detection of hantavirus antigen by immunohistochemistry (IHC) in lung biopsy or autopsy tissues.

Case classification

Confirmed:

HPS

Illness clinically compatible with HPS in a person with laboratory evidence.

NPS hantavirus infection
Illness clinically compatible with NPS hantavirus infection in a person with laboratory evidence.

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

Any available specimens must be sent to BPHL for confirmatory testing. Requests for clinical specimens to be sent to the CDC for diagnostic testing must be cleared through the Bureau of Epidemiology and assigned a tracking number; specimens must be routed through BPHL. This condition has been identified as a potential bioterrorism agent by the CDC.

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Hemolytic Uremic Syndrome (HUS)

Merlin reporting code = 42000
Case report form (CRF): N/A
NO CRF REQUIRED

Clinical description

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

Laboratory criteria for case classification

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

- Anemia (acute onset) with microangiopathic changes (i.e., schistocytes, burr cells, or helmet cells) on peripheral blood smear

AND

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

Note: A low platelet count can usually, but not always, be detected early in the illness, but it may then become normal or even high. If a platelet count obtained within 7 days after onset of the acute gastrointestinal illness is not <150,000/mm^3, other diagnoses should be considered.

Case classification

Confirmed:
An acute illness diagnosed as HUS or TTP with laboratory evidence that began within 3 weeks after onset of an episode of acute or bloody diarrhea.

Probable:

- An acute illness diagnosed as HUS or TTP with laboratory evidence in a patient who does not have a clear history of acute or bloody diarrhea in preceding 3 weeks

OR

- An acute illness diagnosed as HUS or TTP, that a) has onset within 3 weeks after onset of acute or bloody diarrhea and b) has laboratory evidence except that microangiopathic changes are not confirmed.

Comments

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 patient meets the case definition for both Shiga toxin-producing *E. coli* (STEC) (Merlin code = 00800) and HUS (Merlin code = 4200), the case should be reported for each of the conditions (as if they were separate cases) in Merlin.

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☎ Hepatitis A

Merlin reporting code = 07010
Case report form (CRF): *Viral Hepatitis CRF*
MERLIN EXTENDED DATA REQUIRED

Clinical description

An acute illness with a) discrete onset of symptoms **and** either b) jaundice **or** elevated serum aminotransferase levels (ALT or AST). Symptoms most commonly include fever, headache, malaise, anorexia, nausea, vomiting, diarrhea, and abdominal discomfort, followed in a few days by jaundice.

Clinical criteria for case classification

Confirmatory:
Discrete onset of symptoms **and**

- Either jaundice

OR

- Elevated ALT or AST.

Presumptive:
Discrete onset of symptoms.

Laboratory criteria for case classification

Positive IgM antibody to hepatitis A virus (anti-HAV).

Case classification

Confirmed:

- A person with confirmatory clinical criteria and laboratory evidence

OR

- A person with confirmatory clinical criteria who is epidemiologically linked to a confirmed case (i.e., household or sexual contact with an infected person during the 15–50 days before the onset of symptoms).

Probable:
A person with presumptive clinical criteria with laboratory evidence in the absence of another known cause.

Comments

Report liver enzyme results for all cases where these are available.

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Hepatitis B, Acute

Merlin reporting code = 07030
Case report form (CRF): *Viral Hepatitis CRF*
MERLIN EXTENDED DATA REQUIRED

Clinical description

An acute illness with 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.

A documented negative hepatitis B surface antigen (HBsAg) result followed within 6 months by a positive test result (either HBsAg, HBeAg, or HBV DNA including genotype) does not require an acute presentation to meet the surveillance case definition.

Clinical criteria for case classification

Confirmatory:
Discrete onset of symptoms **and**

- Either jaundice

OR

- Elevated liver enzymes (ALT level >100 IU/L).

Presumptive:
Discrete onset of symptoms.

Laboratory criteria for case classification

Confirmatory:
(1) Applicable with confirmatory clinical criteria:

- Positive HBsAg **and**
- If done, positive IgM antibody to hepatitis B core antigen (IgM anti-HBc).

(2) Applicable with no clinical criteria:
Negative HBsAg followed *within 6 months* prior by a positive test result (either HBsAg, hepatitis B e antigen [HBeAg], or HBV DNA including genotype).

Presumptive:
(1) Positive IgM antibody to hepatitis B core antigen (IgM anti-HBc).
(2) Positive HBsAg.
(3) Negative test result other than HBsAg (either IgM anti-HBc, HBeAg, or HBV DNA including genotype) followed *within 6 months* prior by a positive test result (either HBsAg, IgM anti-HBc, HBeAg, or HBV DNA including genotype).

Case classification

Confirmed:

- A person with confirmatory clinical criteria, confirmatory laboratory evidence (1), and no previous diagnosis of chronic hepatitis B

OR

- A person with confirmatory laboratory evidence (2) and no previous diagnosis of chronic hepatitis B.

Probable:

- A person with presumptive clinical criteria, presumptive laboratory evidence (1), and no previous diagnosis of chronic hepatitis B,

OR

- A person with presumptive clinical and presumptive laboratory evidence (2) who is epidemiologically linked to a confirmed acute hepatitis B case and has no previous diagnosis of chronic hepatitis B,

OR

- A person with presumptive laboratory evidence (3) and no previous diagnosis of chronic hepatitis B.

Comments

Report liver enzyme results for all cases in Merlin.

Notes

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

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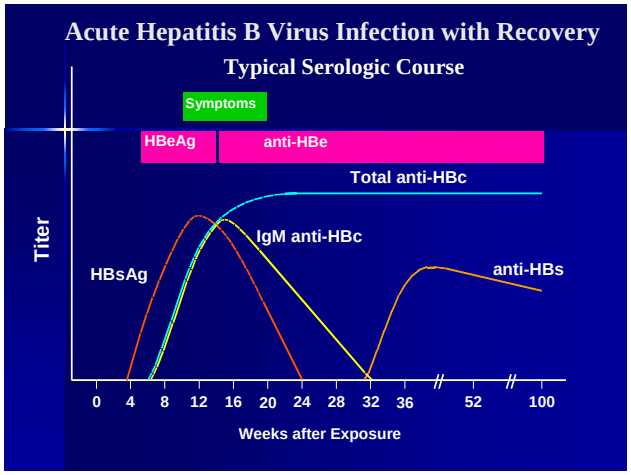


Hepatitis B, Chronic

Merlin reporting code = 07032
Case report form (CRF): *Viral Hepatitis CRF*
MERLIN EXTENDED DATA REQUIRED

Clinical description

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.

Laboratory criteria for case classification

Confirmatory:

- Negative IgM antibodies to hepatitis B core antigen (IgM anti-HBc) AND one of the following:
  - Positive hepatitis B surface antigen (HBsAg)
  - Positive hepatitis B e antigen (HBeAg)
  - Positive HBV DNA (including quantitative, qualitative and genotype testing)

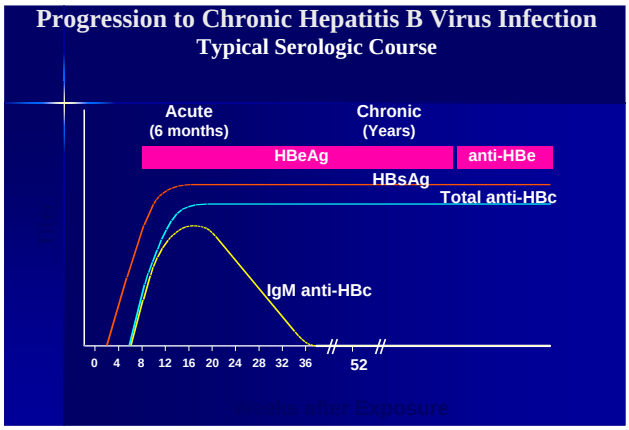
OR

- Any combination of the following tests performed at least 6 months apart:
  - Positive HBsAg
  - Positive HBeAg
  - Positive HBV DNA (including quantitative, qualitative, and genotype testing).

Presumptive:

Any single positive result:

- HBsAg
- HBeAg
- HBV DNA (including quantitative, qualitative, and genotype testing).



Case classification

Confirmed:

A person with confirmatory laboratory evidence.

Probable:

A person with presumptive laboratory evidence that does not meet the case definition for acute hepatitis B.

Notes

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

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Hepatitis B, Perinatal

Merlin reporting code = 07744
Case report form (CRF): *Viral Hepatitis CRF*
MERLIN EXTENDED DATA REQUIRED

Clinical description
Perinatal hepatitis B in newborns can range from asymptomatic to fulminant hepatitis.

Demographic criteria for case classification
An infant aged >1–24 months who was born in the U.S. or in a U.S. territory to an hepatitis B surface antigen (HBsAg)-positive mother.

Laboratory criteria for case classification
Positive hepatitis B surface antigen (HBsAg).

Case classification
Confirmed:
An infant meeting the demographic criteria with laboratory evidence.

Comments
Infants born to HBsAg-positive mothers should receive hepatitis B immune globulin (HBIG) and the first dose of hepatitis B vaccine within 12 hours of birth, followed by the second and third doses of 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 3 to 6 months following completion of the vaccine series. 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.

Notes
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 surface antigen in a pregnant woman (Merlin reporting code=07039).

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Hepatitis B, Surface Antigen in Pregnant Women

Merlin reporting code = 07039
Case report form (CRF): *Viral Hepatitis CRF*
MERLIN EXTENDED DATA REQUIRED

Clinical description

Acute or chronic illness, regardless of symptomatology, in which a woman tests positive for hepatitis B surface antigen (HBsAg) during pregnancy.

Laboratory criteria for case classification

Positive Hepatitis B surface antigen (HBsAg) result.

Case classification

Confirmed:
A pregnant woman with laboratory evidence.

Comments

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

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Hepatitis C, Acute

Merlin reporting code = 07051
Case report form (CRF): *Viral Hepatitis CRF*
MERLIN EXTENDED DATA REQUIRED

Clinical description

An acute illness with discrete onset of symptoms consistent with acute viral hepatitis (e.g., fever, headache, malaise, anorexia, nausea, vomiting, diarrhea, and abdominal discomfort pain) **and** either jaundice **or** serum alanine aminotransferase level >200 IU/L during the period of acute illness.

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

Laboratory criteria for case classification

Confirmatory:

1. Applicable with clinically compatible illness:
   One of the following:
   - Positive nucleic acid test (NAT) for HCV RNA (including quantitative, qualitative, or genotype testing)
   - Positive HCV recombinant immunoblot assay (HCV RIBA)
   - Positive HCV antigen(s) test (if and when an FDA-approved test for HCV antigen(s) is available)

   And **both** of the following (if done):
   - Negative IgM antibody to hepatitis A virus
   - Negative IgM antibody to hepatitis B core antigen.

2. Applicable without clinically compatible illness:
   A documented negative anti-HCV result followed *within 12 months* by a positive test result.

Presumptive:
Positive anti-HCV antibody.

Case classification

Confirmed:

- A clinically compatible illness in a person with confirmatory laboratory evidence (1) and no previous diagnosis of chronic hepatitis C

OR

- A person with confirmatory laboratory evidence (2) and no previous diagnosis of chronic hepatitis C.

Probable:
A clinically compatible illness in a person with presumptive laboratory evidence and no previous diagnosis of chronic hepatitis C.

Criteria to distinguish a new case from previous reports

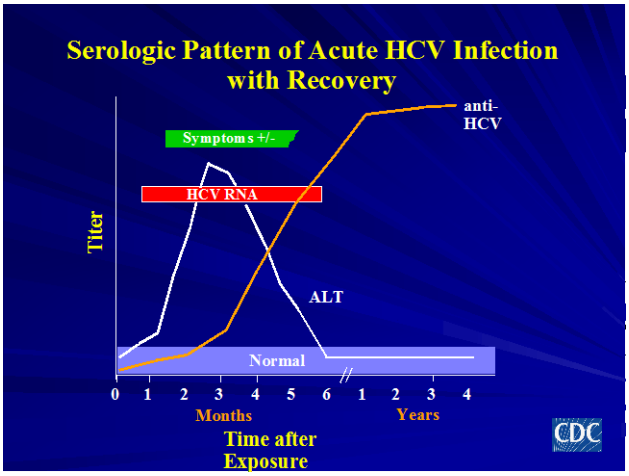
A new case is an incident case (new acute or newly diagnosed chronic) that has not previously been reported meeting case criteria for hepatitis C. A new probable acute case may be re-classified as confirmed acute case if a positive NAT for HCV RNA or a positive HCV antigen(s) test is reported within

the same year. A confirmed acute case may be classified as a confirmed chronic case if a positive NAT for HCV RNA or a positive HCV antigen is reported one year or longer after acute case onset. A confirmed acute case may not be reported as a probable chronic case (i.e., HCV antibody positive, but with an unknown HCV RNA NAT or antigen status). States and territories may choose to track resolved hepatitis C cases in which spontaneous clearance of infection or sustained viral response to treatment are suspected to have occurred before national notification or are known to have occurred after national notification as a confirmed or probable case to CDC.

Comments

Report liver enzyme results for all cases in Merlin.

Up to 20% of acute hepatitis C cases will be anti-HCV negative when reported and will be classified as non-A, non-B hepatitis 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.



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

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Hepatitis C, Chronic

Merlin reporting code = 07054
Case report form (CRF): *Viral Hepatitis CRF*
MERLIN EXTENDED DATA REQUIRED

Clinical description

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.

Laboratory criteria for case classification

Confirmatory:

One of the following:

- Positive nucleic acid test (NAT) for HCV RNA (including quantitative, qualitative, or genotype testing)
- Positive HCV recombinant immunoblot assay (HCV RIBA)
- Positive HCV antigen(s) test (if and when an FDA-approved test for HCV antigen(s) is available)

And **both** of the following:

- Absence of negative NAT for HCV RNA, if done, AND
- Absence of negative HCV antigen(s) test (if and when an FDA-approved test for HCV antigen(s) is available), if done.

Presumptive:

HCV antibody (anti-HCV) antibody positive and **both** of the following:

- Absence of negative NAT for HCV RNA, if done
- Absence of negative HCV antigen(s) test (if and when an FDA-approved test for HCV antigen(s) is available), if done.

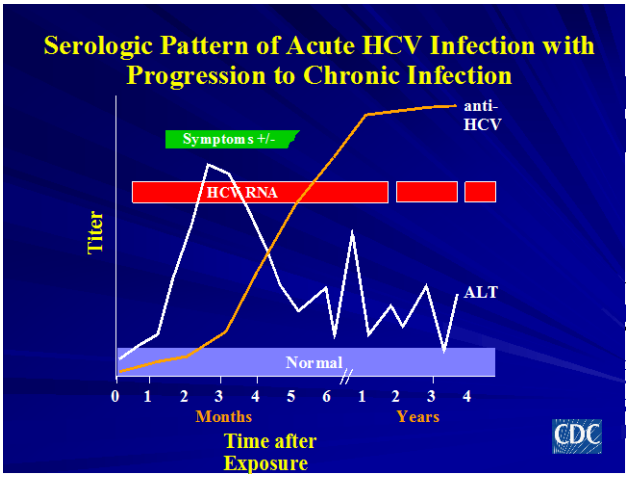
Case classification

Confirmed:

A person with confirmatory laboratory evidence that does not meet the case definition for acute hepatitis C.

Probable:

A person with presumptive laboratory evidence that does not meet the case definition for acute hepatitis C.



Notes

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

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Hepatitis C, Perinatal

Merlin reporting code = 07058
Case report form (CRF): *Viral Hepatitis CRF*
MERLIN EXTENDED DATA REQUIRED

Clinical description
Perinatal hepatitis C in newborns can range from asymptomatic to fulminant hepatitis.

Demographic criteria for case classification
An infant aged 1–24 months who was born in the U.S. or in a U.S. territory to a hepatitis C virus (HCV)-positive mother.

Laboratory criteria for case classification
Positive nucleic acid test (NAT) for HCV RNA (including quantitative, qualitative, or genotype testing

Case classification
Confirmed:
An infant meeting the demographic criteria with laboratory evidence.

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.

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Hepatitis D

Merlin reporting code = 07052
Case report form (CRF): *Viral Hepatitis CRF*
MERLIN EXTENDED DATA REQUIRED

Clinical description

An acute viral illness with a) discrete onset of symptoms **and** b) 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:
Discrete onset of symptoms **and**

- Either jaundice

OR

- Elevated liver enzymes.

Presumptive:
Discrete onset of symptoms.

Laboratory criteria for case classification

One of the following as evidence of HBV infection:

- Positive IgM antibody to hepatitis B core antigen (IgM anti-HBc)

OR

- Positive hepatitis B surface antigen (HBsAg)

And one 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).

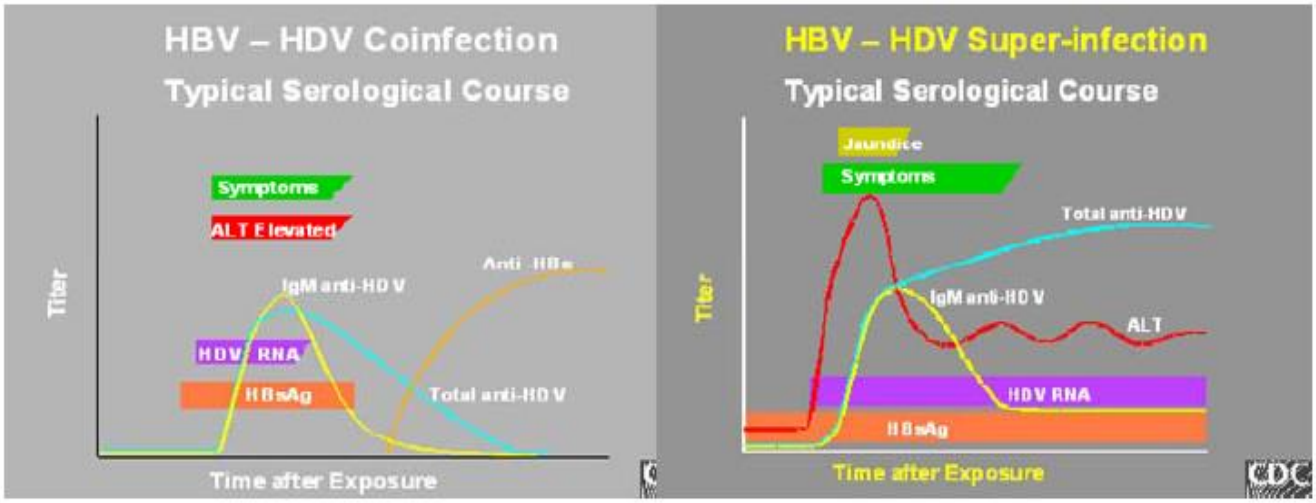
Case classification

Confirmed:
A person with confirmatory clinical criteria and laboratory evidence.

Probable:
A person with presumptive clinical criteria and laboratory evidence.

Comments

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



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Hepatitis E

Merlin reporting code = 07053
Case report form (CRF): *Viral Hepatitis CRF*
MERLIN EXTENDED DATA REQUIRED

Clinical description

An acute viral illness with a) discrete onset of symptoms **and** b) 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:
Discrete onset of symptoms **and**

- Either jaundice

OR

- Elevated liver enzymes.

Presumptive:
Discrete onset of symptoms.

Laboratory criteria for case classification

One 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 meets all the following criteria:

- Negative IgM antibody to hepatitis A virus (anti-HAV);
- Negative IgM antibody to hepatitis B core antigen (IgM anti-HBc) , if done;
- Negative hepatitis B surface antigen (HBsAg), if done; **and**
- Negative hepatitis C virus antibody (anti-HCV), if done.

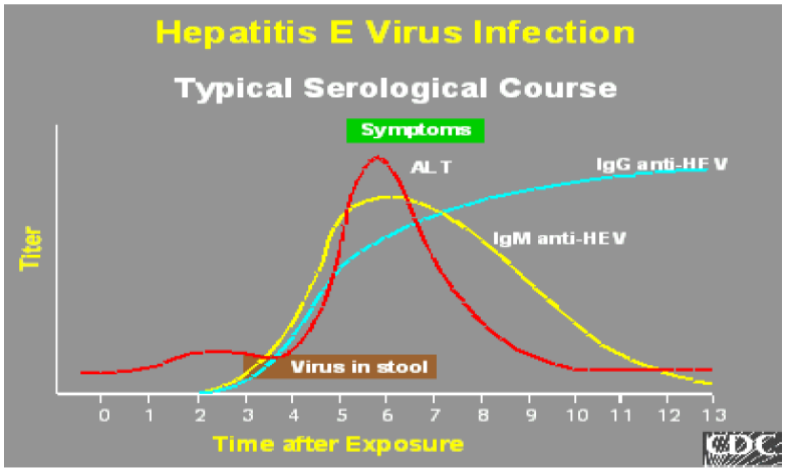
Case classification

Confirmed:
A person with confirmatory clinical criteria and laboratory evidence.

Probable:
A person with presumptive clinical criteria and laboratory evidence.

Comments

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



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Hepatitis G

Merlin reporting code = 07059
Case report form (CRF): *Viral Hepatitis CRF*
MERLIN EXTENDED DATA REQUIRED

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

Laboratory criteria for case classification
Positive HGV RNA.

Case classification
Confirmed:
A person with laboratory evidence.

Comments
The pathogenic role of HGV remains under investigation. HGV is mainly transmitted via blood. Infection has been documents in individuals 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 liver enzymes results for all cases where these are available.

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Herpes B Virus, Possible Exposure (B Virus)

Merlin reporting code = 07103
Case report form (CRF): N/A
MERLIN EXTENDED DATA REQUIRED

Clinical description

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.

Laboratory criteria for case classification

N/A

Case classification

Confirmed:
Any person exposed to bodily fluids or tissue from an NHP capable of transmitting HBV via a bite, scratch, mucous membrane, or environmental exposure.

Comments

All monkey bites, including those where rabies post-exposure prophylaxis (PEP) is not recommended, should be reported as herpes B virus, possible exposure (Merlin reporting code=07103).

Exposures where rabies PEP is also recommended should be reported as herpes B virus, possible exposure (Merlin reporting code=07103) **and** rabies, possible exposure (Merlin reporting code=07101).

Resources

- National B Virus Lab: http://www2.gsu.edu/~wwwvir/index.html (titer testing is fee-based and can be ordered directly by health care providers)
- Guidelines for Prevention of and Therapy for Exposure to B Virus (Cercopithecine Herpesvirus 1): http://cid.oxfordjournals.org/content/35/10/1191.full

Notes

Macaque monkeys are the primary reservoir for HBV, however other species of NHP that are in direct contact with macaque monkeys can be infected. Monkey bites that involve NHP species other than macaques do not require HBV prophylaxis and serologic follow-up unless the NHP has had previous direct exposure to macaques. **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 more than five days after an exposure is unknown. Similar to 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.

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! Influenza A, Novel or Pandemic Strains
Generic Case Definition

Merlin reporting code = 48790
Case report form (CRF): *Human Infection with Novel Influenza A Virus CRF*
CONTACT BUREAU OF EPIDEMIOLOGY

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.

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

Laboratory criteria for case classification
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 Centers for Disease Control and Prevention (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.

Epidemiological criteria for case classification
Criteria for epidemiologic linkage:
- The patient has had contact with one or more persons who either have or had the disease AND
- Transmission of the agent by the usual modes of transmission is plausible.

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

Case classification
Confirmed:
A person infected with a novel influenza A virus confirmed by CDC's influenza laboratory or using methods agreed upon by CDC and CSTE.

Probable:
A person that meets the clinical criteria and is epidemiologically linked to a confirmed case, but for whom no laboratory testing for influenza virus infection has been performed or test results are inconclusive for a novel influenza A virus infection.

Suspect:
A person that meets the clinical criteria, pending laboratory confirmation. Any case of human infection with an influenza A virus that is different from currently circulating human influenza H1 and H3viruses is classified as a suspected case until the confirmation process is complete.

Comments

THIS IS A GENERIC CASE DEFINTION 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 http://www.floridahealth.gov/diseases-and-conditions/influenza/index.html or the CDC Influenza web site: http://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.

Specimens from all cases must be sent to the Bureau of Public Health Laboratories for confirmation. Approval to perform testing must be obtained through the Bureau of Epidemiology, available 24/7 via phone 850-245-4401.

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☎ Influenza-Associated Pediatric Mortality

Merlin reporting code = 48700
Case report form (CRF): *Influenza-Associated Pediatric Mortality CRF*
PAPER CRF REQUIRED

Clinical Description

An influenza-associated death is defined for surveillance purposes as a death resulting from a clinically compatible illness that was confirmed to be influenza by an appropriate laboratory or rapid diagnostic test. There should be no period of complete recovery between the illness and death. Influenza-associated deaths in all persons aged <18 years should be reported.
A death should not be reported if:
1. There is no laboratory confirmation of influenza virus infection.
2. The influenza illness is followed by full recovery to baseline health status prior to death.
3. The death occurs in a person 18 years or older.
4. After review and consultation, there is an alternative agreed upon cause of death.

Laboratory criteria for case classification

Laboratory testing for influenza virus infection 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 at least one of the following:

- Influenza virus isolation in cell culture from respiratory specimens,
- Reverse-transcriptase polymerase chain reaction (RT-PCR) testing of respiratory specimens,
- Immunofluorescent antibody staining (direct or indirect) of respiratory specimens,
- Rapid influenza diagnostic testing of respiratory specimens,
- 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*.

Case classification

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

Comments

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

✉ **Isolates from all cases must be sent to the Bureau of Public Health Laboratories for confirmation.**

Please notify the Bureau of Epidemiology when investigating a case.

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Lead Poisoning

Merlin reporting code = 94890
Case report form (CRF): N/A
MERLIN EXTENDED DATA REQUIRED

Clinical description

Often asymptomatic, but may result in impaired neurobehavioral development, low IQ, slow nerve conduction, peripheral neuropathies, and encephalopathy.

Laboratory criteria for case classification

Confirmatory:

- Blood lead level ≥10 micrograms per deciliter (µg/dL) measured from a venous specimen

OR

- Blood lead level ≥10 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 ≥10 µg/dL measured from a single capillary specimen or unknown specimen (i.e., venous or capillary).

Case classification

Confirmed:
A person with confirmatory laboratory evidence.

Suspect:
A person with supportive laboratory evidence.

Comments

1. Only report lead poisoning in Merlin once per lifetime.
2. Florida Department of Health (FDOH) considers all blood lead tests to be evidence of a suspicion of lead poisoning, thus they must be reported to the FDOH by laboratories, hospitals or physicians who conduct on-site blood lead analysis. Requiring these entities to report all blood lead results to FDOH enables the Lead Poisoning Prevention Program (LPPP) to assess disease prevalence rates and screening rates. This provides the necessary data to identify risk areas in Florida and design an effective prevention program. Although all blood lead test results must be reported by laboratories, hospitals or physicians who conduct on-site blood lead analysis, county health department disease investigators should only report **suspect and confirmed cases in Merlin**. In addition, lead poisoning disease investigations should be performed **for children 0 to 15 years old** whose test results meet the definition of confirmed as described above in laboratory criteria.
3. The reportable level of lead poisoning in Florida is the same for children as for adults (see laboratory criteria above).
4. Once a child or adult has had an elevated blood lead level test result of ≥10 µg/dL, if he or she has additional follow-up test results, regardless of the test type, these confirmed results are to be included with initial case information and not reported as a new case.
5. Capillary tests with an initial blood lead level of ≥10 µg/dL with a venous or capillary follow-up test result ≥10 µg/dL, taken ***within 12 weeks*** of one another should be classified as a confirmed case, not a suspect case. If a case is initially reported as suspect (see case definition above) and then a

confirmatory venous or capillary test result is received, the suspect case needs to be updated to a confirmed case.

6. ***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: http://www.floridahealth.gov/healthy-environments/lead-poisoning/_documents/childhood-leadpoisoning-screening-casemanagement-guide.pdf.

   Questions regarding disease investigations for lead poisoning cases should be directed to the Department of Health, Bureau of Epidemiology at 850-245-4401.

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Legionellosis

Merlin reporting code = 48280
Case report form (CRF): *Legionellosis CRF*
MERLIN EXTENDED DATA REQUIRED

Clinical description

Legionellosis is associated with two clinically and epidemiologically distinct illnesses: Legionnaires disease, which is characterized by fever, myalgia, cough, and clinical or radiographic pneumonia, and Pontiac fever, a milder illness without pneumonia.

Laboratory criteria for case classification

Confirmatory:

- Isolation of any *Legionella* organism from respiratory secretions, lung tissue, pleural fluid, or other normally sterile fluid,

OR

- Detection of *Legionella pneumophila* serogroup 1 antigen in urine using validated reagents,

OR

- Fourfold or greater rise in specific serum antibody titer to *Legionella pneumophila* serogroup 1 using validated reagents.

Supportive:

- Fourfold or greater rise in antibody titer to specific species or serogroups of *Legionella* other than *L. pneumophila* serogroup 1 (e.g., *L. micdadei*, *L. pneumophila* serogroup 6);

OR

- Fourfold or greater rise in antibody titer to multiple species of *Legionella* using pooled antigen and validated reagents;

OR

- Detection of specific *Legionella* antigen or staining of the organism in respiratory secretions, lung tissue, or pleural fluid by direct fluorescent antibody (DFA) staining, immunohistochemistry (IHC), or other similar method, using validated reagents;

OR

- Detection of *Legionella* species by a validated nucleic acid assay.

Case classification

Confirmed:
A clinically compatible illness in a person with confirmatory laboratory evidence.

Suspect:
A clinically compatible illness in a person with supportive laboratory evidence.

Comments

The previously used category of “probable case,” which was based on a single IFA titer, lacks specificity for surveillance and is no longer used.

Travel-associated: A case that has a history of spending at least one night away from home, either in the same country of residence or abroad, in the two weeks before onset of illness. **Indicate if the case is travel-associated in the case notes.**

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Leptospirosis

Merlin reporting code = 10090
Case report form (CRF): *Leptospirosis CRF*
PAPER CRF REQUIRED

Clinical description

An illness characterized by fever within the past two weeks, AND

- At least **two** of the following: myalgia, headache, jaundice, conjunctival suffusion without purulent discharge, or rash (i.e., maculopapular or petechial)

OR

- At least **one** of the following: aseptic meningitis, GI symptoms (e.g., abdominal pain, nausea, vomiting, diarrhea), pulmonary complications (e.g., cough, breathlessness, hemoptysis), cardiac arrhythmias, ECG abnormalities, renal insufficiency (e.g., anuria, oliguria), hemorrhage (e.g., intestinal, pulmonary, hematuria, hematemesis), or 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:

- Isolation of *Leptospira* from a clinical specimen,

OR

- Fourfold or greater increase in *Leptospira* agglutination titer between acute- and convalescent-phase serum specimens,

OR

- Demonstration of *Leptospira* in a clinical specimen by direct immunofluorescence,

OR

- *Leptospira* agglutination titer of ≥800 by Microscopic Agglutination Test (MAT) in one or more serum specimens,

OR

- Detection of pathogenic *Leptospira* DNA (e.g., by polymerase chain reaction [PCR]) from a clinical specimen.

Presumptive:

- *Leptospira* MAT titer of ≥200 but <800 from one or more serum specimens,

OR

- Demonstration of anti-*Leptospira* antibodies in a clinical specimen by indirect immunofluorescence,

OR

- Demonstration of *Leptospira* in a clinical specimen by darkfield microscopy,

OR

- Detection of IgM antibodies against Leptospira in an acute phase serum specimen.

Case classification

Confirmed:

A person with confirmatory laboratory evidence.

Probable:

- A clinically compatible illness in a person with presumptive laboratory evidence

OR

- A clinically compatible illness in a person who is epidemiologically linked to a confirmed or probable case or exposure event (adventure race, triathlon, flooding, infected animal, etc. with associated laboratory-confirmed cases).

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.

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☎ Listeriosis

Merlin reporting code = 02700
Case report form (CRF): *Listeria CRF* (Spanish)
MERLIN EXTENDED DATA REQUIRED
PAPER CRFREQUIRED

Clinical description

In adults, invasive disease caused by *Listeria monocytogenes* manifests most commonly as meningitis or bacteremia; infection during pregnancy may result in fetal loss through miscarriage or stillbirth, or neonatal meningitis or bacteremia. Other manifestations can also be observed.

Laboratory criteria for case classification

- Isolation of *L. monocytogenes* from a normally sterile site (e.g., blood or CSF or, less commonly, joint, pleural, or pericardial fluid)

OR

- In the setting of miscarriage or stillbirth, isolation of *L. monocytogenes* from placental or fetal tissue.

Case classification

Confirmed:
A clinically compatible illness in a person with laboratory evidence.

Comments

The usefulness of other laboratory methods such as fluorescent antibody testing or PCR to diagnose invasive Listeriosis has not been established.

✉ **Isolates from all cases must be sent to the Bureau of Public Health Laboratories.**

Notes

Meningitis due to *Listeria monocytogenes* should be reported as Listeriosis (02700) (and not under the disease code meningitis, bacterial, cryptococcal, mycotic).

In situations where a baby is infected from the mother during pregnancy, a separate case should be entered into Merlin and reported for both the baby and the mother.

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Lyme Disease

Merlin reporting code = 06959
Case report form (CRF): *Lyme Disease CRF*
MERLIN EXTENDED DATA REQUIRED

This surveillance case definition was developed for national reporting of Lyme disease; it is not intended to be used in clinical diagnosis.

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

- If symptom onset was within 30 days of laboratory testing OR a physician-diagnosed EM was observed, see Acute Lyme Disease.

- If symptom onset was more than 30 days prior to laboratory testing and no physician-diagnosed EM was observed, see Late-Manifestation Lyme Disease.

Epidemiological criteria for case classification

Exposure is defined as having been in wooded, brushy or grassy areas (i.e., potential tick habitats) in a county in which Lyme disease is endemic in the 30 days prior to symptom onset. A history of tick bite is not required. For surveillance purposes, Lyme disease is considered to be endemic in Florida.

Acute Lyme Disease

Clinical description

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 diagnosis of EM must be made by a physician. Laboratory confirmation is recommended for persons with no known exposure.

- EM must be physician-diagnosed

OR

- Physician must diagnose Lyme disease in the absence of EM and symptom onset must be within 30 days of laboratory testing with no late clinical manifestations.

Laboratory criteria for case classification

- EIA or IFA screen that is positive or indeterminate AND
- IgM western blot is positive for 2 or more of the 3 following bands: 21-25 kDa (OspC), 39 kDa (BmpA), or 41 kDa (Fla) AND
- Symptom onset was within 30 days of laboratory testing

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

- CSF antibody positive for *B. burgdorferi* by EIA or IFA, when the titer is HIGHER than it was in serum

OR

- Culture positive for *B. burgdorferi*.

Late-Manifestation Lyme Disease

Clinical description

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.

- *Nervous system*. Any of the following, alone or in combination: Lymphocytic meningitis; cranial neuritis, particularly facial palsy (may be bilateral); radiculoneuropathy; or, rarely, encephalomyelitis. Encephalomyelitis must be confirmed by demonstration of antibody production against *Borrelia burgdorferi* in the cerebrospinal fluid (CSF), evidenced by a higher titer of antibody in CSF than in serum. Headache, fatigue, paresthesia, or mildly stiff neck alone, are not criteria for neurologic involvement.

- *Cardiovascular system*. Acute onset of high-grade (2nd-degree or 3rd-degree) atrioventricular conduction defects that resolve in days to weeks and are sometimes associated with myocarditis. Palpitations, bradycardia, bundle branch block, or myocarditis alone are not criteria for cardiovascular involvement.

Physician-diagnosed Lyme disease more than 30 days after symptom onset without EM AND with laboratory testing more than 30 days after symptom onset meets the clinical portion of the probable case classification for late-manifestestation Lyme disease.

Laboratory criteria for case classification

- 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

- CSF antibody positive for B. burgdorferi by EIA or IFA, when the titer is HIGHER than it was in serum

OR

- Culture positive for B. burgdorferi.

Case classification

Confirmed:

Acute Lyme disease:

- Physician-diagnosed EM with a known exposure

OR

- Physician-diagnosed EM with laboratory evidence of infection, regardless of exposure,

Late-manifestation Lyme disease:
A person with at least one late manifestation and laboratory evidence of infection.

Probable:

Acute Lyme disease:
Physician-diagnosed acute Lyme disease without EM with symptom onset within 30 days of laboratory testing and laboratory evidence of infection, regardless of exposure.

Late-manifestation Lyme disease:
Physician-diagnosed acute Lyme disease more than 30 days after symptom onset without EM with symptom onset within 30 days of laboratory testing and laboratory evidence of infection.

Suspect:

Acute Lyme disease:

- Physician-diagnosed EM without known exposure

OR

- Laboratory evidence of infection.

Late-manifestation Lyme disease:
Laboratory evidence of infection.

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."

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Malaria

Merlin reporting code = 08460
Case report forms (CRFs):
1. *Malaria Case Surveillance Report*
2. *Indigenous Malaria Investigation Worksheet*
MERLIN EXTENDED DATA REQUIRED

Clinical description

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:

- Detection and specific identification of malaria parasites by microscopy in thick or thin peripheral blood films,

OR

- Detection of unspeciated *Plasmodium* by microscopy in thick or thin peripheral blood films,

OR

- Detection of *Plasmodium* species DNA in a sample of peripheral blood by nucleic acid test (e.g., polymerase chain reaction [PCR] test).

Supportive:

- Detection of circulating malaria-specific antigens using rapid diagnostic test (RDT).

Case classification

Confirmed:
A person (symptomatic or asymptomatic) with confirmatory laboratory evidence, diagnosed in the United States, regardless of whether the person experienced previous episodes of malaria while outside the country.

Suspect:
A person (symptomatic or asymptomatic) with supportive laboratory evidence diagnosed in the United States, regardless of whether the person experienced previous episodes of malaria while outside the country.

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).

A subsequent attack experienced by the same person but caused by a different *Plasmodium* species is counted as an additional case. A subsequent attack experienced by the same person and caused by the same species in the U.S. may indicate a relapsing infection or treatment failure caused by drug resistance.

Permanent slides from all diagnosed and suspected cases must be sent to the Bureau of Public Health Laboratories.

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.

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! Measles (Rubeola)

Merlin reporting code = 05590
Case report form (CRF): *Measles Surveillance Worksheet*
MERLIN EXTENDED DATA REQUIRED

Clinical description

Confirmatory:
A febrile rash illness (temperature does not need to reach ≥101.0°F [>38.3°C] and rash does not need to last ≥3 days).

Presumptive:
An illness characterized by all the following:

- Generalized, maculopapular rash of ≥3 days,
- Temperature ≥101.0°F (≥38.3°C), and
- Cough, coryza, or conjunctivitis.

Laboratory criteria for case classification

- Isolation of measles virus[1] from a clinical specimen,

OR

- Detection of measles virus-specific nucleic acid[1] from a clinical specimen using polymerase chain reaction (PCR),

OR

- IgG seroconversion[1] or a significant rise in measles IgG antibody[1] level between acute- and convalescent-phase specimens using any evaluated and validated method,

OR

- Positive serologic test for measles IgM antibody[1,2].

[1]Not explained by MMR vaccination during the previous 6-45 days.
[2]Not otherwise ruled out by other confirmatory testing or more specific measles testing in a public health laboratory.

Case classification

Confirmed:

- A person with confirmatory clinical criteria and laboratory evidence

OR

- A person with confirmatory clinical criteria who is epidemiologically linked to a confirmed case.

Probable:
A person with presumptive clinical criteria in the absence of a more likely diagnosis and noncontributory or no measles laboratory testing.

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 epidemiologic link to an internationally-imported case was not identified, but for which viral genetic evidence indicates an imported measles genotype, i.e., a genotype that is not occurring within the 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.

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

Questions about measles follow-up should be directed to the Department of Health Immunization Program at (850) 245-4342.

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! Melioidosis *(Burkholderia pseudomallei)*

Merlin reporting code = 02500
Case report form (CRF): N/A
NO CRF REQUIRED

Clinical description

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

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

Laboratory criteria for case classification

Confirmatory:
Isolation of *Burkholderia pseudomallei* from blood, urine, sputum, pus, throat swabs, or swabs from organ abscesses or skin lesions.

Presumptive:

- Evidence of a fourfold or greater rise in *B. pseudomallei* antibody titer by IHA between acute- and convalescent-phase serum specimens obtained greater than or equal to 2 weeks apart

OR

- Evidence of *B. pseudomallei* DNA (for example, by LRN-validated polymerase chain reaction) in a clinical specimen collected from a normally sterile site (blood) or lesion of other affected tissue (abscesses, wound).

Case classification

Confirmed:
A person with confirmatory laboratory evidence, with or without clinical evidence.

Probable:
A person with presumptive laboratory evidence that meets the clinical description and has one of the following epidemiologic findings:

- History of travel to a melioidosis-endemic region

OR

- Known exposure to *B. pseudomallei* as a result of intentional release or occupational risk (lab exposure).

Comments

✉ **Specimens or isolates from 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.**

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Meningitis, Bacterial or Mycotic

Merlin reporting code = 32090
Case report form (CRF): *Active Bacterial Core Surveillance CRF*
MERLIN EXTENDED DATA REQUIRED

Clinical description

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

- 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*.*** Please 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.** Culture-confirmed *Cryptococcus gattii* meningitis cases should be reported.

Case classification

Confirmed:
A clinically compatible illness in a person with laboratory evidence.

Comments

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

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! Meningococcal Disease

Merlin reporting code = 03630
Case report form (CRF): *Active Bacterial Core Surveillance CRF*
MERLIN EXTENDED DATA REQUIRED

Clinical description

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 a positive blood culture.

Laboratory criteria for case classification

Confirmatory:

- 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 a specimen obtained from a normally sterile body site (e.g., blood or CSF) using a polymerase chain reaction (PCR).

Presumptive:

- 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).

Case classification

Confirmed:
A person with confirmatory laboratory evidence.

Probable:
A person with presumptive laboratory evidence.

Suspect:

- Clinical purpura fulminans in the absence of a positive blood culture

OR

- A person with supportive laboratory evidence.

Comments

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

Isolates of *N. meningitidis* must be sent to the Bureau of Public Health Laboratories for determination of serogroup.

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Mercury Poisoning

Merlin reporting code = 94899
Case report form (CRF): *Mercury Poisoning CRF*
PAPER CRF REQUIRED

Clinical description

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

Elevated levels of mercury found in urine, whole blood, or hair as determined by laboratory tests:

- ≥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.

Case classification

Confirmed:
A clinically compatible illness in a person with laboratory evidence.

Probable:

- A clinically compatible illness in a person with a high index of suspicion (patient's exposure history regarding location and time)

OR

- A clinically compatible illness in a person with an epidemiologic link to a case with laboratory evidence.

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Mumps

Merlin reporting code = 07290
Case report form (CRF): N/A
MERLIN EXTENDED DATA REQUIRED

Clinical description

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.

Laboratory criteria for case classification

Confirmatory:

- Isolation of mumps virus in cell culture from clinical specimen

OR

- Detection of mumps nucleic acid (e.g., standard or real-time polymerase chain reaction [RT-PCR]).

Presumptive:

Positive test for serum anti-mumps IgM antibody.

Epidemiologic Linkage

A case can be epidemiologically linked to person with a clinically compatible illness or to a laboratory-confirmed case or be a member of a risk group defined by public health authorities during an outbreak. To be considered a confirmed case based on epidemiologic linkage, there must be a laboratory-confirmed case in the chain of transmission.

Case classification

Confirmed:

A person with confirmatory laboratory evidence and an acute illness characterized by any of the following: Acute parotitis or other salivary gland swelling, lasting at least 2 days, aseptic meningitis, encephalitis, hearing loss, orchitis, oophoritis, mastitis, or pancreatitis.

Probable:

A person with acute parotitis or other salivary gland swelling lasting at least 2 days, or orchitis or oophoritis unexplained by another more likely diagnosis:

- In a person with presumptive laboratory evidence

OR

- In a person who is epidemiologically linked to another confirmed or probable case or to a group/community defined by public health during an outbreak of mumps.

Suspect:

- A person with parotitis, acute salivary gland swelling, orchitis, or oophoritis unexplained by another more likely diagnosis

OR

- A person with positive laboratory tests for mumps with no mumps symptoms (with or without epidemiological-linkage to a confirmed or probable case).

Epidemiologic Classification of Internationally-Imported and U.S.-Acquired

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 sub-classified into four mutually exclusive groups:

- **Import-linked case**: Any case in a chain of transmission that is epidemiologically linked to an internationally-imported case.
- **Imported-virus case**: A case for which an epidemiologic link to an internationally-imported case was not identified but for which viral genetic evidence indicates an imported mumps genotype, i.e., a genotype that is not occurring within the 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.

Notes

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. Therefore, mumps cases should not be ruled out by negative laboratory results. Serologic tests should be interpreted with caution, as false positive and false negative results are possible with IgM tests.

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.

Questions about mumps follow-up should be directed to the Department of Health Immunization Program at (850) 245-4342.

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☎ Neurotoxic Shellfish Poisoning

Merlin reporting code = 98800
Case report form (CRF): N/A
NO CRF REQUIRED

Clinical description

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.

Case classification

Confirmed: Clinically compatible illness in a person that consumed shellfish with a positive laboratory finding (brevetoxin) or consumed shellfish from areas where other toxic shellfish have been found or where red tide id documented (DACS shellfish beds closed in region).

Comments

Contact your Regional Environmental Epidemiologist for information.

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☎ Pertussis

Merlin reporting code = 03390
Case report form (CRF): *Pertussis Surveillance Worksheet*
MERLIN EXTENDED DATA REQUIRED

Clinical description

A. Acute cough illness of any duration
B. Cough illness lasting ≥2 weeks
C. **One** of the following signs and symptoms:
   - Paroxysms of coughing
   - Inspiratory "whoop"
   - Posttussive vomiting
   - Apnea, with or without cyanosis (FOR INFANTS AGED <1 YEAR ONLY).

Laboratory criteria for case classification

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

Epidemiological criteria for case classification

F. Epidemiologically linked to a confirmed case
OR
G. Epidemiologically linked to a PCR-confirmed probable infant case.

Case classification

Confirmed:

- Acute cough illness of any duration (A) with isolation of *B. pertussis* by culture from a clinical specimen (D),

OR

- Cough illness lasting ≥2 weeks (B) with one at least other symptom (C) and positive PCR for *B. pertussis* (E),

OR

- Cough illness lasting ≥2 weeks (B) with one at least other symptom (C) that is epidemiologically linked to a confirmed case (F).

Probable:

- Cough illness lasting ≥2 weeks (B) with at least one other symptom (C),

OR

- FOR INFANTS AGED <1 YEAR ONLY: Acute cough illness of any duration (A) with at least one other symptom (C) and positive PCR for *B. pertussis* (E),

OR

- FOR INFANTS AGED <1 YEAR ONLY: Acute cough illness of any duration (A) with at least one other symptom (C) that is epidemiologically linked to a confirmed case (F) or PCR-confirmed probable infant case (G)

OR

- Cough illness lasting ≥2 weeks (B) with at least one other symptom (C) that is epidemiologically linked ONLY to a PCR-confirmed probable infant case (G).

Comments

The clinical description above is appropriate for endemic or sporadic cases. In outbreak settings, a case may be defined as a cough illness lasting at least 2 weeks (as reported by a health professional). Because direct fluorescent antibody testing of nasopharyngeal secretions has been demonstrated in some studies to have low sensitivity and variable specificity[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.

References

1. Broome CV, Fraser DW, English WJ. Pertussis--diagnostic methods and surveillance. In: Manclark CR, Hill JC, eds. International Symposium on Pertussis. Bethesda, MD: US Department of Health, Education, and Welfare, Public Health Service, National Institutes of Health, 1979; DHEW publication no. (NIH)79-1830:19-22.
2. Halperin SA, Bortolussi R, Wort AJ. Evaluation of culture, immunofluorescence, and serology for the diagnosis of pertussis. J Clin Microbiol 1989;27:752-7.

Questions about pertussis follow-up should be directed to the Department of Health Immunization Program at (850) 245-4342.

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Pesticide-Related Illness and Injury, Acute

Merlin reporting code = 09894
Case report form (CRF): *Pesticide Incident Monitoring CRF*
MERLIN EXTENDED DATA REQUIRED

Clinical description

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.
- Ocular lesions.

Laboratory criteria for case classification

If available, the following laboratory data can confirm exposure to a pesticide:

- Biological tests for the presence of, or toxic response to, the pesticide and/or its metabolite (in blood, urine, etc.), which may include:
  - Measurement of the pesticide and/or metabolite(s) in the biological specimen.
  - Measurement of a biochemical response to pesticide in a biological specimen (e.g., cholinesterase levels).
- Environmental tests for the pesticide (e.g., foliage residue, analysis of suspect liquid).
- Pesticide detection on clothing or equipment used by the case subject.

Case classification criteria

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.

A. <u>Documentation of Pesticide Exposure</u>:

A1. Laboratory, clinical, or environmental evidence corroborates exposure (at least one 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 (at least one 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. At least one 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 (at least one 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 CATEGORIES					
CLASSIFICATION CRITERIA	Confirmed Case	Probable Case		Suspect Case	
				Possible Case	Suspicious Case
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.

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.

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! Plague

Merlin reporting code = 02000 Bubonic
= 02050 Pneumonic
Case report form (CRF): *Plague Case Investigation Report*
CONTACT BUREAU OF EPIDEMIOLOGY

Clinical description

Plague 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 that 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)

Laboratory criteria for case classification

Confirmatory:

- Isolation of *Y. pestis* from a clinical specimen

OR

- Fourfold or greater change in serum antibody titer to *Y. pestis* F1 antigen.

Presumptive:

- Elevated serum antibody titer(s) to *Yersinia pestis* fraction 1 (F1) antigen (without documented fourfold or greater change) in a patient with no history of plague vaccination

OR

- Detection of F1 antigen in a clinical specimen by fluorescent assay.

Case classification

Confirmed:
A clinically compatible illness in a person with confirmatory laboratory evidence.

Probable:
A clinically compatible illness in a person with presumptive laboratory evidence.

Suspect:
A clinically compatible illness in a person without presumptive or confirmatory laboratory evidence.

Comments

Specimens or isolates from any case or suspect case must be sent to the Bureau of Public Health Laboratories for confirmation. This condition has been identified as a potential bioterrorism agent by the CDC.

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! Poliomyelitis, Nonparalytic

Merlin reporting code = 04520
Case report form (CRF): N/A
CONTACT BUREAU OF EPIDEMIOLOGY

Clinical description

Most poliovirus infections are asymptomatic or cause mild febrile disease. Poliovirus infections occasionally cause aseptic meningitis and one out of 200 infections from poliovirus type 1 results in paralytic poliomyelitis, characterized by acute onset of flaccid paralysis that is typically asymmetric and associated with a prodromal fever. Poliovirus is spread through fecal material, oral secretions, some aerosols, and fomites.

Case classification

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

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].

References

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.

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

Questions about polio follow-up should be directed to the Department of Health Immunization Program at (850) 245-4342.

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! Poliomyelitis, Paralytic

Merlin reporting code = 04590
Case report form (CRF): N/A
CONTACT BUREAU OF EPIDEMIOLOGY

Clinical description

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

Case classification

Confirmed:
A case that meets the clinical description and in which the patient has a neurologic deficit 60 days after onset of initial symptoms, has died, or has unknown follow-up status.

Probable:
A case that meets the clinical description.

Comments

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

Questions about polio follow-up should be directed to the Department of Health Immunization Program at (850) 245-4342.

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Psittacosis (Ornithosis)

Merlin reporting code = 07390
Case report form (CRF): *Psittacosis Human Case Surveillance Report*
PAPER CRF REQUIRED

Clinical description
An illness characterized by fever, chills, headache, photophobia, cough, and myalgia.

Laboratory criteria for case classification
Confirmatory:
- 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:
- Presence of IgM antibody against *C. psittaci* by MIF greater or equal 1:32 in at least one serum specimen obtained after onset of symptoms

OR
- Detection of *C. psittaci* DNA in a respiratory specimen (e.g. sputum, pleural fluid or tissue) via amplification of a specific target by polymerase chain reaction (PCR).

Case classification
Confirmed:
A clinically compatible illness in a person with confirmatory laboratory evidence.

Probable:
- A clinically compatible illness in a person with supportive laboratory evidence

OR
- A clinically compatible illness in a person who is epidemiologically linked to a confirmed case.

Suspect:
Clinically compatible illness in a person with history of close contact with a *C. psittaci* positive bird or its feces or secretions within 2 weeks of symptom onset and no alternative agreed upon diagnosis.

Epidemiologic 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.

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.

Reference

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.

Specimens from all cases must be sent to the Bureau of Public Health Laboratories for confirmation. Specimens will be forwarded on to CDC for testing in outbreak settings. This condition has been identified as a potential bioterrorism agent by the CDC.

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Q Fever, Acute (*Coxiella burnetii*)

Merlin reporting code = 08301
Case report form (CRF): *Q Fever CRF*
PAPER CRF REQUIRED

Clinical description

Acute fever usually accompanied by rigors, myalgia, malaise, and a severe retrobulbar headache. Fatigue, night-sweats, dyspnea, confusion, nausea, diarrhea, abdominal pain, vomiting, non-productive cough, and chest pain have also been reported. Severe disease can include acute hepatitis, atypical pneumonia with abnormal radiograph, and meningoencephalitis. Pregnant women are at risk for fetal death and abortion. Clinical laboratory findings may include elevated liver enzyme levels, leukocytosis, and thrombocytopenia. Asymptomatic infections may also occur.

Clinical criteria for case classification

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

Laboratory criteria for case classification

Confirmatory:

- Serological evidence of a fourfold change in IgG-specific antibody titer to *Coxiella. burnetii* phase II antigen by indirect immunofluorescence assay (IFA) between paired serum samples, (CDC suggests one taken during the first week of illness and a second 3-6 weeks later, antibody titers to phase I antigen may be elevated or rise as well),

OR

- Detection of *C. burnetii* DNA in a clinical specimen via amplification of a specific target by polymerase chain reaction (PCR),

OR

- Demonstration of *C. burnetii* in a clinical specimen by immunohistochemistry (IHC),

OR

- Isolation of *C. burnetii* from a clinical specimen by culture.

Presumptive:

- 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-linked immunosorbent assay (ELISA), dot-ELISA, or latex agglutination.

Notes

For acute testing, CDC uses in-house IFA IgG testing (cutoff of ≥1:128), preferring simultaneous testing of paired specimens, and does not use IgM results for routine diagnostic testing.

Case classification

Confirmed:

A person with confirmatory laboratory evidence that either meets clinical case criteria or is epidemiologically linked to a case with laboratory evidence.

Probable:

A clinically compatible acute illness that has supportive presumptive evidence for past or present acute disease (antibody to Phase II antigen) but does not have confirmatory laboratory evidence.

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.

Acute and convalescent sera from reported and suspect cases must be sent to the Bureau of Public Health Laboratories. This condition has been identified as a potential bioterrorism agent by the CDC.

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Q Fever, Chronic (*Coxiella burnetii*)

Merlin reporting code = 08302
Case report form (CRF): *Q Fever CRF*
PAPER CRF REQUIRED

Clinical description

Infection that persists for more than 6 months. Potentially fatal endocarditis may evolve months to years after acute infection, particularly in persons with underlying valvular disease. Infections of aneurysms and vascular prostheses have been reported. Immunocompromised individuals are particularly susceptible. Rare cases of chronic hepatitis without endocarditis, osteomyelitis, osteoarthritis, and pneumonitis have been described.

Clinical 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:

- Serological evidence of IgG antibody to *Coxiella burnetii* phase I antigen ≥ 1:800 by IFA (while phase II IgG titer will be elevated as well; phase I titer is higher than the phase II titer),

OR

- Detection of *C. burnetii* DNA in a clinical specimen via amplification of a specific target by polymerase chain reaction (PCR),

OR

- Demonstration 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.

Case classification

Confirmed:
A clinically compatible chronic illness with confirmatory laboratory evidence for chronic infection.

Probable:
A clinically compatible chronic illness with presumptive laboratory evidence for past or present chronic infection (antibody to Phase I antigen).

Comments

Samples from suspected chronic patients should be evaluated for IgG titers to both phase I and phase II antigens. Current commercially available ELISA tests (which test only for phase 2) are not quantitative, cannot be used to evaluate changes in antibody titer, and hence are not useful for serological confirmation. IgM tests are not strongly supported for use in serodiagnosis of acute disease, as the response may not be specific for the agent (resulting in false positives) and the IgM response may be persistent. Complement fixation (CF) tests and other older test methods are neither readily available nor commonly used.

Serologic test results must be interpreted with caution, because baseline antibodies acquired as a result of historical exposure to Q fever may exist, especially in rural and farming areas.

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.

Acute and convalescent sera from reported and suspect cases must be acquired and sent to the Bureau of Public Health Laboratories. This condition has been identified as a potential bioterrorism agent by the CDC.

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☎ Rabies, Animal

Merlin reporting code = 07102
Case report form (CRF): *Animal Bite Report*
PAPER CRF REQUIRED

Laboratory criteria for case classification

- A positive direct fluorescent antibody test (preferably performed on central nervous system tissue)

OR

- Isolation of rabies virus (in cell culture or in a laboratory animal).

Case classification

Confirmed:
A case that is laboratory-confirmed in an animal.

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☎ Rabies, Human

Merlin reporting code = 07100
Case report form (CRF): N/A
CONTACT BUREAU OF EPIDEMIOLOGY

Clinical description

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

- Detection by direct fluorescent antibody of viral antigens in a clinical specimen (preferably the brain or the nerves surrounding hair follicles in the nape of the neck),

OR

- Isolation (in cell culture or in a laboratory animal) of rabies virus from saliva, cerebrospinal fluid (CSF), or central nervous system tissue,

OR

- Identification of a rabies-neutralizing antibody titer $\geq$5 (complete neutralization) in the serum or CSF of an unvaccinated person.

Case classification

Confirmed:
A clinically compatible illness in a person with laboratory evidence.

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.

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! Rabies, Possible Exposure

Merlin reporting code = 07101
Case report form (CRF): *Confidential Rabies Post Exposure Prophylaxis*
MERLIN EXTENDED DATA REQUIRED

Clinical description

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

Laboratory criteria for case classification

N/A

Case classification

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

Comments

Only bites or other exposures where rabies post-exposure prophylaxis (PEP) is recommended should be reported as rabies, possible exposure (Merlin reporting 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 reporting code=07103).

Notes

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: http://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: http://www.floridahealth.gov/diseases-and-conditions/rabies/index.html.

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! Ricin Toxin Poisoning

Merlin reporting code = 98830
Case report form (CRF): N/A
NO CRF REQUIRED

Clinical description

- 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 samples.

Case classification

Confirmed:
A clinically compatible illness in a person with laboratory evidence.

Probable:
A clinically compatible illness in a person with either a high index of suspicion (reliable intelligence or patient history) for ricin exposure or an epidemiologic link to a case with laboratory evidence.

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.

Specimens from all cases must be sent to the Bureau of Public Health Laboratories for confirmation. This condition has been identified as a potential bioterrorism agent by the CDC.

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Rocky Mountain Spotted Fever and Spotted Fever Rickettsiosis

Merlin reporting code = 08309
Case report form (CRF): *Tick-Borne Rickettsial Disease CRF*
MERLIN EXTENDED DATA REQUIRED

Background

Spotted fever rickettsioses are a group of tick-borne infections caused by some members of the genus *Rickettsia*. Rocky Mountain spotted fever (RMSF) is an illness caused by *Rickettsia rickettsii*, a bacterial pathogen transmitted to humans through contact with ticks. *Dermacentor* species of ticks are most commonly associated with infection, including *Dermacentor variabilis* (the American dog tick), *Dermacentor andersoni* (the Rocky Mountain wood tick), and more recently *Rhiphicephalus sanguineus* (the brown dog tick). Disease onset occurs 3-14 days following a tick bite. Age-specific illness is highest for children and older adults. Illness is characterized by acute onset of fever, and may be accompanied by headache, malaise, myalgia, nausea/vomiting, or neurologic signs; a macular or maculopapular rash appears 4-7 days following onset in many (~80%) patients, often present on the palms and soles. RMSF may be fatal in as many as 20% of untreated cases, and severe, fulminant disease can occur. In addition to RMSF, human illness associated with other spotted fever group *Rickettsia* species, including infection with *Rickettsia parkeri* (associated with *Amblyomma maculatum* ticks), *Rickettsia amblyommi*, and *Rickettsia africae* have also been reported. In these patients, clinical presentation appears similar to, but may be milder than, RMSF; the presence of an eschar at the site of tick attachment is useful for differentiating between *R. parkeri* or *R. africae* and most other spotted fever rickettsioses from *R. rickettsii*. Serologic tests for RMSF can cross-react with spotted fever *Rickettsia* (SFR) species.

Clinical criteria for case classification

Any reported fever **and** one or more of the following: rash, eschar, headache, muscle aches, anemia, thrombocytopenia, or any hepatic transaminase elevation.

Laboratory criteria for case classification

Confirmatory:

- Serological evidence of a fourfold change in IgG-specific antibody titer reactive with *Rickettsia rickettsii* or other SFR antigen by indirect immunofluorescence assay (IFA) between paired serum specimens (one taken in the first week of illness and a second 2-4 weeks later),

OR

- Detection of *R. rickettsii* or other SFR DNA in a clinical specimen via amplification of a specific target by polymerase chain reaction (PCR),

OR

- Demonstration of SFR antigen in a biopsy or autopsy specimen by immunohistochemistry (IHC),

OR

- Isolation of *R. rickettsii* or other SFR from a clinical specimen in cell culture.

Presumptive:

- Single elevated IgG antibody reactive with *R. rickettsii* or other SFR antigen by IFA, enzyme-linked immunosorbent assay (ELISA), dot-ELISA, or latex agglutination.

Epidemiological criteria for case classification

Exposure is defined as having been in potential tick habitats within the past 14 days before onset of symptoms. Occupation and travel history should be recorded if relevant to exposure. A history of a tick bite is not required.

Case classification

Confirmed:
A clinically compatible illness in a person with confirmatory laboratory evidence.

Probable:
A clinically compatible illness in a person with presumptive laboratory evidence.

Suspect:
A person with presumptive laboratory evidence but no clinical information available.

Comments

Acute illness is best detected by PCR and IHC methods in skin biopsy specimens, and occasionally by PCR in appropriate whole blood specimens taken during the first week of illness, prior to antibiotic treatment. Serology can also be employed for detection, however an antibody response may not be detectable in initial samples, and paired acute and convalescent samples are essential for confirmation.

Current commercially available ELISA tests are not quantitative, cannot be used to evaluate changes in antibody titer, and hence are not useful for serological confirmation. IgM tests are not strongly supported for use in serodiagnosis of acute disease, as the response may not be specific for the agent (resulting in false positives) and the IgM response may be persistent. Complement fixation (CF) tests and other older test methods are neither readily available nor commonly used. CDC uses in-house IFA IgG testing (cutoff of ≥1:64), preferring simultaneous testing of paired specimens, and does not use IgM results for routine diagnostic testing.

Recently, a growing number of case reports have included commercial laboratory results as supportive evidence. For example, the previous case definitions have used the word “antibody.” A review of testing protocols and reagents distributed to the state laboratories reveal that these existing tests were specific for IgG-class immunoglobulins. With the increased availability of IgM testing at commercial laboratories, it becomes necessary to clarify the traditional meaning of the word “antibody” as used in all previous definitions and routinely used by rickettsial laboratories. The use of IgM is less supported by scientific evidence, and actually is complicated by false negatives when IgG is present and false positives when rheumatoid factor or cross-reactive, non-rickettsial, antibodies are present. Thus, IgM testing cannot be recommended for confirmation of cases at this time.

Acute and convalescent sera from reported cases must be sent to the Bureau of Public Health Laboratories for confirmatory testing.

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! Rubella

Merlin reporting code = 05690
Case report form (CRF): *Rubella Surveillance Worksheet*
MERLIN EXTENDED DATA REQUIRED

Clinical description

An illness that has all the following characteristics without a more compelling diagnosis:

- Acute onset of generalized maculopapular rash.
- Temperature greater than 99.0 F (greater than 37.2 C), if measured.
- Arthralgia/arthritis, lymphadenopathy, or conjunctivitis.

Laboratory criteria for case classification

- Isolation of rubella virus,

OR

- Detection of rubella virus-specific nucleic acid by polymerase chain reaction (PCR),

OR

- IgG seroconversion[1] or a significant rise between acute- and convalescent-phase titers in serum rubella IgG antibody level by any standard serologic assay,

OR

- Positive serologic test for rubella IgM antibody.[1, 2]

[1] Not explained by MMR vaccination during the previous 6-45 days.
[2] Not otherwise ruled out by a more specific testing in a public health laboratory.

Case classification

Confirmed:

- A person with laboratory evidence, with or without symptoms

OR

- A person that meets the clinical description and is epidemiologically linked to a case with laboratory evidence case.

Probable:
In the absence of another known cause, a person that meets the clinical description, is not epidemiologically linked to a case with laboratory evidence, and has noncontributory or no serologic or virologic testing.

Suspect:
In the absence of another known cause, any generalized rash illness of acute onset that does not meet the criteria for probable or confirmed rubella.

Epidemiologic Classification of Internationally-Imported and U.S.-Acquired
Internationally-imported case: An internationally-imported case is defined as a case in which rubella results from exposure to rubella virus outside the 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 epidemiologic link to an internationally-imported case was not identified but for which viral genetic evidence indicates an imported rubella genotype, i.e., a genotype that is not occurring within the 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.

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

Questions about rubella follow-up should be directed to the Department of Health Immunization Program at (850) 245-4342.

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! Rubella, Congenital Syndrome

Merlin reporting code = 77100
Case report form (CRF): *Congenital Rubella Syndrome CRF*
PAPER CRF REQUIRED

Clinical description

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), loss of hearing, pigmentary retinopathy.
- Purpura, splenomegaly, jaundice, microcephaly, mental retardation, meningoencephalitis, radiolucent bone disease.

Clinical case definition

Presence of any defects or laboratory data consistent with congenital rubella infection.

Laboratory criteria for case classification

- Isolation of rubella virus,

OR

- Demonstration of rubella-specific IgM antibody,

OR

- Infant rubella antibody level that persists at a higher level and for a longer period than expected from passive transfer of maternal antibody (i.e., rubella titer that does not drop at the expected rate of a twofold dilution per month),

OR

- Detection of rubella virus-specific nucleic acid by polymerase chain reaction (PCR).

Case classification

Confirmed:
A clinically compatible illness in a person with laboratory evidence.

Probable:

- A person that has no laboratory evidence,

AND

  - Has any two complications listed in the 1st bullet of the clinical description

  OR

  - Has one complication from the 1st bullet and one from the 2nd bullet of the clinical description,

AND

- Lacks evidence of any other etiology.

Suspect:
A person with some compatible clinical findings but not does not meet the criteria for a probable case.

Epidemiologic Classification of Internationally-Imported and U.S.-Acquired
Congenital Rubella Syndrome cases will be classified epidemiologically as internationally-imported or U.S.-acquired, according to the source of infection in the mother, using the definitions below, which parallel the classifications for rubella cases.

Internationally-imported case: To be classified as an internationally-imported CRS case, the mother must have acquired rubella infection outside the U.S. or in the absence of documented rubella infection, the mother was outside the 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 epidemiologic link to an internationally-imported case was not identified but for which viral genetic evidence indicates an imported rubella genotype, i.e., a genotype that is not occurring within the 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.

Notes

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

1. A case that demonstrates laboratory evidence of infection, but without any clinical symptoms or signs is not reportable.
2. In probable cases, either or both of the eye-related findings (i.e., cataracts and congenital glaucoma) are interpreted as a single complication. In cases classified as infection only, if any compatible signs or symptoms (e.g., hearing loss) are identified later, the case is reclassified as confirmed.

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

Questions about rubella follow-up should be directed to the Department of Health Immunization Program at (850) 245-4342.

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Salmonellosis

Merlin reporting code = 00300
Case report form (CRF): *Salmonellosis CRF*
MERLIN EXTENDED DATA OPTIONAL

Clinical description

An illness of variable severity commonly manifested by diarrhea, abdominal pain, nausea, and sometimes vomiting. Asymptomatic infections may occur, and the organism may cause extraintestinal infections.

Laboratory criteria for case classification

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

Supportive:
Detection of *Salmonella* from a clinical specimen using a non-culture based method.

Case classification

Confirmed:
A person with confirmatory laboratory evidence. When available, O and H antigen serotype characterization should be reported.

Probable:
A clinically compatible illness (diarrhea must be present) in a person who is epidemiologically linked to a confirmed case, i.e., a contact of a confirmed case or member of a risk group as defined by public health authorities during an outbreak.

Suspect:
A person with supportive laboratory evidence.

Comments

Asymptomatic infections and infections at sites other than the gastrointestinal tract with any laboratory evidence are considered cases and should be reported. Illness due to *Salmonella* serotype Typhi should be reported as typhoid fever (Merlin reporting code=00200), not as salmonellosis (Merlin reporting code=00300).

Serogroup and serotype information can sometimes be difficult to read or interpret on laboratory reports. This information is critical to understanding the epidemiology of salmonellosis in Florida and all details should be entered accurately and appropriately into Merlin. Pulsed-field gel electrophoresis (PFGE) can be performed on *Salmonella* isolates during an outbreak investigation by the Bureau of Public Health Laboratories, if requested.

- **Typhoid fever (Merlin reporting code=00200): All *Salmonella* serotype Typhi isolates must be sent to the Bureau of Public Health Laboratories for confirmation and additional testing.**

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Saxitoxin Poisoning (Paralytic Shellfish Poisoning)

Merlin reporting code = 98840
Case report form (CRF): N/A
NO CRF REQUIRED

Clinical description

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.

Case classification

Confirmed:
A clinically compatible illness in a person with laboratory evidence.

Probable:
- A clinically compatible illness in a person with a history of exposure to puffer fish or non-Florida molluscan shellfish

OR
- A clinically compatible illness in a person who is epidemiologically linked to a confirmed case.

Suspect:
A clinically compatible illness in a person whose history of exposure to puffer fish or non-Florida molluscan shellfish is unknown.

Comments

Contact your Regional Environmental Epidemiologist for information.

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! Severe Acute Respiratory Syndrome (SARS)

Merlin reporting code= 07982
Case report form (CRF): *International SARS CRF*
PAPER CRF REQUIRED

Clinical description

Early illness:

- Presence of two or more of the following features: fever (might be subjective), chills, rigors, myalgia, headache, diarrhea, sore throat, rhinorrhea.

Mild-to-moderate respiratory illness:

- Temperature of >100.4º F (>38º C) and
- One or more clinical findings of lower respiratory illness (e.g., cough, shortness of breath, difficulty breathing).

Severe respiratory illness:

- Meets clinical criteria of mild-to-moderate respiratory illness and
- One or more of the following findings:
    - Radiographic evidence of pneumonia,
    - Acute respiratory distress syndrome, or
    - Autopsy findings consistent with pneumonia or acute respiratory distress syndrome without an identifiable cause.

Epidemiologic criteria for case classification

Possible exposure to SARS-associated coronavirus (SARS-CoV):

One or more of the following exposures in the 10 days before onset of symptoms:

- 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 with history of travel in the 10 days before onset of symptoms to a foreign or domestic location with documented or suspected recent transmission of SARS-CoV.

Likely exposure to SARS-CoV:

One or more of the following exposures in the 10 days before onset of symptoms:

- Close contact with a 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 onset of symptoms.

Laboratory criteria for case classification

Tests to detect SARS-CoV are being refined, and their performance characteristics assessed; therefore, criteria for laboratory diagnosis of SARS-CoV are changing. The following are 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).

Exclusion Criteria

A person may be excluded as a SARS report under investigation (SARS RUI), including as a CDC-defined probable SARS-CoV case, if any of the following applies:

- An alternative diagnosis can explain the illness fully.
- Antibody to SARS-CoV is undetectable in a serum specimen obtained >28 days after onset of illness.
- The case was reported on the basis of contact with a person who was excluded subsequently as a case of SARS-CoV disease; then the reported case also is excluded, provided other epidemiologic or laboratory criteria are not present.

Case classification

SARS RUI (Report Under Investigation)

Reports in persons from areas where SARS is not known to be active:

SARS RUI-1: Patients with severe illness compatible with SARS in groups likely to be first affected by SARS-CoV7 if SARS-CoV is introduced from a person without clear epidemiologic links to known cases of SARS-CoV disease or places with known ongoing transmission of SARS-CoV.

Reports in persons from areas where SARS activity is occurring:

SARS RUI-2: Patients who meet the current clinical criteria for mild-to-moderate illness and the epidemiologic criteria for possible exposure (spring 2003 CDC definition for suspect cases).
SARS RUI-3: Patients who meet the current clinical criteria for severe illness and the epidemiologic criteria for possible exposure (spring 2003 CDC definition for probable cases).
SARS RUI-4: Patients who meet the clinical criteria for early or mild-moderate illness and the epidemiologic criteria for likely exposure to SARS-CoV.

SARS-CoV disease classification

Confirmed: A clinically compatible illness (i.e., early, mild-to-moderate, or severe) in a person with laboratory evidence.

Probable: A person who meets the clinical criteria for severe respiratory illness and the epidemiologic criteria for likely exposure to SARS-CoV.

Comments

Information regarding the current criteria for laboratory diagnosis of SARS-CoV is available at http://www.cdc.gov/sars/index.html.

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

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Shiga Toxin-Producing Escherichia coli (STEC) Infection

Merlin reporting code = 00800
Case report form (CRF): *STEC Case Report*
MERLIN EXTENDED DATA REQUIRED

Clinical description

An infection of variable severity characterized by diarrhea (often bloody) and abdominal cramps. Illness may be complicated by hemolytic uremic syndrome (HUS) or thrombotic thrombocytopenic purpura (TTP); asymptomatic infections also may occur and the organism may cause extraintestinal infections.

Laboratory criteria for case classification

Confirmatory:
Isolation of Shiga toxin-producing *Escherichia coli* (STEC) from a clinical specimen. *Escherichia coli* O157:H7 isolates may be assumed to be Shiga toxin-producing. For all other *E. coli* isolates, Shiga toxin production or the presence of Shiga toxin genes must be determined to be considered STEC. **Note that detection of Shiga toxin by enzyme-linked immunosorbent assay (EIA/ELISA) alone does not meet the confirmatory criteria.**

Presumptive:
(1) Isolation of *E. coli* O157 from a clinical specimen, without confirmation of H antigen or Shiga toxin production.
(2) Identification of an elevated antibody titer to a known STEC serotype.

Supportive:
Identification of Shiga toxin in a specimen **without** isolation of STEC. **This includes EIA/ELISA tests for Shiga toxin, which account for the majority of non-Bureau of Public Health Laboratories (BPHL) laboratory results.**

Case classification

Confirmed:
A person with confirmatory laboratory evidence. When available, O and H antigen serotype characterization should be reported.

Probable:
- A person with presumptive laboratory evidence (1),

OR
- A clinically compatible illness (diarrhea must be present) in a person with presumptive laboratory evidence (2),

OR
- A clinically compatible illness (diarrhea must be present) in a person who is epidemiologically linked to a confirmed case, i.e., a contact of a confirmed case or member of a risk group as defined by public health authorities during an outbreak.

Suspect:
- A clinically compatible illness (diarrhea must be present) in a person with supportive laboratory evidence

OR
- A case of postdiarrheal HUS or TTP (see HUS case definition).

Comments

Asymptomatic infections and infections at sites other than the gastrointestinal tract in people with confirmatory laboratory evidence or presumptive laboratory evidence (1) are considered cases and should be reported.

Notes

Patients with STEC infections who develop HUS should be reported in Merlin with BOTH disease codes (as if they were two separate cases). A laboratory result that reports only "*E. coli*" does not indicate STEC.

- **Isolates from all cases of STEC must be sent to BPHL for confirmation and PFGE typing. All Shiga toxin-positive specimens must be sent to BPHL for confirmation and additional testing.** There is a strong possibility that Shiga toxin may degrade in transit. A person with any positive Shiga toxin result should be reported as a suspect case in Merlin, regardless of whether Shiga toxin is confirmed by BPHL.

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.

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Shigellosis

Merlin reporting code = 00490
Case report form (CRF): *Shigellosis CRF*
MERLIN EXTENDED DATA OPTIONAL

Clinical description

An illness of variable severity characterized by diarrhea, fever, nausea, cramps, and tenesmus. Asymptomatic infections may occur.

Laboratory criteria for case classification

Confirmatory:
Isolation of *Shigella* from a clinical specimen.

Supportive:
Detection of *Shigella* from a clinical specimen using a non-culture based method.

Case classification

Confirmed:
A person with confirmatory laboratory evidence. When available, species characterization should be reported.

Probable:
A clinically compatible illness (diarrhea must be present) in a person who is epidemiologically linked to a confirmed case, i.e., a contact of a confirmed case or member of a risk group as defined by public health authorities during an outbreak.

Suspect:
A person with supportive laboratory evidence.

Comments

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

Pulsed-field gel electrophoresis (PFGE) can be performed on *Shigella* isolates during an outbreak investigation by the Bureau of Public Health Laboratories, if requested.

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! Smallpox

Merlin reporting code = 05090
Case report form (CRF): N/A
CONTACT BUREAU OF EPIDEMIOLOGY

Clinical description

An illness with 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. Clinically consistent cases are those presentations of smallpox that do not meet this classical clinical description: a) hemorrhagic type, b) flat type, and c) *variola sine eruptione*. Detailed clinical description is available on the CDC web site: http://www.bt.cdc.gov/agent/smallpox/index.asp.

Laboratory criteria for case classification

- 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).

Case classification

Confirmed:

- A person with laboratory evidence

OR

- A person that meets the clinical description who is epidemiologically linked to a case with laboratory evidence.

Probable:

A person that meets the clinical description or a clinically consistent case that does not meet the clinical description and has an epidemiological link to a confirmed case of smallpox.

Suspect:

A person with a generalized, acute vesicular or pustular rash illness with fever preceding development of rash by 1-4 days.

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.

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

This smallpox case definition is to be used only during post-event surveillance. The case definition described in Guide A of the Smallpox Response Plan and Guidelines (Version 3) on the CDC bioterrorism preparedness website (http://www.bt.cdc.gov/agent/smallpox/response-plan/index.asp) includes different criteria for a suspect case than this smallpox case definition that the Council of State and Territorial Epidemiologists approved for use in the National Notifiable Diseases Surveillance System (NNDSS). The smallpox case definition on the CDC bioterrorism web site is more sensitive and less specific than this case definition, in that a "suspect" case is defined as a case with febrile rash illness with fever preceding the development of rash by 1-4 days.

Indications for laboratory testing of patients with suspected smallpox should be followed as described in detail in Guide A of the CDC Smallpox Response Plan. Laboratory diagnostic testing for variola virus should be conducted in Level C or D laboratories only.

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Staphylococcal Enterotoxin B Poisoning

Merlin reporting code = 38200
Case report form (CRF): N/A
NO CRF REQUIRED

Clinical description

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 4 weeks, retrosternal chest pain, and shortness of breath.
- Ingestion exposure: Nausea or vomiting and diarrhea.

Laboratory criteria for case classification

N/A

Case classification

Confirmed:
A clinically compatible illness that is diagnosed by clinical signs and epidemiology. SEB may be found in blood, urine, respiratory secretions, or nasal swabs for a short period of time. The toxin is detected by ELISA and chemiluminescence tests. Specimens that are suspected of containing the toxin should be sent immediately to the state laboratory.

Comments

Specimens from all cases must be sent to the Bureau of Public Health Laboratories for confirmation. This condition has been identified as a potential bioterrorism agent by the CDC.

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☎ *Staphylococcus aureus* Infection, Vancomycin Non-Susceptible

Merlin reporting code = 38100 (Intermediate)
= 38101 (Resistant)
Case report form (CRF): N/A
CONTACT BUREAU OF EPIDEMIOLOGY

Clinical description

Staphylococcus aureus can produce a variety of syndromes with clinical manifestations including skin and soft tissue infections, empyema, bloodstream infection, pneumonia, osteomyelitis, septic arthritis, endocarditis, sepsis, and meningitis. *S. aureus* may also colonize individuals who remain asymptomatic. The most frequent site of *S. aureus* colonization is the nares.

Laboratory criteria for case classification

Intermediate Resistance (GISA/VISA):

- Isolation of *Staphylococcus aureus* from a clinical specimen with an MIC 4-8 µg/ml to vancomycin.

Resistance (GRSA/VRSA):

- Isolation of *Staphylococcus aureus* from a clinical specimen with an MIC $\geq$16 µg/ml to vancomycin.

Case classification

Confirmed:
A clinically compatible illness in a person with laboratory evidence.

Comments

✉ **Isolates from all cases must be sent to the Bureau of Public Health Laboratories for confirmation.**

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Streptococcus pneumoniae Invasive Disease

Merlin reporting code = 04823 (Drug-Resistant)
= 04830 (Drug-Susceptible)
Case report form (CRF): *S. pneumoniae Surveillance Worksheet*
MERLIN EXTENDED DATA REQUIRED (for cases <6 years old)

Clinical description

Streptococcus pneumoniae causes many clinical syndromes, depending on the site of infection (e.g., acute otitis media, pneumonia, bacteremia, or meningitis).

Laboratory criteria for case classification

- Isolation of *S. pneumoniae* from a normally sterile site (e.g., blood, cerebrospinal fluid, or, less commonly, joint, pleural, or 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[1,2]*.

Case classification

Confirmed:
A clinically compatible illness in a person with laboratory evidence.

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, and will not require symptoms to meet the case definition. For case reports in people ≥6 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.

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.

References

1. National Committee for Clinical Laboratory Standards. Performance standards for antimicrobial susceptibility testing. Villanova, PA: National Committee for Clinical Laboratory Standards, 1994;14(16); NCCLS document M100-S5.
2. CDC. Defining the public health impact of drug-resistant Streptococcus pneumoniae: report of a working group. MMWR 1996;45(No. RR-1).

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Tetanus

Merlin reporting code = 03700
Case report form (CRF): *Tetanus Surveillance Worksheet*
MERLIN EXTENDED DATA REQUIRED

Clinical description

Acute onset of hypertonia and/or painful muscular contractions (usually of the muscles of the jaw and neck) and generalized muscle spasms without other apparent medical cause. Diagnosis of tetanus by a health care provider.

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

N/A

Case classification

Probable:

- In the absence of a more likely diagnosis, an acute illness with muscle spasms or hypertonia AND diagnosis of tetanus by a health care provider

OR

- Death, with tetanus listed on the death certificate as the cause of death or a significant condition contributing to death.

Notes

There is no definition for “confirmed” tetanus.

Questions regarding tetanus follow-up should be directed to the Department of Health Immunization Program at 850-245-4342.

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Trichinellosis (Trichinosis)

Merlin reporting code = 12400
Case report form (CRF): *Trichinosis Surveillance CRF*
PAPER CRF REQUIRED

Clinical description

A disease caused by ingestion of *Trichinella* larvae, usually through consumption of *Trichinella*-containing meat (or food contaminated with such meat) that has been inadequately cooked prior to consumption. The disease has variable clinical manifestations. Common signs and symptoms among symptomatic persons include eosinophilia, fever, myalgia, and periorbital edema.

Laboratory criteria for case classification

Confirmatory:

- Demonstration of *Trichinella* larvae in tissue obtained by muscle biopsy

OR

- Positive serologic test for *Trichinella* (EIA, immunofluorescence).

Presumptive:

- Demonstration of *Trichinella* larvae in the food item.

Epidemiological criteria for case classification

Shared an epidemiologically implicated meal or ate an epidemiologically implicated meat product

OR

- Consumed a meat product in which the parasite was demonstrated.

Case classification

Confirmed:
A clinically compatible illness in a person with confirmatory laboratory evidence (clinical specimen).

Probable:
A clinically compatible illness in a person with compatible exposure history.

Suspect:
A person with no clinically compatible illness that shared an epidemiologically implicated meal or ate an epidemiologically implicated meat product, and the person has a positive serologic test for *Trichinella* (and no known prior history of *Trichinella* infection).

Comments

In an outbreak setting, at least one clinical case must have laboratory evidence.

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).

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! Tularemia *(Francisella tularensis)*

Merlin reporting code = 02190
Case report form (CRF): *Tularemia Case Investigation Report*
PAPER CRF REQUIRED

Clinical description

An illness characterized by several distinct forms, including:
Fever (>38ºC) AND one or more of the following:

- Ulceroglandular: Cutaneous ulcer with regional lymphadenopathy
- Glandular: Regional lymphadenopathy with no ulcer
- Oculoglandular: Conjunctivitis with preauricular lymphadenopathy
- Oropharyngeal: Cervical lymphadenopathy and stomatitis or pharyngitis
- Intestinal: Intestinal pain, vomiting, and diarrhea
- Pneumonic: Pleuropneumonitis or hilar lymphadenopathy
- Typhoidal: Febrile illness without early localizing signs and symptoms

Laboratory criteria for case classification

Confirmatory:

- Isolation of *Francisella tularensis* from a clinical specimen

OR

- Fourfold or greater change in serum antibody titer to *Francisella tularensis* antigen.

Presumptive:

- Elevated serum antibody titer(s) to *F. tularensis* antigen (without documented fourfold or greater change) in a patient with no history of tularemia vaccination

OR

- Detection of *F. tularensis* in a clinical specimen by fluorescent assay.

Case classification

Confirmed:
A clinically compatible illness in a person with confirmatory laboratory evidence.

Probable:
A clinically compatible illness in a person with presumptive laboratory evidence.

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 (rodent, rabbit, hare, etc.) host of *F. tularensis*, or exposure to potentially contaminated water, laboratory exposure or resident or recent travel to a *F. tularensis* endemic state (Arkansas, Missouri, Montana, Oklahoma or South Dakota).

Specimens or isolates from all cases must be sent to the Bureau of Public Health Laboratories for confirmation. This condition has been identified as a potential bioterrorism agent by the CDC.

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Typhoid Fever (*Salmonella* Serotype Typhi)

Merlin reporting code = 00200
Case report form (CRF): *Typhoid and Paratyphoid Fever Surveillance Report*
MERLIN EXTENDED DATA REQUIRED

Clinical description

An illness caused by *Salmonella* serotype Typhi that is often characterized by insidious onset of sustained fever, headache, malaise, anorexia, relative bradycardia, constipation or diarrhea, and nonproductive cough; however, many mild and atypical infections occur. Carriage of *S.* Typhi may be prolonged.

Laboratory criteria for case classification

Confirmatory:
Isolation of *S.* Typhi from a clinical specimen.

Supportive:
Detection of *S.* Typhi from a clinical specimen using a non-culture based method.

Case classification

Confirmed:
A clinically compatible illness in a person with confirmatory laboratory evidence.

Probable:
A clinically compatible illness in a person who is epidemiologically linked to a confirmed case.

Suspect:
A person with confirmatory or supportive laboratory evidence.

Comments

Infection with *S.* Typhi should only be reported as typhoid fever (Merlin reporting code=00200) and not as salmonellosis (Merlin reporting code=00300).

Isolates from all confirmed cases must be sent to the Bureau of Public Health Laboratories for confirmation.

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! Typhus Fever, Epidemic (*Rickettsia prowazekii*)

Merlin reporting code = 08000
Case report form (CRF): N/A
NO CRF REQUIRED

Clinical description

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

Demonstration of *Rickettsia prowazekii* species in tissues or body fluids, or fourfold change in specific antibody titers in sequential sera.

Case classification

Confirmed:
A clinically compatible illness in a person with laboratory evidence.

Probable:
A clinically compatible illness in a person that is lacking laboratory evidence.

Comments

Specimens from all cases must be sent to the Bureau of Public Health Laboratories for confirmation. This condition has been identified as a potential bioterrorism agent by the CDC.

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! Vaccinia Disease

Merlin reporting code = 9990
Case report form (CRF): N/A
CONTACT BUREAU OF EPIDEMIOLOGY

Clinical description

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 any 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 (Post vaccinial encephalomyelitis): Post-Vaccinial Encephalopathy or Post-Vaccinial Encephalitis, onset of symptoms 6-15 days post-vaccination, is characterized by any change in mental status (confusion, delirium, drowsiness, restlessness, disorientation, amnesia, seizures, loss of consciousness, coma) or in sensorimotor function (altered sensation, weakness, paresis, aphasia, incontinence or urinary retention, obstinate constipation) or any combination thereof.
- 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) or any combination thereof.
- Pyogenic infection: Characterized by (staphylococcal infections) 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

OR

(streptococcal infections) a piled up eschar, heaping at the vaccination site. Lymphangitis occurs commonly as does edematous painful regional lymphadenitis

OR

(enteric and anaerobic infections) 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.

Case classification

Probable:
Clinical features compatible with the diagnosis, other causes are excluded, and supportive information is available.

Suspect:
Clinical features compatible with the diagnosis but either further investigation is required
OR additional investigation of the case did not provide supporting evidence for the diagnosis AND did not identify an alternative diagnosis.

Comments

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

Questions about vaccinia follow-up should be directed to the Bureau of Epidemiology 850-245-4401

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Varicella (Chickenpox)

Merlin reporting code = 05290
Case report form (CRF): *Varicella Surveillance Worksheet*
MERLIN EXTENDED DATA REQUIRED

Clinical description

An illness with acute onset of diffuse (generalized) maculo-papulovesicular rash without other apparent cause.

Laboratory criteria for case classification

- 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

- Significant rise in serum anti-varicella IgG antibody level by any standard serologic assay.

Case classification

Confirmed:

- A clinically compatible illness in a person with laboratory evidence

OR

- A clinically compatible illness in a person who is epidemiologically linked to a confirmed or probable case.

Probable:

A clinically compatible illness.

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 more than 42 days after vaccination (breakthrough disease), the disease is almost always mild with fewer than 50 skin lesions and shorter duration of illness. The rash may also be atypical in appearance (maculopapular with few 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.

Questions about varicella follow-up should be directed to the Department of Health Immunization Program at (850) 245-4342.

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Varicella (Chickenpox) Mortality

Merlin reporting code= 05290
Case report form (CRF): *Varicella Death Investigation Worksheet*
MERLIN EXTENDED DATA REQUIRED
PAPER CRF REQUIRED

Case classification

Confirmed:
A confirmed case of varicella which contributes directly or indirectly to acute medical complications which result in death.

Probable:
A probable case of varicella which contributes directly or indirectly to acute medical complications which result in death.

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.

Questions about varicella mortality follow-up should be directed to the Department of Health Immunization Program at (850) 245-4342.

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Vibriosis (Excluding *Vibrio cholerae* Type O1)

Merlin reporting codes = 00196 Vibriosis (*Grimontia hollisae) (*formerly *Vibrio hollisae)*
= 00193 Vibriosis *(*Other *Vibrio* specie)
= 00195 Vibriosis (*Vibrio alginolyticus)*
= 00198 Vibriosis (*Vibrio cholerae* Type Non-01)
= 00194 Vibriosis (*Vibrio fluvialis*)
= 00197 Vibriosis (*Vibrio mimicus)*
= 00540 Vibriosis (*Vibrio parahaemolyticus)*
= 00199 Vibriosis (*Vibrio vulnificus)*
Case report form (CRF): *Cholera and Other Vibrio Illness Surveillance Report*
MERLIN EXTENDED DATA REQUIRED

Clinical description

An infection of variable severity characterized by diarrhea and vomiting, primary septicemia, or wound infections. Asymptomatic infections may occur, and the organism may cause extra intestinal infections.

Laboratory criteria for case classification

Confirmatory:
Isolation of a species of the family Vibrionaceae (other than toxigenic *Vibrio cholerae* O1 or O139, which are reported as cholera) from a clinical specimen.

Supportive:
Detection of *Vibrio* from a clinical specimen using a non-culture based method.

Case classification

Confirmed:
A person with confirmatory laboratory evidence. Note that species identification and, if applicable, serotype designation (i.e., *Vibrio cholerae* non-O1/non-O139 or *Grimontia hollisae*) should be reported.

Probable:
A clinically compatible illness in a person who is epidemiologically linked to a confirmed case.

Suspect:
A person with supportive laboratory evidence.

Comments

Infections due to **toxigenic** *Vibrio cholerae* O1 or O139 should **NOT** be reported as vibriosis, but **SHOULD** be reported as *Vibrio cholerae* type O1 (Merlin reporting code=00190). Suspect cases **SHOULD** be reported as other *Vibrio* species (Merlin reporting code=00193). When culture results become available for a suspect case, the case should be updated to confirmed and the disease reporting code should be updated accordingly.

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*.

Isolates from all cases must be sent to the Bureau of Public Health Laboratories for confirmation. The Florida Department of Agriculture and Consumer Services (FDACS) 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 information.

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.

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! Viral Hemorrhagic Fever

Merlin reporting code = 6591 Crimean-Congo Hemorrhagic Fever !
= 6592 Ebola Hemorrhagic Fever !
= 6593 Guanarito Hemorrhagic fever !
= 6594 Junin Hemorrhagic Fever !
= 6595 Lassa Fever !
= 6596 Lujo Virus !
= 6597 Machupo Hemorrhagic Fever !
= 6598 Marburg Fever !
= 6599 Sabia-Associated Hemorrhagic Fever !
Case report form (CRF): N/A
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Clinical description

Diagnosis of viral hemorrhagic fever 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.

Viral Hemorrhagic Fever, due to:

- Ebola virus
- Marburg virus
- Crimean-Congo hemorrhagic fever viruses
- Lassa virus
- Lujo virus
- New world arenaviruses (Guanarito, Machupo, Junin, Sabia viruses)

Clinical presentation criteria:

- Fever >40° C AND
- One or more of the following clinical findings:
    - Severe headache
    - Muscle pain
    - Erythematous maculopapular rash on the trunk with fine desquamation 3–4 days after rash onset
    - Vomiting
    - Diarrhea
    - Pharyngitis (arenaviruses only)
    - Abdominal pain
    - Bleeding not related to injury
    - Retrosternal chest pain (arenaviruses only)
    - Proteinuria (arenaviruses only)
    - Thrombocytopenia

Laboratory criteria for case classification

One or more of the following laboratory findings:

- Detection of VHF viral antigens in blood by enzyme-linked immunosorbent assay (ELISA) antigen detection,
- VHF viral isolation in cell culture for blood or tissues,

- Detection of VHF viral genes using reverse transcriptase polymerase chain reaction (RT-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 within the 3 weeks before onset of symptoms:

- Contact with blood or other body fluids of a patient with VHF;
- Residence in or travel to a VHF endemic area;
- Work in a laboratory that handles VHF specimens;
- Work in a laboratory that handles bats, rodents, or primates from endemic areas; OR
- Exposure within the past 3 weeks to semen from a confirmed acute or convalescent case of VHF within the 10 weeks of onset of symptoms.

Case classification

Confirmed:
A clinically compatible illness in a person with laboratory evidence.

Suspect:
A clinically compatible illness in a a person with any of the epidemiologic linkage criteria.

Comments
Detection of a possible case requires immediate notification of the Bureau of Epidemiology which is available 24/7 at (850) 245-4401.

Specimens from all cases must be sent to the Bureau of Public Health Laboratories for confirmation by the CDC.

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! Yellow Fever

Merlin reporting code = 06090
Case report form (CRF): *Florida Confidential Vector-borne Disease Infection CRF*
PAPER CRF REQUIRED

Clinical description

A mosquito-borne viral illness characterized by acute onset and constitutional symptoms followed by a brief remission and a recurrence of fever, hepatitis, albuminuria, and symptoms and, in some instances, renal failure, shock, and generalized hemorrhages.

Laboratory criteria for case classification

- Fourfold or greater rise in yellow fever antibody titer in a patient who has no history of recent yellow fever vaccination and cross-reactions to other flaviviruses have been excluded

OR

- Demonstration of yellow fever virus, antigen, or genome in tissue, blood, or other body fluid.

Case classification

Confirmed:
A clinically compatible illness in a person with laboratory evidence.

Probable:
A clinically compatible illness in a person with supportive serology (stable elevated antibody titer to yellow fever virus [e.g., ≥32 by complement fixation, ≥256 by immunofluorescence assay, ≥320 by hemagglutination inhibition, ≥160 by neutralization, or a positive serologic result by IgM-capture enzyme immunoassay). Cross-reactive serologic reactions to other flaviviruses must be excluded, and the patient must not have a history of yellow fever vaccination.

Comments

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

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! Zika Virus Infection

Merlin reporting code = 06010
Case report form (CRF): *Florida Confidential Vector-borne Disease Infection CRF*
MERLIN EXTENDED DATA REQUIRED

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