Surveillance Case Definitions for *Select* Reportable Diseases in Florida

Florida Department of Health
Bureau of Epidemiology

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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 *Florida Administrative Code*, 64D-3), 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.

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. 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. The most up-to-date list of diseases that require paper submission of case report forms can be seen at: http://www.doh.state.fl.us/DISEASE_CTRL/epi/topics/crforms.html.

Case report forms for diseases under public health surveillance in Florida can be found at: http://www.doh.state.fl.us/disease_ctrl/epi/topics/crforms.html.

Summary of 2013 disease codes with case definition changes: Hansen's disease, leptospirosis, measles, meningitis (bacterial, cryptococcal, mycotic), novel or pandemic influenza A, and rubella.

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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: Bronch wash, wound, eye, middle ear, sputum, stool, urine
Sterile: Blood, CSF, pleural fluid, peritoneal fluid, pericardial fluid, deep tissue specimen taken during surgery (e.g., muscle collected during debridement for necrotizing fasciitis), gallbladder, bone or joint fluid This does not superficial wound aspirates.

NOTATIONS

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

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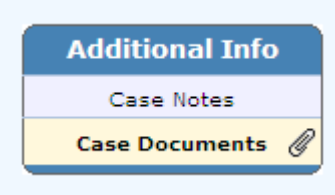
CRF MERLIN ELECTRONIC SUBMISSION:
The case report form (CRF) is available in Merlin. Data on the extended data screens should be complted and the CRF submitted via Merlin. Paper case report forms do not also have to be completed and attached to the case in Merlin.

PAPER CRF REQUIRED:
An electronic extended data or case report form (CRF) screen is not available in Merlin. A paper case report form must be completed. Paper case report forms should be scanned and attached to the cooresponding 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 case report form 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 CASE: 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.

LABORATORY-CONFIRMED CASE: a case that is confirmed by one or more of the laboratory methods listed in the case definition under Laboratory Criteria for Diagnosis.

PROBABLE CASE: a case that is classified as probable for reporting purposes.

SUPPORTIVE or PRESUMPTIVE LABORATORY RESULTS: specified laboratory results that are consistent with the diagnosis, yet do not meet the criteria for laboratory confirmation.

SUSPECT CASE: a case that is classified as suspected for reporting purposes.

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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Acute Arboviral Diseases (neuroinvasive and non-neuroinvasive)

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Case report form: *Florida Confidential Vector-borne Disease Infection Case Report*
CRF MERLIN ELECTRONIC SUBMISSION

Background

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

Clinical description

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

Neuroinvasive disease

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

Non-neuroinvasive disease

Most arboviruses are capable of causing an acute systemic febrile illness (e.g., West Nile fever) that may include headache, myalgias, arthralgias, rash, or gastrointestinal symptoms. Rarely, myocarditis, pancreatitis, hepatitis, or ocular manifestations such as chorioretinitis and iridocyclitis can occur.

Clinical criteria for diagnosis

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

Neuroinvasive disease
An illness characterized by all the following:
- Fever (≥100.4°F or 38°C) as reported by the patient or a healthcare provider
- Meningitis, encephalitis, acute flaccid paralysis, or other acute signs of central or peripheral neurologic dysfunction, as documented by a physician
- Absence of a more likely clinical explanation

Non-neuroinvasive disease
An illness characterized by all the following:
- Fever (≥100.4°F or 38°C) as reported by the patient or a healthcare provider
- Absence of neuroinvasive disease
- Absence of a more likely clinical explanation

Laboratory criteria for diagnosis

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 PCR),

OR
- Seroconversion in virus-specific IgM- or IgG-negative acute sample to IgM or IgG positive convalescent sample (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 and a negative result for other IgM antibodies in CSF for arboviruses endemic to the region where exposure occurred.

Supportive:
Virus-specific IgM antibodies (e.g. EIA/ELISA, MIA, or IFA) in CSF or serum, but no other testing.

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.

Case classification

Confirmed:
Neuroinvasive disease
A case that meets the clinical criteria for neuroinvasive disease with confirmatory laboratory evidence.

Non-neuroinvasive disease
A case that meets the clinical criteria for non-neuroinvasive disease with confirmatory laboratory evidence.

Probable:
Neuroinvasive disease
A case that meets the clinical criteria for neuroinvasive disease with supportive laboratory evidence.

Non-neuroinvasive disease
A case that meets the clinical criteria for non-neuroinvasive disease with supportive laboratory evidence..

Comment

Interpreting arboviral laboratory results

- **Serologic cross-reactivity.** In some instances, arboviruses from the same genus produce cross-reactive antibodies. In geographic areas where two or more closely related arboviruses occur, serologic testing for more than one virus may be needed and results compared to determine the specific causative virus. For example, such testing might be needed to distinguish antibodies resulting from infections (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. 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 cases 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**
  - 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.
  - WNV IgM titers are negative or low positive in dengue fever patients; however the WNV IgG can be quite elevated in dengue patients since IgG strongly cross-reacts between flaviviruses.

Imported arboviral diseases

Human disease cases due to dengue or yellow fever viruses are nationally notifiable to CDC using specific case definitions. However, many other exotic arboviruses (e.g., Chikungunya, Japanese encephalitis, tick-borne encephalitis, Venezuelan equine encephalitis, and Rift Valley fever viruses) are important public health risks for the 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/or convalescent sera from reported cases must be forwarded to the Bureau of Public Health Laboratories for confirmatory testing.

Note

For the Surveillance and Control of Selected Arthropod-borne Diseases in Florida, 2012 Guidebook and additional information about arboviral diseases, please visit: http://www.doh.state.fl.us/Environment/medicine/arboviral/index.html.

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

Reporting code = 13620
Case report form: *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 diagnosis

Laboratory-confirmed *N. fowleri* infection is defined as the 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 that is laboratory-confirmed. When available, molecular characterization should be reported (e.g. genotype).

Comment

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 diagnosis

Laboratory-confirmed *B. mandrillaris* infection is defined as the 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 that is laboratory-confirmed. When available, molecular characterization should be reported (e.g. genotype).

Comment

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 diagnosis

Laboratory-confirmed *Acanthamoeba* spp. infections (excluding keratitis) are defined as the 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 that is laboratory-confirmed. When available, species designation and molecular characterization (e.g., genotype) should be reported.

Comment

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 diagnosis

Laboratory-confirmed *Acanthamoeba* spp. keratitis infections are defined as the detection of *Acanthamoeba* spp.

- Organisms in corneal scraping or biopsy specimens

OR

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

OR

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

Case classification

Confirmed: a clinically compatible illness that is laboratory-confirmed. When available, species designation and molecular characterization (e.g., genotype) should be reported.

Probable: a clinically compatible illness with positive identification of *Acanthamoeba* trophozoites or cysts using confocal microscopy.

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Anaplasmosis/Ehrlichiosis, Human

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: *Tick-Borne Rickettsial Disease CRF*
PAPER CRF REQUIRED

See Ehrlichiosis for case definition listing

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! Anthrax

Reporting code = 02200
Case report form: 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 diagnosis

Definitive (one of the following):

- Isolation of *Bacillus anthracis* from a clinical specimen by the Laboratory Response Network (LRN),
- Demonstration of *B. anthracis* antigens in tissues by immunohistochemical staining using both *B. anthracis* cell wall and capsule monoclonal antibodies;
- Evidence of a four-fold rise in antibodies to protective antigen between acute and convalescent sera or a fourfold change in antibodies to protective antigen in paired convalescent sera using Centers for Disease Control and Prevention (CDC) quantitative anti-PA IgG ELISA testing;
- 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).

Suggestive laboratory evidence (one of the following):

- 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);
- Positive result on testing of clinical serum specimens using the Quick ELISA Anthrax-PA kit;
- Detection of Lethal Factor (LF) in clinical serum specimens by LF mass spectrometry;
- Positive result on testing of culture from clinical specimens with the RedLine Alert test.

Case classification

Confirmed: a clinically compatible case that is laboratory-confirmed.

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

- Epidemiological link to a documented anthrax environmental exposure

OR

- Suggestive laboratory evidence.

Suspect: a clinically compatible case suggestive of one of the know anthrax clinical forms AND no confirmatory or suggestive laboratory evidence AND no epidemiologic evidence relating it to anthrax.

Comment

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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Arsenic Poisoning

Reporting code = 98080
Case report form: *EH 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 diagnosis

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 case that meets the laboratory criteria for diagnosis.

Probable: a clinically compatible case in which a high index of suspicion exits (patient's exposure history regarding location and time) or the case is epidemiologic linked to a confirmed case.

Comment

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

Reporting code = 00510 (Foodborne)
= 00511 (Infant)
= 00513 (Wound)
= 00512 (Other, Unspecified)
Case report form *Botulism Alert Summary*
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 diagnosis

- 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 case that is laboratory-confirmed or occurs among persons who ate the same food as persons who have laboratory-confirmed botulism.

Probable: a clinically compatible case with an epidemiologic link (e.g., ingestion of a home-canned food within the previous 48 hours).

Comment

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 diagnosis
- Detection of botulinum toxin in stool or serum

OR
- Isolation of *Clostridium botulinum* from stool.

Case classification
Confirmed: a clinically compatible case that is laboratory-confirmed, occurring 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 diagnosis
- Detection of botulinum toxin in serum

OR
- Isolation of *Clostridium botulinum* from wound.

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

Botulism, Other

Clinical description
An illness in a patient aged $\geq$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 diagnosis

- Detection of botulinum toxin in clinical specimen

OR

- Isolation of *Clostridium botulinum* from clinical specimen.

Case classification

Confirmed: a clinically compatible case that is laboratory-confirmed 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

reporting code = 02300
case report form: *Brucellosis Case Report*
CRF MERLIN ELECTRONIC SUBMISSION

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 diagnosis

Confirmed:

- 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.
-

Probable:

- *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 PCR assay.

Case classification

Confirmed: a clinically compatible illness that is laboratory-confirmed.

Probable: a clinically compatible illness that is epidemiologically linked to a confirmed case OR a clinically compatible illness that meets the probably laboratory criteria for diagnosis.

Comment

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

Reporting code = 03840
Case report form: N/A
NO CRF REQUIRED

Clinical description
A diarrheal illness of variable severity.

Laboratory criteria for diagnosis
Confirmed: isolation of *Campylobacter* spp. in a clinical specimen.

Suspect: detection of *Campylobacter* spp. in a clinical specimen using non-culture based laboratory methods.

Case classification
Confirmed: a case that meets the confirmed laboratory criteria for diagnosis.

Probable: a clinically compatible case that is epidemiologically linked to a confirmed case of campylobacteriosis. Diarrhea must be present to be clinically compatible.

Suspect: a case that meets the suspect laboratory criteria for diagnosis.

Comment
The use of non-culture methods as standalone tests for the direct detection of *Campylobacter* in stool appears to be increasing. There is limited data available about the performance characteristics of these assays. Specimens with positive non-culture test results should be culture confirmed if possible.

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Carbon Monoxide Poisoning

Reporting code = 98600
Case report form: *Carbon Monoxide Poisoning Reporting Form*
CRF MERLIN ELECTRONIC SUBMISSION

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 and/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 diagnosis

Biologic: elevated carboxyhemoglobin (COHb) concentration found in blood specimen determined by laboratory tests (elevated levels of carboxyhemoglobin should be interpreted in light of endogenous production, patient smoking status, and exposures to second hand smoke)
OR
Environmental: detection of CO from environmental monitoring data as provided by first responders (Fire Department, Hazmat, etc.), environmental consultants, or other sources if deemed reliable.

Case classification

Unintentional CO poisoning cases fitting one of the following classifications are reportable.

Confirmed:

- A case with signs and symptoms consistent with acute CO poisoning and a confirmed elevated COHb level (≥9%), as determined by either a blood specimen (see laboratory criteria for diagnosis) or pulse CO-oximetry,

OR

- A case with signs and symptoms consistent with acute CO poisoning (in absence of clinical laboratory data), with supplementary evidence in the form of environmental monitoring data suggesting exposure from a specific poisoning source,

OR

- A case with a reported blood specimen (in the absence of clinical and environmental laboratory data) with COHb level that is equal to or greater than a volume fraction of 0.12 (12%).
-

Probable:

- A case with signs and symptoms consistent with acute CO poisoning and the same environmental monitoring evidence of exposure with the same environmental exposure as that of a confirmed case (no laboratory and/or environmental monitoring evidence of exposure present),

OR

- A case with signs and symptoms consistent with acute CO poisoning and history of environmental monitoring evidence of exposure with smoke inhalation secondary to conflagration (explosive fire) (no laboratory and/or environmental monitoring evidence of exposure present),

OR

- A case with a reported blood specimen of COHb level that is equal to or greater than a volume fraction of 0.09 (9%) and less than a volume fraction of 0.12 (12%), (9%≤ COHb ≤ 12%) in the absence of compatible symptoms or environmental monitoring data.

Suspect: a case with signs and symptoms consistent with acute CO poisoning and a history consistent with recent exposure to carbon monoxide.

Comment

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 dependant 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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! Cholera, *Vibrio*

Reporting code = 00190 Vibrio cholerae Type-O1
Case report form: *Cholera and Other Vibrio Illness Surveillance Report*
PAPER CRF REQUIRED AND MERLIN OUTBREAK MODULE

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

Laboratory criteria for diagnosis
- 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 that is laboratory-confirmed.

Comment
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. Toxigenic production for *V. cholerae* O1 or O139 must be performed by CDC.

Note
Infections due to *Vibrio cholerae* non-O1 should be reported as *Vibrio*, infections (code 00198) *Vibrio cholerae,* non-O1.

Any available isolates of the organism must be sent to the Bureau of Public Health Laboratories for confirmation and serotyping. Toxigenic production for *V. cholerae* O1 or O139 must be performed by CDC. This condition has been identified as a potential bioterrorism agent by the CDC.

Due to the outbreak of cholera in Haiti starting in fall 2010, an alternate case definition was developed; please refer to this document "Guidance for Haiti-related Toxigenic *Vibrio cholerae* Type 01 Case Reporting for County Health Departments" as long as a response to the Haiti cholera outbreak is occurring. The document above can be found on the web: http://www.doh.state.fl.us/disease_ctrl/epi/Acute/cholera.htm.

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Ciguatera Poisoning

Reporting code = 98809
Case report forms:
1. *Foodborne Person-to-Person Transmission, Animal Contact*
2. *Ciguatera Case Report Form V30*
CRF MERLIN ELECTRONIC SUBMISSION

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 diagnosis
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 patient with a history of fish consumption in the 24 hours before onset of symptoms.

Comment
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)

Reporting code = 04610
Case report form: *Creutzfeldt-Jakob Disease Work Sheet*
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 diagnosis

- 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.

Comment

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.

Cryptosporidiosis

Reporting code = 13680
Case report form: *Risk Factors 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 diagnosis

Confirmed: 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).

Probable: the 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 case that is diagnosed with *Cryptosporidium* spp. infection based on laboratory testing using a method listed in the confirmed criteria.

Probable:

- A case with supportive laboratory test results for *Cryptosporidium* spp. infection using a method listed in the probable laboratory criteria. 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 case that meets the clinical criteria and is epidemiologically linked to a confirmed case. Diarrhea must be present to meet clinical criteria.

Comment

Persons who have a diarrheal illness and are epidemiologically linked to a probable case because that individual was only diagnosed with cryptosporidiosis by an immunocard/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

Reporting code = 00720
Case report form: *Cyclosporiasis Surveillance CRF*
CRF MERLIN ELECTRONIC SUBMISSION

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 diagnosis

- 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 case that is laboratory-confirmed.

Probable: a clinically compatible case that is epidemiologically linked to a confirmed case.

Comment

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

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Dengue Fever

Reporting code = 06100
Case report form: *Vector-borne Disease Infection CRF*
CRF MERLIN ELECTRONIC SUBMISSION

Clinical description

Dengue fever (DF) is most commonly an acute febrile illness defined by the presence of fever and two or more of the following, retro-orbital or ocular pain, headache, rash, myalgia, arthralgia, leukopenia, or hemorrhagic manifestations (e.g., positive tourniquet test, petechiae; purpura/ecchymosis; epistaxis; gum bleeding; blood in vomitus, urine, or stool; or vaginal bleeding) but not meeting the case definition of dengue hemorrhagic fever. Anorexia, nausea, abdominal pain, and persistent vomiting may also occur but are not case-defining criteria for DF.

Dengue hemorrhagic fever (DHF) is characterized by all of the following:

- Fever lasting from 2-7 days
- Evidence of hemorrhagic manifestation or a positive tourniquet test
- Thrombocytopenia (≤100,000 cells per mm^3)

  AND one of the following:
  - Evidence of plasma leakage shown by hemoconcentration (an increase in hematocrit ≥20% above average for age or a decrease in hematocrit ≥20% of baseline following fluid replacement therapy),
  - Pleural effusion,
  - Ascites, or
  - Hypoproteinemia

Dengue shock syndrome (DSS) has all of the criteria for DHF plus circulatory failure as evidenced by:

- Rapid and weak pulse and narrow pulse pressure (<20mm Hg)

OR

- Age-specific hypotension and cold, clammy skin and restlessness.

Laboratory criteria for diagnosis

Confirmatory:

- Isolation of dengue virus from or demonstration of dengue-specific arboviral antigen or genomic sequences in tissue, blood, cerebropspinal fluid (CSF), or other body fluid by culture, polymerase chain reaction (PCR) test, immunofluorescence, 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 fourfold rise in plaque reduction neutralization test (PRNT) end point titer (as expressed by the reciprocal of the last serum dilution showing a 90% reduction in plaque counts compared to the virus infected control) between dengue viruses and other flaviviruses tested in a convalescent serum sample;

OR

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

Supportive:
A positive IgM antibody test on a single acute- or convalescent-phase serum specimen to one or more dengue virus antigens).

Epidemiologic linkage criteria

- Travel to a dengue endemic country or presence at a location with an ongoing outbreak within previous 2 weeks of dengue-like illness

AND

- Association in time and place with a confirmed or probable dengue case.

Case classification

Confirmed: a clinically compatible case with confirmatory laboratory evidence.

Probable: a clinically compatible case with supportive laboratory evidence.

Suspect:

- A clinically compatible illness in a person ≥18-years-old with both epidemiologic linkage criteria

OR

- A febrile illness in a person <18-years-old with confirmatory or supportive laboratory evidence.

Comment

Cases meeting the criteria for DHF or DSS should be be reported as dengue hemorrhagic fever (code=06101), not as dengue fever (code=06100).

Dengue re-infection:
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. 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 dengue and West Nile infections:

- 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.
- WNV IgM titers are negative or low positive in dengue fever patients; however the WNV IgG can be quite elevated in dengue patients since IgG strongly cross-reacts between flaviviruses.

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 speciment
IgG (paired specimens, acute and convalescent)	≤ 5 days for acute specimen, > 5 days for convalescent. (ideally 2 weeks apart)	Confirmatory	Must be 4 fold increase in titer between acute and convalescent specimen
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 population (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. If only a single serum sample is available for testing, a test for dengue-specific IgM antibody is preferred.			

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

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! Diphtheria

Reporting code = 03290
Case report form: *CDC 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.

Laboratory criteria for diagnosis

- Isolation of *Corynebacterium diphtheriae* from a clinical specimen

OR

- Histopathologic diagnosis of diphtheria.

Case classification

Confirmed: a clinically compatible case that is either laboratory confirmed or epidemiologically linked to a laboratory confirmed case.

Probable: a clinically compatible case that is not laboratory confirmed and is not epidemiologically linked to a laboratory confirmed case.

Comment

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

All diphtheria 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, Human

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: *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 diagnosis

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 immunoglobulin G (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* specific DNA in a clinical specimen via polymerase chain reaction (PCR) assay,

OR

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

OR

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

Supportive:

- Serological evidence of elevated IgG or IgM 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)

OR

- Identification of morulae in the cytoplasm of monocytes or macrophages by microscopic examination.

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, *Ehrlichia 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 polymerase chain reaction (PCR) assay.

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 indirect immunofluorescence assay (IFA) in paired serum samples (one taken in first week of illness and a second 2-4 weeks later),

OR

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

OR

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

OR

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

Supportive:

- Serological evidence of elevated IgG or IgM 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)

OR

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

4. Human ehrlichiosis/anaplasmosis – undetermined:

- See case classification

Exposure

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

Case classification

Confirmed: a clinically compatible case (meets clinical evidence criteria) that is laboratory confirmed.

Probable: a clinically compatible case (meets clinical evidence criteria) that has supportive laboratory results. 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 results.

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

Comment

There are at least three species of bacteria, all intracellular, responsible for ehrlichiosis/anaplasmosis in the U.S.: *Ehrlichia chaffeensis*, found primarily in monocytes, *and Anaplasma phagocytophilum* and *Ehrlichia 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 *Ehrlichia chaffeensis*, 2) human ehrlichiosis caused by *E. ewingii*, 3) human anaplasmosis caused by *Anaplasma 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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Encephalitis, Other (Non-arboviral)

Reporting code = 03236
Case report form: N/A
NO CRF REQUIRED

Clinical description

An illness in which encephalitis is the major manifestation. Symptoms are due to direct invasion and replication of the infectious agent in the central nervous system, resulting in objective clinical evidence of cerebral or cerebellar dysfunction. Symptoms may include headache, fever, nuchal rigidity, altered consciousness, confusion, stupor, coma, seizures, motor weakness, or accentuated deep tissue reflexes. Postinfectious (or parainfectious) encephalitis is excluded.

Case classification

Confirmed: a clinically compatible illness diagnosed by a physician as primary encephalitis.

Comment

Laboratory studies are important in clinical diagnosis but are not required for reporting purposes. Examples of viruses that may cause encephalitis include herpes simplex, coxsackie virus, or other enterovirus.

Cases of encephalitis due to arboviral infection or infection by a vaccine preventable disease should be assessed using those specific case definitions and reported under those disease codes, not here. Encephalitis, other is reserved for cases of primary encephalitis that are not categorized under one of the already reportable disease or conditions.

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Escherichia coli, Shiga Toxin-Producing (STEC)

Reporting code = 00800
Case report form: *E. coli Case Report*
CRF MERLIN ELECTRONIC SUBMISSION

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 diagnosis

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.

Case classification

Confirmed: a case that meets the laboratory criteria for diagnosis. When available, O and H antigen serotype characterization should be reported.

Probable:

- A case with isolation of *E. coli* O157 from a clinical specimen, without confirmation of H antigen or Shiga toxin production,

OR

- A clinically compatible case that is epidemiologically linked to a confirmed or probable case,

OR

- Identification of an elevated antibody titer to a known Shiga toxin-producing *E. coli* serotype from a clinically compatible case.
-

Suspect: a case of postdiarrheal HUS or TTP (see HUS case definition), or identification of Shiga toxin in a specimen from a clinically compatible case without the isolation of the Shiga toxin-producing *E. coli*.

Comment

Both asymptomatic infections and infections at sites other than the gastrointestinal tract, if laboratory confirmed, are considered confirmed cases that should be reported.

Note

Patients with *E. coli* 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 pathogenic *E. coli*.

Isolates from all cases of *E. coli* O157:H7 must be sent to the Bureau of Public Health Laboratories for confirmation and PFGE typing. All Shiga toxin-positive specimens should be sent to the Bureau of Public Health Laboratories 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 and no other enteric pathogens detected should be reported as a suspect case in Merlin, regardless of whether Shiga toxin is confirmed by the Bureau of Public Health Laboratories.

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Giardiasis

Reporting code = 00710
Case report form: 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.

Laboratory criteria for diagnosis

- 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 case that meets the clinical description and the criteria for laboratory confirmation.

Probable: a clinically compatible case that is epidemiologically linked to a confirmed case.

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! Glanders *(Burkholderia mallei)*

Reporting code = 02400
Case report form: 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 diagnosis

Isolation of *Burkholderia mallei* from blood, sputum, urine, or skin lesions. Serologic assays are not available.

Case classification

Confirmed: a clinically compatible case that is laboratory confirmed.

Comment

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)

Reporting code= 03841
Case report form: *Active Bacterial Core Surveillance CRF*
CRF **MERLIN ELECTRONIC SUBMISSION**

Clinical description

Invasive disease caused by *Haemophilus influenzae* may produce any of several clinical syndromes, including meningitis, bacteremia, epiglottitis, or pneumonia.

Laboratory criteria for diagnosis

Isolation of *H. influenzae* from a normally sterile site (e.g., blood or cerebrospinal fluid [CSF] or, less commonly, joint, pleural, or pericardial fluid).

Case classification

Confirmed: a clinically compatible case that is laboratory confirmed.

Probable: a clinically compatible case with detection of *H. influenzae* type b antigen in CSF.

Comment

Cases of all ages should be reported. Serotype should be determined for all *Haemophilus influenzae* isolates because Hib vaccines protect against serotype b organisms only. This testing is especially important for children <15 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, especially those under the age of 15 years, 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)

Reporting code = 03090
Case report form: *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 diagnosis

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 case with confirmatory laboratory evidence.

Suspect: a clinically compatible case with supportive laboratory evidence.

Comment

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 healthcare 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 (Hantavirus Pulmonary Syndrome)

Reporting code = 07869
Case report form: *Hantavirus Pulmonary Syndrome CRF*
PAPER CRF REQUIRED

Clinical description

Hantavirus pulmonary syndrome (HPS), commonly referred to as hantavirus disease, is a febrile illness characterized by bilateral interstitial pulmonary infiltrates and respiratory compromise usually requiring supplemental oxygen and clinically resembling acute respiratory disease syndrome (ARDS). The typical prodrome consists of fever, chills, myalgia, headache, and gastrointestinal symptoms. Typical clinical laboratory findings include hemoconcentration, left shift in the white blood cell count, neutrophilic leukocytosis, thrombocytopenia, and circulating immunoblasts.

Clinical case definition

An illness characterized by one or more of the following clinical features:

- A febrile illness (i.e., temperature >101.0°F [>38.3°C]) in a previously healthy person with bilateral diffuse interstitial edema or clinical diagnosis of acute respiratory distress syndrom (ARDS), or radiographic evidence of noncardiogenic pulmonary edema.
- An unexplained respiratory illness resulting in death.

Laboratory criteria for diagnosis

- Detection of hantavirus-specific IgM or rising titers of hantavirus-specific IgG,

OR

- Detection of hantavirus-specific RNA sequence by polymerase chain reaction in clinical specimens,

OR

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

Case classification

Confirmed: a clinically compatible case that is laboratory confirmed.

Comment

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. Risk factors are contact with rodents in the 6 weeks prior to onset.

Any available specimens must be sent to the Bureau of Public Health Laboratories (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)

Reporting code = 42000
Case report form: 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 diagnosis

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

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

AND

- Renal injury (acute onset) evidenced by either hematuria, proteinuria, or elevated creatinine level (i.e., ≥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 that both meets the laboratory criteria and began within 3 weeks after onset of an episode of acute or bloody diarrhea.

Probable:

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

OR

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

Comment

Some investigators consider HUS and TTP to be part of a continuum of disease. Therefore, criteria for diagnosing TTP on the basis of CNS involvement and fever are not provided because cases diagnosed clinically as 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

Reporting code = 07010
Case report form: *Viral Hepatitis Case Report*
CRF MERLIN ELECTRONIC SUBMISSION

Clinical case definition

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.

Laboratory criteria for diagnosis

IgM antibody to hepatitis A virus (anti-HAV) positive

Case classification

Confirmed:

- A clinically compatible case that is laboratory confirmed

OR

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

Probable: a clinically compatible case that is hepatitis A IgM positive, lacks jaundice or elevated liver enzymes, but has discrete onset of other appropriate symptoms in the absence of another known cause.

Comment

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

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Hepatitis B, Acute

Reporting code = 07030
Case report form: *Viral Hepatitis Case Report*
CRF MERLIN ELECTRONIC SUBMISSION

Clinical case definition

An acute illness with a) discrete onset of symptoms* consistent with acute viral hepatitis **and** either b) jaundice **or** elevated serum aminotransferase (ALT) levels >100 IU/L.

*Symptoms most commonly include: fever, headache, malaise, anorexia, diarrhea, vague abdominal discomfort, nausea and vomiting. Only a small proportion of acute hepatitis B infections will be clinically recognized.

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

Laboratory criteria for diagnosis

- Hepatitis B surface antigen (HBsAg) positive

AND

- (if done) IgM antibody to hepatitis B core antigen (IgM anti-HBc) positive

OR

- Negative HBsAg within 6 months prior to a positive test result (either HBsAg, HBeAg, or HBV DNA NAT including genotype).

Case classification

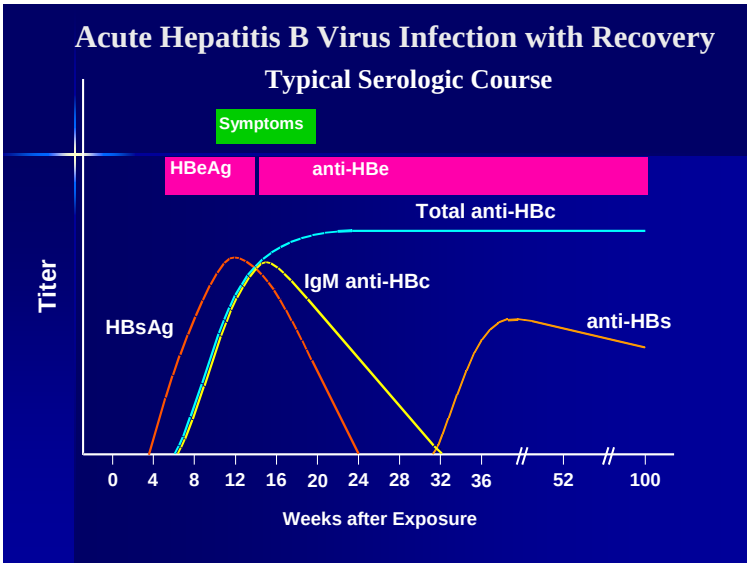
Confirmed:

- A case that meets the clinical case definition is laboratory confirmed, and is not known to have chronic hepatitis B

OR

- A case that does not have acute clinical illness but has a documented negative HBV antigen laboratory test result followed *within 6 months* by a positive test result AND no previous diagnosis of chronic hepatitis B.

Probable: a case that is IgM anti-HBc positive, lacks jaundice or elevated liver enzymes, but has discrete onset and other appropriate symptoms. Probable cases also include patients who have a discrete onset of symptoms, have a positive HBsAg and are epidemiologically linked to a confirmed acute Hepatitis B case.



Comment
Report liver enzyme results for all cases in Merlin.

Note
A table for assisting with interpreting hepatitis B serology can be found on the CDC site:
http://www.cdc.gov/ncidod/diseases/hepatitis/b/Bserology.htm

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Hepatitis B, Chronic

Reporting code = 07032
Case report form: *Viral Hepatitis Case Report*
CRF MERLIN ELECTRONIC SUBMISSION

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

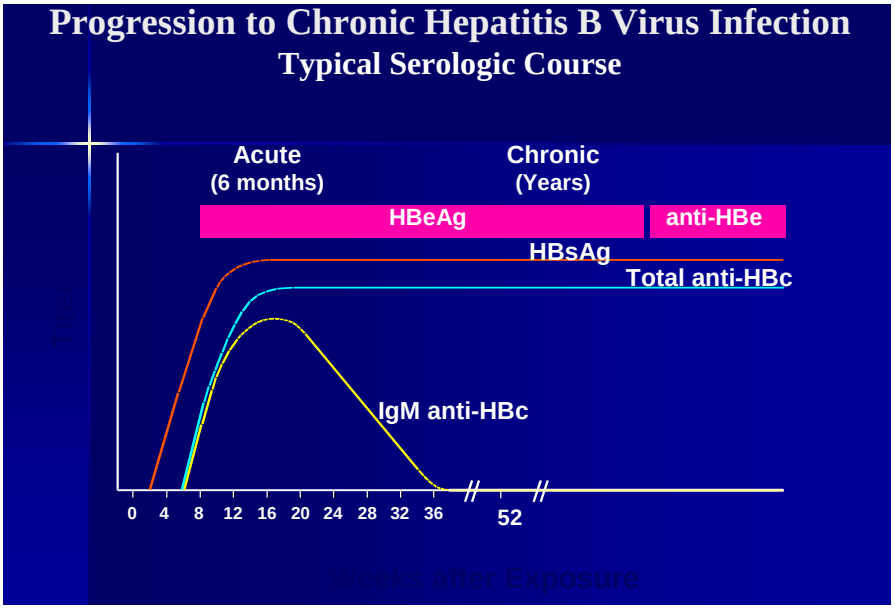
Laboratory criteria for diagnosis
Confirmed:

- IgM antibodies to hepatitis B core antigen (referred to as anti-HBc or IgM HBcAg) negative AND a positive result on one of the following tests: hepatitis B surface antigen (HBsAg), hepatitis B e antigen (HBeAg), or nucleic acid for hepatitis B virus (HBV) DNA (including quantitative, qualitative and genotype testing)

OR

- HBsAg positive, or nucleic acid test for HBV DNA positive (including quantitative, qualitative and genotype testing), or HBeAg positive two times at least 6 months apart (any combination of these tests performed six months apart is acceptable).

Probable:
Any single positive result: HBsAg positive, or nucleic acid test for HBV DNA positive (including quantitative, qualitative and genotype testing), or HBeAg positive



Case classification
Confirmed: A case that is laboratory confirmed.

Probable: A case with a single HBsAg positive, HBV DNA positive, or HBeAg positive lab

result and does not meet the case definition for hepatitis B, acute.

Note

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.

A table for assisting in interpreting hepatitis B serology can be found on the CDC site below:
http://www.cdc.gov/ncidod/diseases/hepatitis/b/Bserology.htm

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Hepatitis B Surface Antigen (HBsAg+), in Pregnant Women

Reporting code = 07039
Case report form: *Viral Hepatitis Case Report*
CRF MERLIN ELECTRONIC SUBMISSION

Clinical case definition

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

Laboratory criteria for diagnosis

Positive Hepatitis B surface antigen (HBsAg) result.

Case classification

Confirmed: a case that meets the clinical case definition and is laboratory confirmed.

Note

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

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Hepatitis B, Perinatal

Reporting code = 07744
Case report form: *Viral Hepatitis Case Report*
CRF MERLIN ELECTRONIC SUBMISSION

Clinical description
Perinatal hepatitis B in the newborn may range from asymptomatic to fulminant hepatitis.

Laboratory criteria
Hepatitis B surface antigen (HBsAg) positive.

Case classification
Confirmed: HBsAg positivity in any infant aged >1–24 months who was born in the U.S. or in U.S. territories to an HBsAg-positive mother.

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

Note
If the mother of a child reported under this code was a resident of Florida during the pregnancy, the mother should be reported as HBsAg+ in a pregnant woman, code 07039.

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Hepatitis C, Acute

Reporting code = 07051
Case report form: *Viral Hepatitis Case Report*
CRF MERLIN ELECTRONIC SUBMISSION

Clinical case definition

An acute illness with a) discrete onset of symptoms (symptoms most commonly include fever, headache, malaise, anorexia, diarrhea, vague abdominal discomfort, nausea and vomiting) **and** either b) jaundice **or** serum alanine aminotransferase levels >400 IU/L.

A documented negative HCV antibody laboratory test result followed within 6 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 diagnosis

A. One or more of the following three criteria:

- Hepatitis C Virus Recombinant Immunoblot Assay (HCV RIBA) positive,

OR

- Nucleic Acid Test (NAT) for HCV RNA Positive (including quantitative, qualitative and genotype testing,

OR

- Antibodies to hepatitis C virus (anti-HCV) screening-test-positive with a signal to cut-off ratio predictive of a true positive as determined for the particular assay as defined by CDC. URL for the signal to cut-off ratios: http://www.cdc.gov/hepatitis/HCV/LabTesting.htm.
-

AND meets the following two criteria (if done):

- IgM anti-HAV negative (if done)

OR

- IgM anti-HBc negative (if done)

B. A documented negative HCV antibody laboratory test followed *within 6 months* by a positive test result

Case classification

Confirmed:

- A case that meets the clinical case definition and is laboratory confirmed, and is not know to have chronic hepatitis C

OR

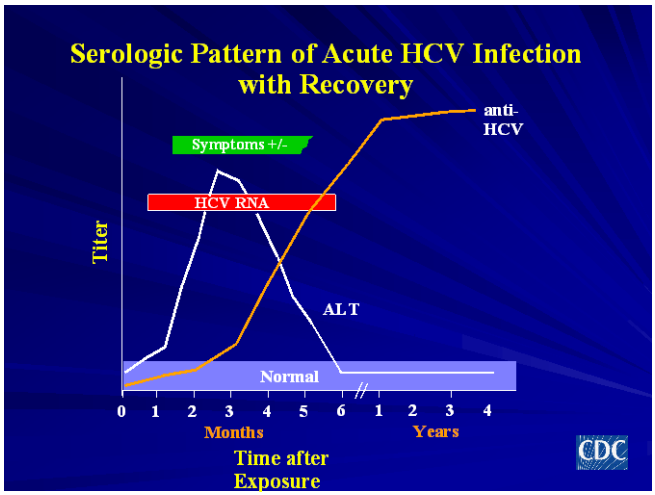
- A case that does not have acute clinical illness but has a documented negative HCV antibody laboratory test followed *within 6 months* by a positive test result AND is not know to have chronic hepatitis C.

Probable: a hepatitis C case with a clinically compatible illness and with positive anti-HCV laboratory results with a signal to cut-off ratio that does not meet the above criteria or is not reported.

Comment

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.

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



Note

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

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Hepatitis C, (Past or Present Infection)

Reporting code = 07054
Case report form: *Viral Hepatitis Case Report*
CRF MERLIN ELECTRONIC SUBMISSION

Clinical case definition

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 may be asymptomatic.

Laboratory criteria for diagnosis

- HCV RIBA positive,

OR

- Nucleic acid test (NAT) for HCV RNA positive (quantitative, qualitative or genotype testing),

OR

- Anti-HCV positive with a signal to cut-off ratio predictive of a true positive as determined for the particular assay as defined by CDC. URL for the signal to cut-off ratios: http://www.cdc.gov/hepatits/HCV/LabTesting.htm.

Case classification

Confirmed: a case that is laboratory confirmed AND that does not meet the case definition of acute hepatitis C.

Probable: a case that is anti-HCV positive (repeat reactive) by EIA and has alanine aminotranferase (ALT or SGPT) values above the upper limit of normal, but the anti-HCV EIA result has not been verified by an additional more specific assay and the signal to cut-off ratio that does not meet the above criteria or is unknown.

Suspect: a case that is Anti-HCV positive, but absent other diagnostic criteria and does not meet the clinical or laboratory criteria for hepatitis C, acute.

Note

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

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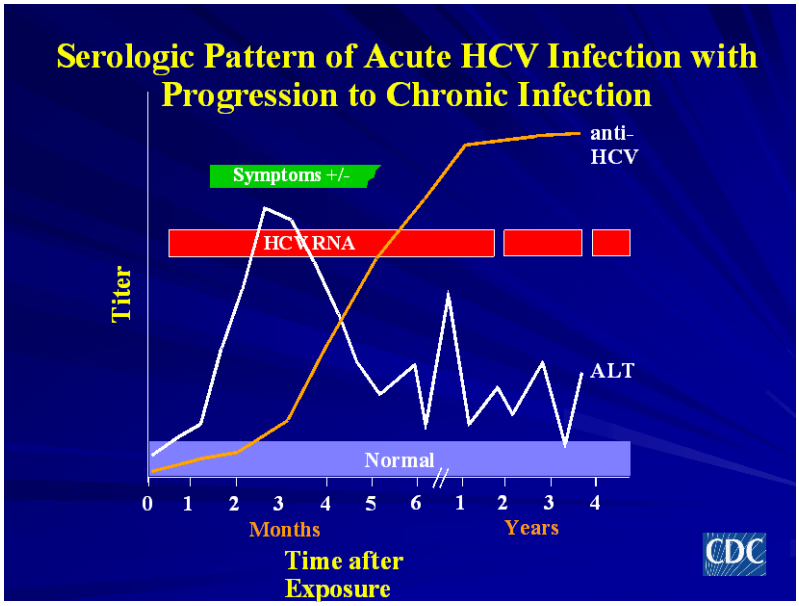


Hepatitis D

Reporting code = 07052
Case report form: *Viral Hepatitis Case Report*
CRF MERLIN ELECTRONIC SUBMISSION

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. Delta hepatitis infection may occur as acute co-infection with hepatitis B virus, or as super-infection in persons with chonic hepatitis B infection.

Laboratory criteria for diagnosis

Evidence of hepatitis B infection:

- Positive IgM anti-HBC

OR

- HBsAg Positive

AND one of the following:

- IgM anti-HDV positive,
- Positive HDV RNA (PCR), or
- Positive total anti-HDV.

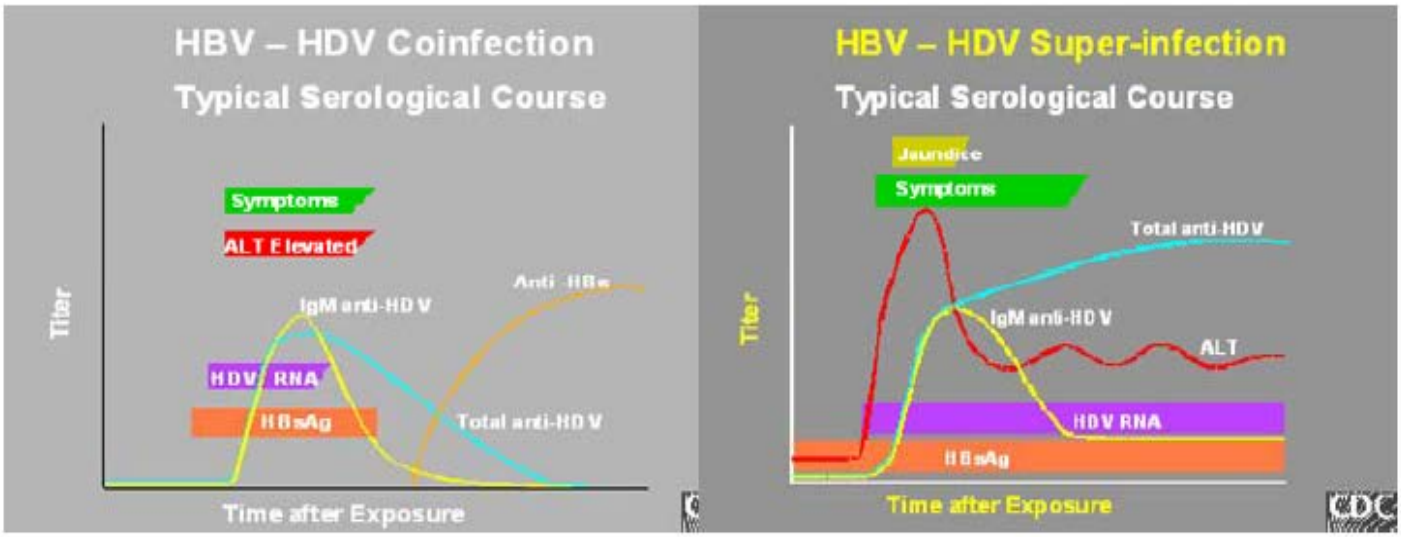
Case classification

Confirmed: a case that meets the clinical case definition and is laboratory confirmed.

Probable: a case that has a discrete onset of symptoms, lacks jaundice or elevated liver enzymes, but is laboratory confirmed.

Comment

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



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Hepatitis E

Reporting code = 07053
Case report form: *Viral Hepatitis Case Report*
CRF MERLIN ELECTRONIC SUBMISSION

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).

Laboratory criteria for diagnosis

Evidence of Hepatitis E infection:

- Positive IgM anti-HEV,

OR

- Positive HEV RNA (PCR),

OR

- Positive total ANTI-HEV (both IgM and IgG)

AND meets all the following criteria:

- IgM anti-HAV negative,
- IgM anti-HBc negative (if done) or HBsAg negative, and
- Anti-HCV Negative (if done).

Case classification

Confirmed: a case that meets the clinical case definition and is laboratory confirmed.

Probable: a case that has a discrete onset of symptoms, lacks jaundice or elevated liver enzymes, but is laboratory confirmed.

Comment

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

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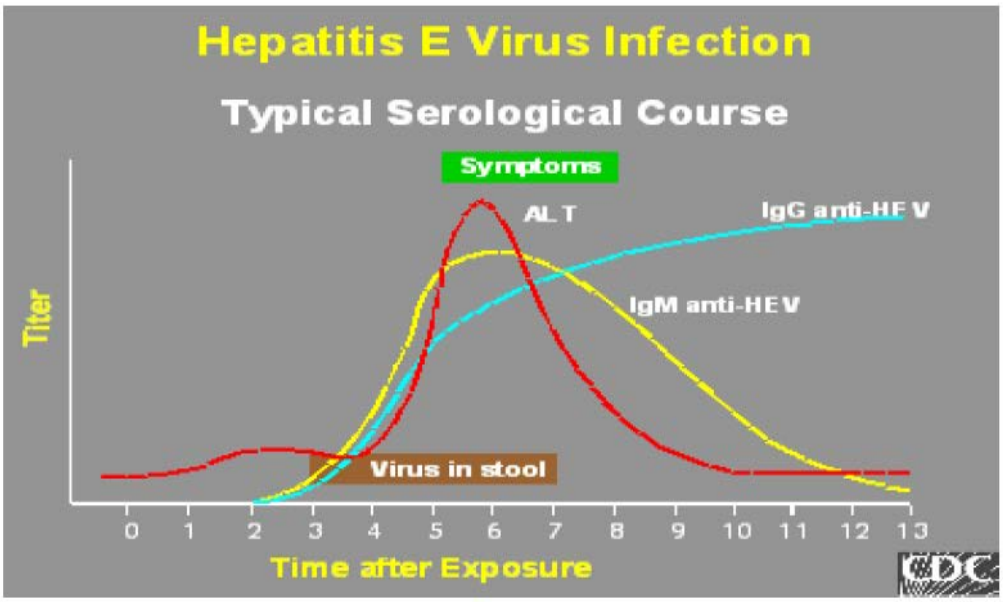

Hepatitis G

Reporting code = 07059
Case report form: *Viral Hepatitis Case Report*
CRF MERLIN ELECTRONIC SUBMISSION

Clinical description
Persons with hepatitis G may or may not have evidence of liver disease.

Laboratory criteria for diagnosis
Hepatitis G RNA positive.

Case classification
Confirmed: a case that meets the clinical case definition and is laboratory confirmed.

Comment
The pathogenic role of HGV remains under investigation. Hepatitis G 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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! Influenza A, Novel or Pandemic Strains

Generic Case Definition

Reporting code = 48790
Case report form: *Avian Influenza Data Collection Tool*

Clinical description

An Illness compatible with influenza virus infection.

Laboratory criteria for diagnosis

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

Criteria for epidemiologic linkage: a) the patient has had contact with one or more persons who either have or had the disease and b) 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.

Criteria for epidemiologic linkage: a) the patient has had contact with one or more persons who either have or had the disease and b) 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.

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

Case classification

Confirmed: a case of human infection with a novel influenza A virus confirmed by CDC's influenza laboratory or using methods agreed upon by CDC and CSTE.

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

Suspect: a case meeting the clinical criteria, pending laboratory confirmation. Any case of human infection with an influenza A virus that is different from currently circulating human influenza H1 and H3 viruses is classified as a suspected case until the confirmation process is complete.

Comment

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.doh.state.fl.us/disease_ctrl/epi/htopics/flu/index.htm
or the CDC Influenza web site: http://www.cdc.gov/flu/.

On December 13, 2006, the U.S. formally accepted the revision of the International Health Regulations, referred to as IHR (2005) (http://www.hhs.gov/news/press/2006pres/20061213.html). The IHR (2005) are an international legal instrument that governs the roles of the WHO and its member countries in identifying and responding to and sharing information about public health emergencies of international concern (http://www.who.int/csr/ihr/IHRWHA58_3-en.pdf). The updated rules are designed to prevent and protect against the international spread of diseases, while minimizing interference with world travel and trade. The revised regulations add human infections with new influenza strains to the list of conditions that Member States must immediately report to WHO. An outbreak of infections with a new influenza A virus that demonstrates human-to-human transmission could signal the beginning of the next pandemic. Robust epidemiologic and laboratory surveillance systems are required for a coordinated public health response to infections with a novel influenza virus subtype. Early detection of an influenza virus with pandemic potential will permit identification of viral characteristics (e.g., genetic sequence, antiviral susceptibility, and virulence) that will affect clinical management and public health response measures. It should also facilitate development of a virus-specific vaccine and testing strategies.

All state public health laboratories have the capacity to test respiratory specimens for influenza viruses with sensitive and specific assays that can detect human and non-human influenza A viruses. They also have the capacity to subtype currently circulating human influenza A H1, H3, and avian H5 (Asian lineage) viruses. The detection or confirmation by a state public health laboratory of an influenza A virus that is unsubtypable with standard methods (e.g., real-time RT-PCR assays for human influenza A(H3) or (H1) viruses), or a non-human influenza virus (e.g., H5) from a human specimen, could be the initial identification of a virus with pandemic potential. Prompt notification of CDC by a state epidemiologist in conjunction with the public health laboratory will permit rapid confirmation of results and reporting to WHO. In addition, it will aid prompt viral characterization, and the development of virus-specific diagnostic tests.

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

Reporting code = 48700
Case report form: *Influenza-Associated Pediatric Deaths 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 diagnosis

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

Comment

*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

Reporting code = 94890
Case report form: N/A
CRF MERLIN ELECTRONIC SUBMISSION

Clinical description

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

Laboratory criteria for diagnosis

Confirmed:

- Blood lead level ≥10 micrograms per deciliter of whole blood measured from a venous specimen

OR

- Blood lead level ≥10 micrograms per deciliter measured from ***TWO*** capillary draws taken ***within 12 weeks*** of one another.

Suspect:

- Blood lead level ≥10 micrograms per deciliter measured from a single capillary draw

OR

- Blood lead level ≥10 micrograms per deciliter of blood with no test type indication.

Case classification

No symptoms necessary; case classifications provided in the "laboratory criteria for diagnosis".

Comment

1. Only report lead poisoning 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 including those who conduct on-site blood lead analysis. Requiring these entities to report all blood lead results to FDOH enables FDOH 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 results must be reported by laboratories, hospitals or physicians, County Health Department disease investigators need to ***only*** report cases in Merlin for individuals whose test results meet the strict definition of suspect or confirmed as described above in laboratory criteria. In addition, lead poisoning disease investigations should performed **for children 0 to16 years** old whose test results meet the strict 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 initial confirmed elevated blood lead level test result of ≥ 10 micrograms per deciliter, 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 micrograms per deciliter with a venous or capillary follow-up test result ≥ 10 micrograms per deciliter, taken ***within 12 weeks*** of one another should not be classified as 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 the *confirmed* case status.

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.doh.state.fl.us/environment/medicine/lead/LeadCaseMGtFieldGuide.pdf

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

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Legionellosis

Reporting code = 48280
Case report form: *Legionellosis Case Report*
CRF MERLIN ELECTRONIC SUBMISSION

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 diagnosis

Confirmed:

- 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.

Suspect:

- 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, immunohistochemstry (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 case that meets at least one of the confirmatory laboratory criteria.

Suspect: a clinically compatible case that meets at least one of the presumptive (suspect) laboratory criteria.

Comment

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

Reporting code = 10090
Case report form: *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 diagnosis

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 PCR) from a clinical specimen.

Supportive:

- *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 case with confirmatory laboratory results.

Probable: a clinically compatible case with at least one of the following:

- Supportive laboratory results, without confirmatory laboratory evidence of *Leptospira* infection

OR

- Epidemiologically linked to a confirmed or probable case or exposure event (adventure race, triatholon, flooding, infected animal, etc. with associated laboratory-confirmed cases).

Comment

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

Reporting code = 02700
Case report form: *Listeria CRF*
MERLIN ELECTRONIC SUBMISSION AND PAPER CRF

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 diagnosis

- 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 case that is laboratory confirmed.

Comment

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

Note

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.

Isolates from all cases should be sent to the Bureau of Public Health Laboratories.

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Lyme Disease

Reporting code = 06959
Case report form: *Lyme Disease Case Report*
CRF MERLIN ELECTRONIC SUBMISSION

Clinical description

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.

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

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.

Laboratory criteria for diagnosis

- Demonstration of diagnostic IgM or IgG antibodies to *B. burgdorferi* in serum or cerebrospinal fluid (CSF) by EIA or IFA screen followed by demonstration of IgM or IgG antibodies by Western Blot (WB, same as immunoblot). When WB is used during the first 4 weeks of disease onset (early Lyme disease), both IgM and IgG procedures should be performed. A positive IgM test result alone is not recommended for use in determining active disease in persons with illness greater than 1 month's duration because the likelihood of a false-positive test result for a current infection is high for these persons. If a patient with suspected early Lyme disease has a negative serology, serologic evidence of infection is best obtained by testing of paired acute- and convalescent-phase

serum samples. Serum samples from persons with disseminated or late-stage Lyme Disease almost always have a strong IgG response to Borrelia burgdorferi antigens.[1]

OR

- Isolation of *Borrelia burgdorferi* from a clinical specimen.

OR

- A single positive IgG immunoblot*.

For the purposes of surveillance, the definition of a qualified laboratory assay is

- A positive culture for *B. burgdorferi*,[1]

OR

- A two-tier testing (EIA or IFA followed by WB) interpreted using established criteria*,

OR

- A single-tier IgG immunoblot seropositivity interpreted using established criteria*[3],

OR

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

***An IgM immunoblot** is considered positive if a band is present at two of the following three locations: 21-25 kDa (OspC)**, 39 kDa (BmpA), and 41 kDa (Fla).
An IgG immunoblot is considered positive if a band is present at five of the following 10 locations: 18 kDa, 21-25 kDa (OspC)**, 28 kDa, 30 kDa, 39 kDa (BmpA), 41 kDa (Fla), 45 kDa, 58 kDa (not GroEL), 66kDa, and 93 kDa.[3]

**The apparent molecular mass of OspC is dependent on the strain of *B. burgdorferi* being tested. The weight of this particular protein can range from 21-25 kDa.

Exposure

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

Case classification

Confirmed:

- A case of EM with a known exposure (as defined above),

OR

- A case of EM with laboratory evidence of infection (as defined above) without a known exposure,

OR

- A case with at least one late manifestation that has laboratory evidence of infection.

Probable: any other case of physician-diagnosed Lyme disease that has laboratory evidence of infection (as defined above).

Suspect:

- A case of EM where there is no known exposure (as defined above) and no laboratory evidence of infection (as defined above),

OR

- A case with laboratory evidence of infection but no clinical information available (e.g., a laboratory report).

Comment

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."

References

1. Centers for Disease Control and Prevention. Recommendations for test performance and interpretation from the Second National Conference on Serologic Diagnosis of Lyme Disease. MMWR MMWR Morb Mortal Wkly Rep 1995; 44:590-1.
2. Dressler F, Whalen JA, Reinhardt BN, Steere AC. Western blotting in the serodiagnosis of Lyme disease. J Infect Dis 1993; 167:392-00.
3. Engstrom SM, Shoop E, Johnson RC. Immunoblot interpretation criteria for serodiagnosis of early Lyme disease. J Clin Microbiol 1995; 33:419-27.
4. Centers for Disease Control and Prevention. Notice to readers: caution regarding testing for Lyme disease. MMWR Morb Mortal Wkly Rep 2005; 54:125-6.

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Malaria

Reporting code = 08460
Case report form: *Malaria Case Surveillance Report*
CRF MERLIN ELECTRONIC SUBMISSION

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 diagnosis

- Detection of malaria parasites in thick or thin peripheral blood films,

OR

- Detection of species specific parasite DNA in a sample of peripheral blood using a polymerase chain reaction (PCR) test,

OR

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

Case classification

Confirmed: detection and specific identification of malaria parasite by microscopy on blood films in a laboratory with appropriate expertise OR detection of *Plasmodium* species by nucleic acid test in any person (symptomatic or asymptomatic) diagnosed in the U.S., regardless of whether the person experienced previous episodes of malaria while outside the country.

Suspect: detection of *Plasmodium* species by rapid diagnostic antigen testing **without confirmation by microscopy or nucleic acid testing** in any person (symptomatic or asymptomatic) diagnosed in the U.S., regardless of whether the person experienced previous episodes of malaria while outside the country.

Comment

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, or malariotherapy).
- Relapsing: renewed manifestation (i.e., of clinical symptoms and/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)

Reporting code = 05590
Case report form: *Measles Surveillance Worksheet*
CRF MERLIN ELECTRONIC SUBMISSION

Clinical case definition

An illness characterized by all the following:

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

Laboratory criteria for diagnosis

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

OR

- Detection of measles virus-specific nucleic acid[1] from a clinical specimen using 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: an acute febrile rash illness[3] that is either laboratory confirmed or epidemiologically linked to a confirmed case. .

Probable: in the absence of a more likely diagnosis, a case that meets the clinical case definition, is not epidemiologically linked to a confirmed case, and has noncontributory or no measles laboratory testing.

[3]Temperature does not need to reach ≥101.0°F (≥38.3°C) and rash does not need to last ≥3 days..

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

Internationally-imported case: an internationally-imported case is defined as a case in which measles results from exposure to measles virus outside the 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.

Note

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)*

Reporting code = 02500
Case report form: 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 diagnosis

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

Probable:

- 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 case that is laboratory confirmed, with or without clinical evidence.

Probable: a case that meets the clinical case definition, with supportive laboratory results and 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).

Comment

✉ **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, Cryptococcal, Mycotic)

Reporting code = 32090
Case report form: *Active Bacterial Core Surveillance CRF*
CRF MERLIN ELECTRONIC SUBMISSION

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 diagnosis

- Isolation of a bacterial, cryptococcal*, or fungal species from the cerebrospinal fluid (CSF);

OR

- Isolation of bacterial or fungal species from brain tissue;

OR

- Positive blood culture for a bacterial, cryptococcal*, or fungal species.

*** 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 case that is laboratory confirmed.

Comment

See the case definitions for *Haemophilus influenzae,* Invasive Disease (03841), Listeriosis caused by *Listeria monocytogenes* (02700), Meningococcal Disease caused by *Neisseria meningitides* (03630), *Streptococcus pneumoniae,* Invasive Disease (04823, and 04830) to report cases of meningitis caused by these species.

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! Meningococcal Disease

Reporting code = 03630
Case report form: *Active Bacterial Core Surveillance CRF*
CRF MERLIN ELECTRONIC SUBMISSION

Clinical description

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

Laboratory criteria for diagnosis

- Isolation of *Neisseria meningitidis* from a normally sterile site (e.g., blood or cerebrospinal fluid [CSF] or, less commonly, joint, pleural, or pericardial fluid) or skin scrapings of purpuric lesions,

OR

- Evidence of *N. meningitidis* DNA using a validated polymerase chain reaction (PCR) obtained from a normally sterile site (e.g., blood or CSF)[1],

OR

- Evidence of *N. meningitidis* antigen by IHC on formalin-fixed tissue or latex agglutination of CSF[2,3],

OR

- Isolation of Gram-negative diplococci from a normally sterile site (e.g., blood or CSF).

Case classification

Confirmed: a clinically compatible case with isolation of *N. meningitidis* from a normally sterile site or skin scrapings of purpuric lesions.

Probable: a clinically compatible case that has either a positive PCR test or a positive IHC test or latex agglutination of CSF.

Suspect: a) clinical purpura fulminans in the absence of a positive blood culture or b) a clinically compatible case and the isolation of Gram-negative diplococci from a normally sterile site.

Comment

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.

[1] Mothershed EA, Sacchi CT, Whitney AM, Barnett GA, Ajello GW, Schmink S, Mayer LW, Phelan M, Taylor TH Jr, Bernhardt SA, Rosenstein NE, Popovic T. 2004. Use of real-time PCR to resolve slide agglutination discrepancies in serogroup identification of *Neisseria meningitidis*. *J Clin Microbiol* 42:320-328.

[2] Guarner J. Greer PW. Whitney A. Shieh WJ. Fischer M. White EH. Carlone GM. Stephens DS. Popovic T. Zaki SR. Pathogenesis and diagnosis of human meningococcal disease using immunohistochemical and PCR assays; *American Journal of Clinical Pathology. 122(5):754-64, 2004 Nov.*

[3] Positive antigen test results from urine or serum samples are unreliable for diagnosing meningococcal disease.

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Mercury Poisoning

Reporting code = 94899
Case report form: *Mercury Poisoning Case Report*
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 diagnosis

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 case that meets the laboratory criteria for diagnosis.

Probable: a clinically compatible case in which a high index of suspicion, (patient's exposure history regarding location and time) exist or an epidemiologic link exists between this case and a laboratory-confirmed case.

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Mumps

Reporting code = 07290
Case report form: N/A
CRF MERLIN ELECTRONIC SUBMISSION

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 diagnosis

Confirmed:

- Isolation of mumps virus in cell culture from clinical specimen

OR

- Detection of mumps nucleic acid (e.g., standard or real time RT-PCR assays).

Probable: positive test for serum anti-mumps IgM antibody.

Epidemiologic Linkage

A case can be epidemiologically linked to a clinically compatible case 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 positive mumps laboratory confirmation for mumps virus with RT-PCR or culture in a patient with 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 case 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 a positive test for serum anti-mumps IgM antibody

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

OR

- A case 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. T hese cases must be carefully assessed epidemiologically to assure that they do not represent a sustained U.S.-acquired chain of transmission or an endemic chain of transmission within the U.S.

Note

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

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

Reporting code = 98800
Case report form: *Investigation of Foodborne Illness*
NO CRF REQUIRED

Clinical case definition

Onset is within a few minutes to a few hours after consumption of epidemiologically implicated shellfish (typically clams, musslels 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 diagnosis

Detection of toxin (brevetoxin) in epidemiologically implicated shellfish.

Case classification

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

Comment

Contact your regional environmental epidemiologist for information.

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Pertussis

Reporting code = 03390
Case report form: *Pertussis Surveillance Worksheet*
CRF MERLIN ELECTRONIC SUBMISSION

Clinical case definition

A cough illness lasting ≥2 weeks with one of the following: paroxysms of coughing, inspiratory "whoop," or posttussive vomiting, without other apparent cause (as reported by a health professional).

Laboratory criteria for diagnosis

- Isolation of *Bordetella pertussis* from clinical specimen

OR

- Positive polymerase chain reaction (PCR) for *B. pertussis*.

Case classification

Confirmed:

- A case that is culture-positive and in which an acute cough illness of any duration is present,

OR

- A case that meets the clinical case definition and is confirmed by positive PCR,

OR

- A case that meets the clinical case definition and is epidemiologically linked directly to a case confirmed by either culture or PCR.

Probable: a case that meets the clinical case definition but is not laboratory confirmed, and not epidemiologically linked to a laboratory-confirmed case.

Comment

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

Reporting code = 09894
Case report form: *Pesticide Incident Monitoring Reporting Form*
CRF MERLIN ELECTRONIC SUBMISSION

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 diagnosis

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.

Comment

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

Reporting code = 02000 Bubonic
= 02050 Pneumonic
Case report form: *Plague Case Investigation Report*
CONTACT STATE HEALTH OFFICE

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 diagnosis

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 case with confirmatory laboratory results.

Probable: a clinically compatible case with presumptive laboratory results.

Suspect: a clinically compatible case without presumptive or confirmatory laboratory results.

Comment

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, Paralytic

Reporting code = 04590
Case report form: N/A
CONTACT STATE HEALTH OFFICE

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 case definition and in which the patient has a neurologic deficit 60 days after onset of initial symptoms, has died, or has unknown follow-up status.

Probable: a case that meets the clinical case definition.

Comment

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, Nonparalytic

Reporting code = 04520
Case report form: N/A
CONTACT STATE HEALTH OFFICE

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.

Comment

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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Psittacosis

Reporting code = 07390
Case report form: *Psittacosis Human Case Surveillance Report*
PAPER CRF REQUIRED

Clinical description

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

Laboratory criteria for diagnosis

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 PCR assay.

Case classification

Confirmed: a clinically compatible case that is laboratory confirmed.

Probable: a clinically compatible case that is epidemiologically linked to a confirmed case OR a clinically compatible illness that has supportive laboratory evidence.

Suspect: clinically compatible human illness 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.

Exposure

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 condutcted with the laboratory to identify any potential lab exposures.

Comment

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 realtime polymerase chain reaction (rtPCR) 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*)

Reporting code = 08301
Case report form: *Q Fever Case Report*
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 evidence

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

Laboratory criteria for diagnosis

Confirmatory:

- Serological evidence of a fourfold change in immunoglobulin G (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) assay,

OR

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

OR

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

Supportive:

- 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.

Note

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

Case classification

Confirmed: a laboratory-confirmed case that either meets clinical case criteria or is epidemiologically linked to a lab confirmed case.

Probable: a clinically compatible case of acute illness (meets clinical evidence criteria for acute Q fever illness) that has laboratory supportive results for past or present acute disease (antibody to Phase II antigen) but is not laboratory confirmed.

Comment

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*)

Reporting code = 08302
Case report form: *Q Fever Case Report*
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 evidence

Newly recognized, culture-negative endocarditis, particularly in a patient with previous valvulopathy or compromised immune system, suspected infection of a vascular aneurysm or vascular prosthesis, or chronic hepatitis, osteomyelitis, osteoarthritis, or pneumonitis in the absence of other known etiology.

Laboratory criteria for diagnosis

Confirmatory:

- 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 PCR assay,

OR

- Demonstration of *C. burnetii* antigen in a clinical specimen by IHC,

OR

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

Supportive:

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

Case classification

Confirmed: a clinically compatible case of chronic illness (meets clinical evidence criteria for chronic Q fever) that is laboratory-confirmed for chronic infection.

Probable: a clinically compatible case of chronic illness (meets clinical evidence criteria for chronic Q fever) that has laboratory supportive results for past or present chronic infection (antibody to Phase I antigen).

Comment

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

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

Reporting code = 07102
Case report form: *Animal Bite Report*
CRF MERLIN ELECTRONIC SUBMISSION

Laboratory criteria for diagnosis

- 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

Reporting code = 07100
Case report form: N/A

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 diagnosis

- 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 case that is laboratory confirmed.

Comment

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

Includes a bite or other significant exposure* to a human by an animal that is either infected with or suspected of being infected with rabies or capable of transmitting herpes B viruses, including exposures from non-human primates.

Reporting code = 07101 Animal Bite
= 07103 Monkey Bite
Case report form: *Confidential Rabies Post Exposure Prophylaxis*
CRF MERLIN ELECTRONIC SUBMISSION

Clinical description
Any bite or other significant exposure.

Laboratory criteria for diagnosis
N/A

Case classification
Confirmed: bite or other significant exposure of a human by a confirmed or suspected rabid animal or any animal capable of transmitting herpes B viruses, including non-human primates.

Comment
The following is requested by HSDE: 1) patient information – age, sex, race, occupation, location of wound or exposure on body site, and whether rabies PEP given (indicate if the patient refuses treatment); 2) animal information – species, vaccinated/non-vaccinated, ownership (stray, wild, owned), and lab rabies results. An animal bite that is 'outbreak associated' is defined as two or more exposures from the same animal.

Only bites or other exposures* where rabies PEP is recommended should be reported under the 07101 Animal Bite code. 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 under the 07103 Monkey Bite code.

*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.

Note
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.doh.state.fl.us/environment/medicine/rabies/InformationforCHDs.html.

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

Rabies PEP Report forms and Animal Bite Report forms are available on the Bureau of Epidemiology website at: http://www.doh.state.fl.us/disease_ctrl/epi/topics/crforms.html. Submission of the Animal Bite Report form is not required.

Additional information can be found on the website: http://www.doh.state.fl.us/Environment/medicine/rabies/rabies-index.html.

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! Ricin Toxicity

Reporting code = 98830
Case report form: 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 diagnosis

- Environmental: detection of ricin in environmental samples.
- Biologic: detection of ricinine in urine samples.

Case classification

Confirmed: a clinically compatible case with laboratory confirmation.

Probable: a clinically compatible case with a high index of suspicion (reliable intelligence or patient history) for ricin exposure or with an epidemiological link to a laboratory-confirmed case.

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 submitted 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

Reporting code = 08200
Case report form: *Tick-Borne Rickettsial Disease Case Report*
PAPER CRF REQUIRED

Clinical description

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 averages one week 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. Serologic tests for RMSF can cross-react with spotted fever group *Rickettsia* species, including infection with *Rickettsia parkeri* (associated with Amblyomma maculatum ticks) and *Rickettsia amblyommi*, has also been reported. The clinical presentation of *R. parkeri* patients 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* from RMSF and has been reported for some other spotted fever rickettsioses.

Clinical evidence

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

Laboratory evidence

For the purposes of surveillance,
Confirmatory:

- Serological evidence of a fourfold change in immunoglobulin G (IgG)-specific antibody titer reactive with *Rickettsia rickettsii* 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* DNA in a clinical specimen via amplification of a specific target by PCR, assay,

OR

- Demonstration of spotted fever group antigen in a biopsy or autopsy specimen by IHC,

OR

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

Supportive:

- Serologic evidence of elevated IgG or IgM antibody reactive with *R. rickettsii* antigen by IFA, enzyme-linked immunosorbent assay (ELISA), dot-ELISA, or latex agglutination.

Note

Acute illness is best detected by polymerase chain reaction (PCR) and immunohistochemical methods (IHC) in skin biopsy specimens, and occasionally by PCR in appropriate whole blood specimens taken during the first week of illness, prior to antibiotic treatment. Serology can also be employed for

detection, however an antibody response may not be detectable in initial samples, and paired acute and convalescent samples are essential for confirmation.

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.

Exposure

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

Case classification

Confirmed: a clinically compatible case (meets clinical evidence criteria) that is laboratory-confirmed.
Probable: a clinically compatible case (meets clinical evidence criteria) that has supportive laboratory results.
Suspect: a case with laboratory evidence of past or present infection but no clinical information available (e.g., a laboratory report).

Comment

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 and suspect cases should be acquired and sent to the Bureau of Public Health Laboratories.

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! Rubella

Reporting code = 05690
Case report form: *Rubella Surveillance Worksheet*
CRF MERLIN ELECTRONIC SUBMISSION

Clinical case definition

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 diagnosis

- Isolation of rubella virus,

OR

- Detection of rubella virus-specific nucleic acid by 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 case that is laboratory-confirmed with or without symptoms

OR

- A case that meets the clinical case definition and is epidemiologically linked to a laboratory-confirmed case.

Probable: in the absence of another known cause, a case that meets the clinical case definition, is not epidemiologically linked to a laboratory-confirmed case, 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 submitted 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

Reporting code = 77100
Case report form: *Congenital Rubella Syndrome Case Report*
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 diagnosis

- 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

- PCR-positive for rubella virus.

Case classification

Confirmed: a clinically compatible case that is laboratory-confirmed.

Probable:

- A case that is not laboratory-confirmed,

AND

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

  OR

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

AND

- Lacks evidence of any other etiology.

Suspect: a case 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.

Note

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 submitted 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

Reporting code = 00300
Case report form: *Salmonellosis CRF*
CRF MERLIN ELECTRONIC SUBMISSION

Clinical description

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

Laboratory criteria for diagnosis

Confirmed: isolation of *Salmonella* from a clinical specimen.

Suspect: detection of *Salmonella* from a clinical specimen using a non-culture based method.

Case classification

Confirmed: a case that meets the confirmed laboratory criteria for diagnosis. When available, O and H antigen serotype characterization should be reported.

Probable: a clinically compatible case that 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. Diarrhea must be present to be clinically compatible.

Suspect: a case that meets the suspect laboratory criteria for diagnosis.

Comment

Both asymptomatic infections and infections at sites other than the gastrointestinal tract, if laboratory-confirmed, are considered confirmed cases and should be reported. Illness due to *Salmonella* serovar Typhi should be reported as Typhoid fever (code=00200), not as salmonellosis (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. PFGE can be performed on *Salmonella* isolates during an outbreak investigation by the Bureau of Public Health Laboratories, if requested.

Typhoid fever (code=00200): all *Salmonella* serovar 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)

Reporting code = 98840
Case report form: 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, and vomiting. Onset is 15 minutes to 10 hours following the consumption of puffer fish caught off the Florida coast. 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. Floirda cases associated with puffer fish consumption experienced milder symptoms and fewer hospitalizations.

Laboratory criteria for diagnosis

Toxin detection in urine or epidemiology linked food specimen.

Case classification

Confirmed: a clinically compatible case that is laboratory-confirmed.

Suspect: a clinically compatible case that is not laboratory-confirmed and has a demonstrated epidemiologic link.

Comment

Contact your regional environmental epidemiologist for information.

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! Severe Acute Respiratory Syndrome-associated Coronavirus (SARS-CoV) disease

Reporting code= 07982
Case report form: *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

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 diagnosis

Tests to detect SARS-CoV are being refined, and their performance characteristics assessed; therefore, criteria for laboratory diagnosis of SARS-CoV are changing. The following are 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 case of SARS-CoV disease in a person who has a clinically compatible illness (i.e., early, mild-to-moderate, or severe) that is laboratory-confirmed.

Probable: a case of SARS-CoV disease in a person who meets the clinical criteria for severe respiratory illness and the epidemiologic criteria for likely exposure to SARS-CoV.

Comment

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 submitted to the Bureau of Public Health Laboratories for confirmation.

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Shigellosis

Reporting code = 00490
Case report form: *Shigellosis CRF*
CRF MERLIN ELECTRONIC SUBMISSION

Clinical description

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

Laboratory criteria for diagnosis

Confirmed: isolation of *Shigella* from a clinical specimen.

Suspect: detection of *Shigella* from a clinical specimen using a non-culture based method.

Case classification

Confirmed: a case that meets the confirmed laboratory criteria for diagnosis. When available, O antigen serotype characterization should be reported.

Probable: a clinically compatible case that 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. Diarrhea must be present to be clinically compatible.

Suspect: a case that meets the suspect laboratory criteria for diagnosis.

Comment

Both asymptomatic infections and infections at sites other than the gastrointestinal tract, if laboratory-confirmed, are considered confirmed cases and should be reported.

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

Reporting code = 05090
Case report form: N/A
NO CRF REQUIRED

Clinical description

An illness with acute onset of fever ≥101º F (≥38.3 ºC) followed by a rash characterized by firm, deep seated vesicles or pustules in the same stage of development without other apparent cause. Clinically consistent cases are those presentations of smallpox that do not meet this classical clinical case definition: a) hemorrhagic type, b) flat type, and c) *variola sine eruptione*. Detailed clinical description is available on the CDC web site: http://www.bt.cdc.gov/agent/smallpox/index.asp.

Laboratory criteria for diagnosis

- Polymerase chain reaction (PCR) identification of variola DNA in a clinical specimen

OR

- Isolation of smallpox (*variola*) virus from a clinical specimen (Level D laboratory only; confirmed by variola PCR).

Case classification

Confirmed: a case of smallpox that is laboratory-confirmed, or a case that meets the clinical case definition that is epidemiologically linked to a laboratory-confirmed case.

Probable: a case that meets the clinical case definition or a clinically consistent case that does not meet the clinical case definition and has an epidemiological link to a confirmed case of smallpox.

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

Comment

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 submitted 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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Staphylococcus aureus, Community-associated Mortality

Reporting code = 04111
Case report form: *Staphylococcus aureus Community-associated mortality*
PAPER CRF REQUIRED

Clinical description
Symptoms may include pneumonia, sepsis, or meningitis which may quickly lead to death.

Clinical case definition
- A fatal outcome

AND
- Death occurred outside a hospital setting *or* if death occurred in the hospital setting a clinical culture positive for *S. aureus* that was obtained ≤48 hours after admission to the hospital.

Laboratory criteria for diagnosis
A laboratory culture positive for *Staphylococcus aureus* from a sterile or respiratory site.

Exclusion Criteria
- Hospitalized within the year prior to death (for children less than one year old, a hospitalization other than childbirth),

OR
- Admission to a nursing home, skilled nursing facility, or hospice within the last year,

OR
- Dialysis within the last year,

OR
- Surgery within the last year,

OR
- Indwelling catheters or medical devices that pass through the skin into the body in the last year.

Case classification
Confirmed: a case that meets the clinical case definition AND laboratory criteria AND does NOT meet any of the exclusion criteria.

Comment
Laboratory Specimens: **Clinical specimens for addition testing must be sent to the Florida Department of Health Bureau of Public Health Laboratories.**

Acceptable specimens include:
- *S. aureus* cultures - a fresh slant on appropriate media is preferred. *S. aureus* cultures must be sent to the Bureau of Public Health Laboratories-Jacksonville.
- For cases with respiratory symptoms: respiratory specimens for viral testing must be collected if possible. Acceptable respiratory specimens for viral testing: nasopharyngeal swabs and aspirates, oropharyngeal aspirates or washes, throat swabs, tracheal aspirates, or broncheoalveolar lavage. Nasopharyngeal aspirates are preferred. Tissue specimens from the respiratory track may also be sent. These specimens may be sent to either the Bureau of Public Health Laboratories-Jacksonville or -Tampa locations.

Swab specimens should be collected using swabs with a Dacron® tip and an aluminum plastic shaft and should be submitted in viral transport medium (e.g., viral culturettes). Swabs with calcium alginate or cotton tips and wooden shafts are unacceptable.

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Staphylococcus aureus, Vancomycin Non-Susceptible

Reporting code = 38100 (Intermediate)
= 38101 (Resistant)
Case report form: 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 diagnosis

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 case that is laboratory-confirmed.

Comment

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

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Staphylococcus Enterotoxin B (SEB)

Reporting code = 38200
Case report form: 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

N/A

Case classification

Confirmed: a clinically compatible case 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.

Comment

Specimens from all cases must be submitted 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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Streptococcal Disease, Invasive, Group A

Reporting code = 03400
Case report form: *Confidential Invasive Group A Streptococcus*
PAPER CRF REQUIRED

Clinical description

Invasive group A streptococcal infections may manifest as any of several clinical syndromes, including pneumonia, bacteremia in association with cutaneous infection (e.g., cellulitis, erysipelas, or infection of a surgical or nonsurgical wound), deep soft tissue infection (e.g., myositis or necrotizing fasciitis), meningitis, peritonitis, osteomyelitis, septic arthritis, postpartum sepsis (i.e., puerperal fever), neonatal sepsis, and nonfocal bacteremia.

Laboratory criteria for diagnosis

Isolation of group A *Streptococcus* (*Streptococcus pyogenes*) by culture from a normally sterile site (e.g., blood or cerebrospinal fluid, or, less commonly, joint, pleural, or pericardial fluid).

Case classification

Confirmed: a clinically compatible case that is laboratory-confirmed.

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Streptococcus pneumoniae, Invasive Disease

Reporting code = 04823 (Drug Resistant)
= 04830 (Susceptible)
Case report form: *Streptococcus pneumoniae Surveillance Worksheet*
CRF MERLIN ELECTRONIC SUBMISSION

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 diagnosis

- 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 case that is laboratory-confirmed.

Comment

Report both resistant and non-resistant isolates. Extended data in Merlin is only required for those cases in people <5 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

Reporting code = 03700
Case report form: *Tetanus Surveillance Worksheet*
PAPER CRF REQUIRED

Clinical case definition

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 healthcare provider.

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

Laboratory criteria for diagnosis

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 healthcare provider

OR

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

Note

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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Toxoplasmosis

Reporting code = 13090
Case report form: N/A
NO CRF REQUIRED

Clinical description

A systemic protozoan disease that is frequently asymptomatic, or may be present as an acute disease resembling infectious mononucleosis with symptoms including fever, sore throat, malaise, headache, myalgias, sweats, anorexia, abdominal pain, chest pain, or cough. Among immunodeficient individuals such as AIDS patients, the disease may include cerebral signs, pneumonia, generalized skeletal muscle involvement, myocarditis, a maculopapular rash, and death.

Laboratory criteria for diagnosis

Demonstration of the *Toxoplasma gondii* in tissues or body fluids, or fourfold change in specific IgG antibody titers in sequential sera.

Case classification

Confirmed: a clinically compatible case that is laboratory-confirmed.

Probable: an asymptomatic case that is laboratory-confirmed.

Comment

IgM antibody detection will confirm acute disease in a patient with a fourfold rise in IgG.

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Trichinellosis

Reporting code = 12400
Case report form: *Trichinosis Surveillance Case Report*
PAPER CRF REQUIRED

Clinical description

A disease caused by ingestion of *Trichinella* larvae. The disease has variable clinical manifestations. Common signs and symptoms among symptomatic persons include eosinophilia, fever, myalgia, and periorbital edema.

Laboratory criteria for diagnosis

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

OR

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

Case classification

Confirmed: a clinically compatible case that is laboratory-confirmed.

Comment

In an outbreak setting, at least one case must be laboratory-confirmed. Associated cases should be reported as confirmed if the patient shared an epidemiologically implicated meal (raw or undercooked meat, particularly pork products or wild game) or ate an epidemiologically implicated meat product and has either a positive serologic test for trichinosis or a clinically compatible illness.

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! Tularemia *(Francisella tularensis)*

Reporting code = 02190
Case report form: *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 diagnosis

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 case that is laboratory-confirmed.

Probable: a clinically compatible case with laboratory results indicative of presumptive infection.

Comment

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 submitted 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

Reporting code = 00200
Case report form: *Typhoid and Paratyphoid Fever Surveillance Report*
PAPER CRF REQUIRED

Clinical description

An illness caused by *Salmonella* serovar 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 diagnosis

Isolation of *S.* Typhi from blood, stool, or other clinical specimen.

Case classification

Confirmed: a clinically compatible case that is laboratory-confirmed.

Probable: a clinically compatible case that is epidemiologically linked to a confirmed case in an outbreak.

Comment

Isolation of the organism is required for confirmation. Serologic evidence alone is not sufficient for diagnosis. Asymptomatic carriage should not be reported as typhoid fever. Infection with *Salmonella* Typhi should only be reported under the typhoid fever disease code (00200) and not as salmonellosis (code 00300).

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

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! Typhus Fever, epidemic *(Rickettsia prowazekii)*

Reporting code = 08000
Case report form: N/A
NO CRF REQUIRED

Clinical description

Several distinct *Rickettsiae* 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

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 case that is laboratory-confirmed.

Probable: a clinically compatible case that is lacking laboratory confirmation.

Comment

Specimens from all cases must be submitted 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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Typhus Fever, endemic *(Rickettsia typhi)*

Reporting code = 08100
Case report form: N/A
NO CRF REQUIRED

Clinical description

Several distinct *Rickettsiae* 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 diagnosis

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

Case classification

Confirmed: a clinically compatible case that is laboratory-confirmed.

Probable: a clinically compatible case that is lacking laboratory confirmation.

Comment

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

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! Vaccinia Disease

Reporting code = 9990
Case report form: 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 diagnosis

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.

Comment

Specimens from all cases must be submitted 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)

Reporting code = 05290
Case report form: *Varicella Surveillance Worksheet*
CRF MERLIN ELECTRONIC SUBMISSION

Clinical description

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

Laboratory criteria for diagnosis

- Isolation of varicella virus from a clinical specimen,

OR

- Direct fluorescent antibody (DFA),

OR

- Polymerase chain reaction (PCR),

OR

- Significant rise in serum varicella immunoglobulin G (IgG) antibody level by any standard serologic assay.

Case classification

Confirmed: a case that is laboratory-confirmed or that meets the clinical case definition and is epidemiologically linked to a confirmed or probable case.

Probable: a case that meets the clinical case definition, is not laboratory-confirmed, and is not epidemiologically linked to another probable or confirmed case.

Comment

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 in the case of 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 Mortality

Reporting code= 05290
Case report form: *Varicella Death Investigation Worksheet*
CRF MERLIN ELECTRONIC SUBMISSION AND CRF

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.

Comment

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

(see also Cholera, *Vibrio*)

Reporting codes = 00193 *Vibrionaceae*, other (formerly *Vibrio*, other)
= 00194 *V. fluvialis*
= 00195 *V. alginolyticus*
= 00196 *G. hollisae (*formerly *V. Hollisae)*
= 00197 *V. mimicus*
= 00198 *V. cholerae* type non-01
= 00199 *V. vulnificus*
= 00540 *V. parahaemolyticus*
Case report form: *Cholera and* Other *Vibrio Illness Surveillance Report*
CRF MERLIN ELECTRONIC SUBMISSION

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 diagnosis

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.

Case classification

Confirmed: a case that meets the laboratory criteria for diagnosis. Note that species identification and, if applicable, serotype designation (i.e., *Vibrio cholerae* non-O1/non-O139 or *Grimontia hollisae*) should be reported.

Probable: a clinically compatible case that is epidemiologically linked to a confirmed case.

Comment

Infections due to **toxigenic** *Vibrio cholerae* O1 or O139 should **NOT** be reported as Vibriosis, but **SHOULD** be reported as *Vibrio cholerae* type O1 (reporting code=00190)

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 submitted to the Bureau of Public Health Laboratories for confirmation. The Florida Department of Agriculture and Consumer Services (DACS) 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.

A copy of laboratory test results and shellfish tags (where appropriate) should accompany the paper case report form.

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! Viral Hemorrhagic Fever

Reporting code = 07889
Case report form: N/A
CONTACT BUREAU OF EPIDEMIOLOGY

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 evidence

One or more of the following laboratory findings:

- Detection of VHF viral antigens in blood by enzyme-linked immunosorbent assay (ELISA) antigen detection,
- VHF viral isolation in cell culture for blood or tissues,
- Detection of VHF viral genes using reverse transcriptase with polymerase chain reaction amplification (RT-PCR) from blood or tissues, or
- Detection of VHF viral antigens in tissues by immunohistochemistry.

Exposure criteria

One or more of the following exposures within the 3 weeks before onset of symptoms:

- Contact with blood or other body fluids of a patient with VHF,

- Residence in—or travel to—a VHF endemic area,
- Work in a laboratory that handles VHF specimens, or
- 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 that is laboratory-confirmed.

Suspect: a case that meets the clinical and epidemiologic linkage criteria.

Comment

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 submitted to the Bureau of Public Health Laboratories for confirmation by the CDC.

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! Yellow Fever

Reporting code = 06090
Case report form: *Vector-borne Disease Infection Case Report*
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 diagnosis

- 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 case that is laboratory-confirmed.

Probable: a clinically compatible case 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.

Comment

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

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