

10-ID-04

Committee: Infectious Diseases

Title: Public Health Reporting and National Notification for Coccidioidomycosis

I. Statement of the Problem:

In 1994, CSTE passed a resolution recommending key federal agencies provide greater commitment in federal resources for coccidioidomycosis vaccine development (Position Statement 1994-19), and adopted Position Statement 1994-5 adding coccidioidomycosis to the list of conditions under national surveillance in the National Public Health Surveillance System (NPHSS) as a disease of regional importance. CSTE members have repeatedly reaffirmed the importance of surveillance for coccidioidomycosis: in Position Statement 1996-18 “Revised Case Definitions for Public Health Surveillance: Infectious Disease”; in Position Statement 02-ID-09 “Guidelines for U.S. – Mexico Surveillance and Epidemiology Agreement”; in Position Statement 06-ID-03 “Guidelines for U.S. – Mexico Coordination on Epidemiologic Events of Mutual Interest”; and in Position Statement 07-ID-13 “Revision of the Surveillance Case Definition for Coccidioidomycosis.” Additionally, coccidioidomycosis has been classified as a Category B agent for potential bioterrorism.

Starting in 2010, however, because of the recently adopted position statement #08-EC-02 (“Criteria for Inclusion of Conditions on CSTE Nationally Notifiable Condition List ...”), coccidioidomycosis was not included in the Nationally Notifiable Condition List (NNCL) because it failed to meet the criterion of being notifiable in 50% of US states or on 50% or more of the US population. The original reasons for having coccidioidomycosis on the list of conditions under national surveillance, despite it not meeting this NNCL criterion, remain as valid today as they were when CSTE members voted to approve its addition 1994.

II. Background and Justification:

Coccidioidomycosis, also known as Valley Fever, is a systemic fungal disease caused by inhalation of soil-based spores in endemic areas, which include the southwestern United States, parts of Mexico and South America. People living in or visiting these areas can be exposed and get infected. While most infections are not severe, several at risk populations can have severe or disseminated disease resulting in hospitalizations and death.

In 1994, recognizing the large health and economic costs of coccidioidomycosis (estimated to be more than \$60 million in one CA county in the 1990s), CSTE 1) passed a resolution (Position Statement 1994-19) recommending that the U.S. Department of Health and Human Services, the CDC National Center for Infectious Diseases, the CDC National Immunization Program, the NIH National Institute of Allergy and Infectious Diseases, and the U.S. Department of Defense provide greater commitment in federal resources for coccidioidomycosis vaccine development; and 2) adopted Position Statement 1994-5, which recommended permanently adding coccidioidomycosis to the list of conditions under national surveillance in the National Public Health Surveillance System (NPHSS) as a disease of regional importance. At the time of this action, justification for this position statement included the high burden and incidence, frequency

of travel-associated outbreaks in non-endemic states, and the use of national surveillance to establish a need for a forthcoming vaccine. In 2010, because of the 2008 adopted position statement #08-EC-02 (“Criteria for Inclusion of Conditions on CSTE Nationally Notifiable Condition List and for Categorization as Immediately or Routinely Notifiable”), coccidioidomycosis was not included in the NNCL because it failed to meet the criterion of being notifiable in 50% of US states and territories, or in a combination of state/territorial jurisdictions that taken together comprise 50% or more of the US population. Coccidioidomycosis is currently explicitly notifiable in 17 US states, comprising 32% of the US population, and implicitly notifiable in most other states when outbreaks are recognized.

However, the 1994 reasons for having coccidioidomycosis on the list of conditions under national surveillance remain, and today are actually more relevant. Since 2000, coccidioidomycosis incidence has increased substantially in California and Arizona and perhaps in other endemic states, possibly due to climate and land use issues, and continued national surveillance is necessary to track these epidemiological changes. Outbreaks are still frequently reported among visitors, including travelers, workers, and military personnel. Additionally, work towards a vaccine for coccidioidomycosis is progressing; numerous vaccine targets exist and are being evaluated, but ongoing surveillance data are required to understand the need for a vaccine and to identify the populations at risk for severe disease that may benefit most from such a vaccine. Funding for vaccine development has been slow and difficult, with a substantial contribution from private organizations such as the Rotary Clubs. The need for federal commitment and funding for vaccine development remains along with the reasons for continued national surveillance.

III. Statement of the desired action(s) to be taken:

- 1) CSTE requests that CDC adopt this standardized reporting definition for coccidioidomycosis to facilitate more timely, complete, and standardized local and national reporting of this condition.
- 2) States and territories are encouraged to continue surveillance for coccidioidomycosis by legally mandated notification from laboratories and health care providers if they believe coccidioidomycosis to be a disease of public health importance in their state and resources permit. States and territories conducting surveillance for coccidioidomycosis should forward surveillance data to CDC for the purposes of national surveillance.

IV. Goals of Surveillance:

To provide information on the temporal, geographic, and demographic occurrence of coccidioidomycosis to facilitate its prevention and control. To continue to demonstrate the need for vaccine development and other prevention measures by estimation of disease burden and identification of populations at risk for severe disease through states having coccidioidomycosis as a reportable disease.

V. Methods for Surveillance: Surveillance for Coccidioidomycosis should use the following recommended sources of data and the extent of coverage listed in Table V.

Table V. Recommended sources of data for case identification and extent of coverage for ascertaining cases of Coccidioidomycosis.

Source of data for case identification	Coverage	
	Population-wide	Sentinel sites
Clinician reporting	X	
Laboratory reporting	X	
Reporting by other entities (e.g., hospitals, veterinarians, pharmacies)	X	
Death certificates	X	
Hospital discharge or outpatient records	X	
Extracts from electronic medical records	X	
Telephone survey		
School-based survey		
Other _____		

VI. Criteria for case identification

A: Narrative: A description of suggested criteria that may be for case ascertainment of a specific condition.

Report any illness to public health authorities that meets the following criteria:

Clinical Description

Infection may be asymptomatic or may produce an acute or chronic disease. Although the disease initially resembles an influenza-like or pneumonia-like febrile illness primarily involving the bronchopulmonary system, dissemination can occur to multiple organ systems.

Clinical Criteria

An illness characterized by one or more of the following:

- Influenza-like signs and symptoms (e.g., fever, chest pain, cough, myalgia, arthralgia, and headache)
- Pneumonia or other pulmonary lesion, diagnosed by chest radiograph
- Erythema nodosum or erythema multiforme rash
- Involvement of bones, joints, or skin by dissemination
- Meningitis
- Involvement of viscera and lymph nodes

Laboratory Criteria

A confirmed case must meet at least one of the following laboratory criteria for diagnosis:

- Cultural, histopathologic, or molecular evidence of presence of *Coccidioides* species, or
- Positive serologic test for coccidioidal antibodies in serum, cerebrospinal fluid, or other body fluids by:

Detection of coccidioidal immunoglobulin M (IgM) by immunodiffusion, enzyme immunoassay (EIA), latex agglutination, or tube precipitin, or

- Detection of coccidioidal immunoglobulin G (IgG) by immunodiffusion, EIA, or complement fixation, or
- Coccidioidal skin-test conversion from negative to positive after onset of clinical signs and symptoms

Case Classification

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

All cases of coccidioidomycosis should be reported.

Frequency of reporting should follow the state health department’s regulations.

B. Table of criteria to determine whether a case should be reported to public health authorities:

Table VI-B. Table of criteria to determine whether a case should be reported to public health authorities. Requirements for reporting are established under State and Territorial laws and/or regulations and may differ from jurisdiction to jurisdiction. These criteria are suggested as a standard approach to identifying cases of this condition for purposes of reporting, but reporting should follow State and Territorial law/regulation if any conflicts occur between these criteria and those laws/regulations.

Criterion	Reporting
<i>Clinical Evidence</i>	
Influenza-like signs and symptoms (e.g., fever, chest pain, cough, myalgia, arthralgia, and headache)	O
Pneumonia or other pulmonary lesion, diagnosed by chest radiograph	O
Erythema nodosum or erythema multiforme rash	O
Involvement of bones, joints, or skin by dissemination	O
Meningitis	O
Involvement of viscera and lymph nodes	O
<i>Laboratory evidence</i>	
Cultural, histopathologic, or molecular evidence of presence of <i>Coccidioides</i> species, or	O
Positive serologic test for coccidioidal antibodies in serum, cerebrospinal fluid, or other body fluids by: <ul style="list-style-type: none"> o Detection of coccidioidal immunoglobulin M (IgM) by immunodiffusion, enzyme immunoassay (EIA), latex agglutination, or tube precipitin, or o Detection of coccidioidal immunoglobulin G (IgG) by immunodiffusion, EIA, or complement fixation, or • Coccidioidal skin-test conversion from negative to positive after onset of clinical signs and symptoms 	O

Notes:

O = At least one of these “O” (Optional) criteria in each category (e.g., clinical evidence and laboratory evidence) in the same column—required to identify a case for reporting.

C. Disease-specific data elements:

Basic demographics, date of onset and outcome, possibly additional clinical and risk factor information for a sample of patients if additional funding becomes available (dissemination and site of involvement, risk factors).

VII. Case Definition for Case Classification

A. Narrative description of criteria to determine whether a case should be classified as confirmed.

Clinical Description

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

- Influenza-like signs and symptoms (e.g., fever, chest pain, cough, myalgia, arthralgia, and headache)
- Pneumonia or other pulmonary lesion, diagnosed by chest radiograph
- Erythema nodosum or erythema multiforme rash
- Involvement of bones, joints, or skin by dissemination
- Meningitis
- Involvement of viscera and lymph nodes

Case Definition

A confirmed case must meet at least one of the following laboratory criteria for diagnosis:

- Cultural, histopathologic, or molecular evidence of presence of *Coccidioides* species, or
- Positive serologic test for coccidioidal antibodies in serum, cerebrospinal fluid, or other body fluids by:
 - Detection of coccidioidal immunoglobulin M (IgM) by immunodiffusion, enzyme immunoassay (EIA), latex agglutination, or tube precipitin, or
 - Detection of coccidioidal immunoglobulin G (IgG) by immunodiffusion, EIA, or complement fixation, or
- Coccidioidal skin-test conversion from negative to positive after onset of clinical signs and symptoms

Case Classification

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

Table VII-B. Table of criteria to determine whether a case is classified

Criterion	Confirmed
<i>Clinical Evidence</i>	
Influenza-like signs and symptoms (e.g., fever, chest pain, cough, myalgia, arthralgia, and headache)	O
Pneumonia or other pulmonary lesion, diagnosed by chest radiograph	O
Erythema nodosum or erythema multiforme rash	O
Involvement of bones, joints, or skin by dissemination	O
Meningitis	O
Involvement of viscera and lymph nodes	O
<i>Laboratory evidence</i>	
Cultural, histopathologic, or molecular evidence of presence of <i>Coccidioides immitis</i> ,	O
Positive serologic test for coccidioidal antibodies in serum or cerebrospinal fluid by: <ul style="list-style-type: none">• Detection of coccidioidal immunoglobulin M (IgM) by immunodiffusion, enzyme immunoassay (EIA), latex agglutination, or tube precipitin, or• Detection of rising titer of coccidioidal immunoglobulin G (IgG) by immunodiffusion, EIA, or complement fixation, or	O
Coccidioidal skin-test conversion from negative to positive after onset of clinical signs and symptoms	O

Notes:

1. O = At least one of these “O” (Optional) criteria in each category (e.g., clinical evidence and laboratory evidence) in the same column—is required to classify a case.

VIII. Period of Surveillance:

Surveillance should be on-going

IX. Data sharing/release and Print criteria:

Notification to CDC of confirmed cases is recommended.

Expectations for sharing case data

- Data should be transmitted to CDC.
- Aggregate data will be published in the Morbidity and Mortality Weekly Report.

X. References:

1. CSTE 1994-19 Position Statement: Encourage Federal Support for Vaccine Development Against Coccidioidomycosis
2. CSTE 1994-5 Position Statement: Regional Surveillance for Coccidioidomycosis
3. CSTE 1996-18 Position Statement: Revised Case Definitions for Public Health Surveillance: Infectious Disease

4. CSTE 02-ID-09 Position Statement: Guidelines for U.S. – Mexico Surveillance and Epidemiology Agreement
5. CSTE 06-ID-03 Position Statement: Guidelines for U.S. – Mexico Coordination on Epidemiologic Events of Mutual Interest
6. CSTE 07-ID-13 Position Statement: Revision of the Surveillance Case Definition for Coccidioidomycosis
7. CSTE 08-EC-02 Position Statement: Criteria for Inclusion of Conditions on CSTE Nationally Notifiable Condition List and for Categorization as Immediately or Routinely Notifiable

XI. Coordination:

Agencies for Response:

- (1) Tom Frieden, MD, MPH
Director
Centers for Disease Control and Prevention
1600 Clifton Road
Atlanta, GA 30333
404-639-7000
tfrieden@cdc.gov

XII. Submitting Author:

- (1) Duc J. Vugia, MD MPH
Chief, Infectious Diseases Branch
California Department of Public Health
Building P, 2nd Floor
850 Marina Bay Parkway
Richmond, CA 94804
(510) 620-3434
Duc.Vugia@cdph.ca.gov

Co-Author:

- (1) Gilberto F. Chavez, MD, MPH
State Epidemiologist
Deputy Director
California Department of Public Health
Chief, Center for Infectious Diseases
1616 Capitol Avenue, MS-7300
Sacramento, CA 95814
916-445-0062
Gil.Chavez@cdph.ca.gov
- (2) Ken Komatsu, MPH
State Epidemiologist
Arizona Department of Health Services
150 N. 18th Avenue, Suite 150
Phoenix, AZ 85007
602-364-3587
Ken.komatsu@azdhs.gov