SHIGELLOSIS

I. DESCRIPTION AND EPIDEMIOLOGY

A. Overview

Shigellosis is a gastrointestinal illness caused by *Shigella* species, which are gram-negative bacilli belonging to the *Enterobacteriaceae* family. There are four species of *Shigella*, each corresponding to a serogroup with one or more serotypes: *S. dysenteriae* (serogroup A with 15 serotypes), *S. flexneri* (serogroup B with 19 serotypes and subserotypes), *S. boydii* (serogroup C with 19 serotypes), and *S. sonnei* (serogroup D with 1 serotype). Approximately 80% of laboratory-confirmed cases of shigellosis reported in the United States are caused by *S. sonnei*. In developing countries, *S. flexneri* is more common, and *S. dysenteriae* can cause epidemics of bacillary dysentery. Humans are the primary reservoir for *Shigella*.

B. Shigellosis in California

Approximately 2,000 laboratory-confirmed cases of shigellosis are reported per year in California. The majority of *Shigella* infections appear to be sporadic rather than outbreak-related. *Shigella* outbreaks have occurred due to person-to-person transmission, such as in day care centers and among men who have sex with men, or to contaminated food or water.

C. Clinical features

Symptoms typically include diarrhea, which may be bloody and accompanied by fever, nausea, and abdominal cramps. Illnesses are generally self-limited and resolve within 5 to 7 days. Asymptomatic and infrequently, chronic infections may occur. The symptoms and severity of shigellosis vary by species and host factors; *S. dysenteriae* serotype 1 can cause severe dysentery, whereas *S. sonnei* generally causes less severe diarrheal illness. Reactive arthritis may occur as a rare complication of *S. flexneri* infection. Hemolytic uremic syndrome (HUS), which is defined as a combination of hemolytic anemia, renal failure, and often a low platelet count, can occur after infection with *S. dysenteriae* serotype 1, though this is rare.

D. Transmission

Shigellae are spread by fecal-oral transmission. Persons may be infected by direct or indirect contact with an infected person's feces. Ways that people become infected with *Shigella* may include: person-to-person contact, especially among contacts of infected children who are not completely toilet trained; ingestion of food, drinks, or untreated recreational water contaminated by an infected person; and exposure to the feces of an infected person during sexual contact.

The infectious dose of *Shigella* is low; 10–100 organisms can cause disease. The risk of transmission exists for the duration of fecal excretion of organisms, and can last from days to approximately four weeks after illness. A temporary carrier state may continue

for several months, but is rare. Asymptomatic carriers can transmit infection. Appropriate antimicrobial treatment may reduce the duration of organism excretion.

E. Incubation Period

The incubation period is generally 1 to 3 days, but may range from 12 hours to 4 days, and is up to 1 week for *S. dysenteriae* serotype 1.

F. Clinical Management

Clinical management decisions should be made by the patient's physician or infectious disease specialist. Resistance to ampicillin and trimethoprim/sulfamethoxazole is common among *Shigella* in the U.S. and resistance or decreased susceptibility to other antibiotics such as ciprofloxacin, azithromycin, and ceftriaxone is increasing (https://emergency.cdc.gov/han/han00411.asp). Therefore, antimicrobial susceptibility test results should be taken into consideration if a patient with shigellosis requires treatment with antibiotics.

II. COUNCIL OF STATE AND TERRITORIAL EPIDEMIOLOGISTS (CSTE) SURVEILLANCE CASE DEFINITION (2017)

The 2017 CSTE surveillance case definition for shigellosis can be found on the CDC Surveillance Case Definitions website (https://wwwn.cdc.gov/nndss/conditions/shigellosis/case-definition/2017/).

CSTE Position Statement

16-ID-04 (https://cdn.ymaws.com/www.cste.org/resource/resmgr/2016PS/16_ID_04.pdf)

Clinical Criteria

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

Laboratory Criteria

Supportive laboratory evidence: Detection of *Shigella spp.* or *Shigella*/enteroinvasive *E. coli* (EIEC) in a clinical specimen using a culture-independent diagnostic testing (CIDT).

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

Epidemiologic Linkage

A clinically compatible case that is epidemiologically linked to a case that meets the supportive or confirmatory laboratory criteria for diagnosis.

Criteria to Distinguish a New Case from an Existing Case:

- A case should not be counted as a new case if laboratory results were reported within 90 days of a previously reported infection in the same individual. CDPH clarifies this further as 90 days from the collection date of the last specimen that yielded the earlier same *Shigella* strain.
- When two or more different serotypes are identified in one or more specimens from the same individual, each should be reported as a separate case.

Case Classification

Probable: A case that meets the supportive laboratory criteria for diagnosis, OR

A clinically compatible case that is epidemiologically linked to a case that meets the supportive or confirmatory laboratory criteria for diagnosis.

Confirmed: A case that meets the confirmed laboratory criteria for diagnosis.

CDPH IDB Comments:

- Of note, enteroinvasive *E. coli* (EIEC) is genetically very similar to *Shigella* and will be detected in CIDTs that detect *Shigella*. Detection of *Shigella* by CIDT without culture confirmation will be classified as a Probable shigellosis case; however, since CIDTs cannot differentiate between *Shigella* and EIEC, detection of *Shigella*/EIEC by CIDT should also be considered a Probable shigellosis case.
- Specimens that are CIDT positive for *Shigella*/ EIEC but culture negative or for which no culture was attempted are classified as Probable cases. (Note: a negative culture result does not negate the CIDT result).
- See 2017 CSTE Case Definition for Shigellosis for additional comments.

III. CASE SURVEILLANCE, INVESTIGATION, AND REPORTING

A. Purpose of Surveillance, Investigation, and Reporting

- To identify shigellosis outbreaks, recognize implicated food vehicles, and interrupt potential sources of ongoing transmission
- To detect new and emerging *Shigella* genetic patterns, antimicrobial resistance patterns, and monitor epidemiologic trends
- To better understand the epidemiology of shigellosis in California, and to develop targeted interventions to decrease rates of illness
- To educate people about how to reduce their risk of *Shigella* infection

B. Local Health Jurisdiction (LHJ) General Case Investigation Recommendations

- Clinical laboratories and healthcare providers are required to report *Shigella* infections by electronic transmission (including fax), telephone, or mail within one working day of identification. Begin case investigation as soon as *Shigella* is reported from a clinical laboratory or healthcare provider. The sooner a patient is interviewed, the better the recall of food and other exposures.
- Patients may be interviewed using the CDPH Shigellosis Case Report Form (CDPH 8639) or a protocol developed by your local health jurisdiction. Please ask about exposures during the 7 days before illness onset. Note that this is most appropriate when patients present with gastroenteritis. If a patient is shedding asymptomatically, the exposure period may not necessarily be a week prior to diagnosis. In those situations, use your judgment to determine if an exposure history is necessary (for example, in the setting of a point-source outbreak).
- Determine if the patient is in a sensitive occupation or setting; administer appropriate infection control recommendations.
- Inform the patient about the possibility of follow up calls for additional information, especially if the patient is later identified to be part of a cluster or outbreak.
- If the patient appears to be part of a point-source outbreak, follow your protocol for foodborne or other point-source outbreak investigations. This should include notifying CDPH about the outbreak (see below).
- All patients should be educated about disease transmission and appropriate risk reduction measures.
- If you require assistance with your case or outbreak investigation, call the CDPH IDB Disease Investigations Section (DIS) at 510-620-3434.
- Ensure that the *Shigella* isolate is saved and forwarded to the local public health laboratory. Isolates may also be forwarded to the CDPH Microbial Diseases Laboratory (MDL) on a case-by-case basis for molecular subtyping (see MDL resources, below).

C. LHJ Reporting

LHJ Reporting Overview

Shigellosis has been a nationally notifiable condition since 1944. Confirmed and probable shigellosis cases must be reported to CDPH. Provisional counts of confirmed and probable shigellosis cases are transmitted weekly to CDC's National Notifiable Diseases Surveillance System (NNDSS), regardless of the CalREDIE process status. However, a confirmed or probable case is included in CDC's final year-end national case count for California only when the CalREDIE process status is "Closed by LHD" or "Pending Release/Clearance". The following five related conditions must be reported to CDPH:

- Shigellosis, Group A (*dysenteriae*)

  - Shigellosis, Group B (*flexneri*)
  - Shigellosis, Group C (*boydii*)
  - Shigellosis, Group D (*sonnei*)
  - Shigellosis, Unspecified

- Shigellosis is not a case report form (CRF)-required condition. However, the use of the state Shigellosis CRF (CDPH 8639) is encouraged, as this would allow for the standardized collection of risk exposures and rapid comparison between jurisdictions if needed, such as when an outbreak is identified. The fields in CalREDIE reflect all of the content of the Shigellosis CRF.
- Antimicrobial susceptibility and Shiga toxin test results entered in the laboratory section will be monitored by CDPH.
- As of January 2020, the CDPH public-facing website has been updated to remove documents that are not compliant with the new requirements of Section 508 of the Rehabilitation Act of 1973. Therefore, some documents intended primarily for LHJs and not the general public, such as CRFs, have been moved to the CalREDIE *Document Repository* under the CDPH tab of the ribbon in the CalREDIE application. This includes the hard copy version of the shigellosis CRF.
- Refer to Shigellosis Case Definition - CDPH Comments for additional details on reporting based on the updated 2017 CSTE surveillance case definitions (https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/ShigellosisCaseDefinition2017.pdf).

Instructions for CalREDIE-participating jurisdictions

- Enter the patient information into CalREDIE upon notification of the case by the clinical laboratory or health care provider. Select the correct "Disease Being Reported" based on available laboratory data (Shigellosis Unspecified, or select the appropriate species if known).
- Reports based on non-culture based methods, i.e., CIDT results, may not specify the *Shigella* species and can be entered as Shigellosis, Unspecified. Please update the incident to reflect the appropriate species if serogrouping results are available prior to case closure.
- If a case meets CSTE criteria to be counted as a new case (new positive specimen collected greater than 90 days from previous case, or a different serotype identified from the same individual), the new case should be entered as a separate incident in CalREDIE.

Instructions for LHJs not participating in CalREDIE (referred to as extended data exchange jurisdictions, or EDEJ)

- For EDEJs, confidential morbidity report (CMR) data must still be provided.
- Reporting case data using the Shigellosis CRF (CDPH 8639) is encouraged.
- The EDEJ may contact DIS (510-620-3434) for the CDPH 8639 if needed.
- If a case meets CSTE criteria to be counted as a new case (new positive specimen collected greater than 90 days from previous case, or a different serotype identified from the same individual), the new case should also be reported to CDPH.

Reporting Outbreaks and Clusters

Suspected shigellosis outbreaks, including point-source outbreaks and whole genome sequencing (WGS) clusters within your jurisdiction, should be reported immediately to CDPH.

- *CalREDIE-participating jurisdictions*: Create a new outbreak in CalREDIE. From the dropdown list for "Disease", select the appropriate disease category such as "GI, Foodborne", "GI, Waterborne", "GI, Other/Unknown", etc.
- *EDEJs*: Notify DIS by phone (510-620-3434). For foodborne outbreaks, complete and submit the Foodborne Disease Outbreak Report form (CDPH 8567) and send to the Infectious Diseases Branch, Surveillance and Statistics Section (address on form).

Special Considerations

Antibiotic-resistant *Shigella*

Multidrug-resistant shigellosis has been increasing in the U.S.; resistance to ampicillin and trimethoprim/sulfamethoxazole is common and resistance and reduced susceptibility to ciprofloxacin, azithromycin, and ceftriaxone is emerging (https://emergency.cdc.gov/han/han00411.asp). To date, transmission of multidrug-resistant *Shigella* has been more common among men who have sex with men (MSM), but may occur in any at risk population. CDPH reviews antimicrobial susceptibility test results, when available, to monitor trends in antibiotic-resistant *Shigella* in California. Enter available antimicrobial susceptibility test results in the laboratory section of CDPH 8639 (or in CalREDIE) and attach additional antibiogram results when available.

Shiga toxin-producing *Shigella*

Shigella dysenteriae serotype 1 was previously the only type of *Shigella* known to produce Shiga toxin (Stx). In recent years, infections with Stx-producing *S. dysenteriae* serotype 4 and *S. flexneri* have been reported in persons with

epidemiologic links to the Caribbean island of Hispaniola. Stx1-producing *S. sonnei* has been documented in California since June 2014; cases due to local transmission within California continue to be identified.

Investigation of Stx-producing *Shigella* cases:

- Suspected cases of Stx-producing *Shigella* may not be immediately recognized if Stx and *Shigella* test results are reported separately. Because of the requirement to report cases of Stx-positive feces immediately, the first report to public health may be for a case of Stx-positive feces, followed by a case of shigellosis in the same individual.
- Cases reported to the LHJ with positive results for both Stx and *Shigella* may be investigated as suspected cases of Stx-producing *Shigella*, though false-positive test results and coinfection with Stx-producing *E. coli* (STEC) and *Shigella* should also be considered.
    - Epidemiologically linked clusters in which some patients have positive *Shigella* laboratory results and others have positive Stx laboratory results may be investigated as suspected Stx-producing *Shigella* clusters.

Reporting of Stx-producing *Shigella* cases:

- Cases confirmed by MDL as Stx-producing *Shigella* should be reported as shigellosis, NOT a case of STEC.
- The Laboratory Information section of the CRF includes fields for both *Shigella* and Stx testing results.
    - *Clinical Laboratory Results* – captures whether the specimen (e.g., stool) was tested for *Shigella (*by culture and culture independent diagnostic testing [CIDT]), as well as Stx. These results alone will not be able to distinguish between infection with Stx-producing *Shigella*, or coinfection with STEC and *Shigella*.
    - *CDPH MDL or Other Reference PHL Results* – captures results specific to the *Shigella* isolate. Data in the "Shiga toxin tests – *Shigella* isolate" section should reflect results of testing by MDL or other reference PHL on the isolate, not the specimen. These results would be able to verify whether the *Shigella* isolate encodes Stx genes or can produce active Stx.

D. Laboratory Considerations/ MDL Resources

The diagnosis of shigellosis is made by the identification of *Shigella* in a clinical specimen, most commonly stool, but can rarely include extra-intestinal sites such as blood and urine. By California Title 17 regulations (see below) effective June 2016, clinical laboratories are required to attempt to isolate *Shigella* if non-culture based test, i.e., CIDT, results are indicative of infection, and are required to send *Shigella* isolates to a public health laboratory. The local public health laboratories may perform confirmatory serogrouping of the *Shigella* isolates. Isolates may be forwarded to the

CDPH Microbial Diseases Laboratory (MDL) on a case-by-case basis for additional testing and molecular subtyping.

- Whole Genome Sequencing (WGS): MDL and local public health laboratories with WGS capacity may perform WGS on selected *Shigella* isolate submissions and upon request by local, state, and/or federal partners to aid outbreak investigations. The sequences are entered into a national database, called PulseNet, and compared to other isolates in the database using core-genome Multilocus Sequence Typing (cgMLST). If a cluster of isolates with closely related sequences are detected, MDL will notify a DIS epidemiologist, and the DIS epidemiologist will notify the communicable disease control staff of the patient's jurisdiction of residence.
- Antimicrobial Susceptibility Testing (AST): MDL does not conduct AST on *Shigella* isolates. Representative *Shigella* isolates that are part of clusters are sent to the CDC National Antimicrobial Resistance Monitoring System (NARMS) for AST.
- Shiga-toxin (Stx) testing: For suspected cases of Stx-producing *Shigella*, the local public health laboratory should attempt to test the *Shigella* isolate for Stx by PCR or immunoassay. These isolates may also be forwarded to MDL for detection of Stx 1 and/or 2 genes by PCR.

MDL provides testing results to the PHL that submitted the specimen, not necessarily the patient's jurisdiction of residence. It is the responsibility of the local PHL to notify the communicable disease control staff of the testing results. Of note, certain clinical laboratories, including Kaiser Permanente, Northern California Region, send specimens directly to MDL. MDL will provide results to the Northern California Kaiser regional laboratory or to any other clinical laboratory that submitted the specimen and the LHJ of residence of the patient.

IV. CASE MANAGEMENT AND PUBLIC HEALTH CONTROL MEASURES

A. Management of Cases

All patients with shigellosis should be educated regarding disease transmission and appropriate infection control measures. Patient educational materials, including guidelines for safe food handling, as well as decreasing risk of person-to-person transmission are available on the CDC *Shigella* - Shigellosis webpage (https://www.cdc.gov/shigella/).

Title 17 Section 2613 specifies that foodhandlers and persons involved in direct care of children, the elderly, or patients in hospitals or other institutional settings shall be excluded until two stool specimens, taken at least 24 hours apart, beginning at least 48 hours after cessation of specific therapy, are negative for *Shigella*. Details may be found in the Applicable State Statutes (Section V).

Additionally, the California Association of Communicable Diseases Controllers (CACDC) has proposed the following guidelines for the management of patients, which are not bound by state statute (and therefore, left to the discretion of the Health Officer):

- For children 5 years and younger in a group setting (e.g., day care): Restrict/ exclude until 2 consecutive stool specimens, taken at least 24 hours apart, and collected at least 48 hours after cessation of antibiotics, are negative.

For additional information, see the CACDC Enteric Disease Matrix (password protected) (https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/CACDC-Enteric-Disease-Matrix-2016-2017.pdf).

Of note, *Shigella* can be shed in stool for several weeks after the resolution of symptoms. Asymptomatic carriers may transmit infection, and the carrier state may persist for months or longer in rare situations.

B. Management of Contacts

Title 17 Section 2613 specifies that any restrictions on contacts are left to the discretion of the local health officer.

CACDC has proposed the following recommendations for the management of symptomatic contacts to confirmed shigellosis patients, which are not bound by state statute (and therefore left to the discretion of the local Health Officer). See CACDC Enteric Disease Matrix for details. No restriction is recommended for asymptomatic contacts.

- For a symptomatic contact in a sensitive occupation: For persons in sensitive occupations who are a symptomatic contact to a confirmed or probable case: Restrict/exclude until 2 consecutive stool specimens, taken at least 24 hours apart, and collected at least 48 hours after cessation of antibiotics, are negative.
- For a symptomatic contact who is NOT in a sensitive occupation: No restriction is needed, though consider one stool specimen (and follow as a case if positive).
- For a contact who is a child 5 years and younger in a group setting, and:
    - Is currently symptomatic: Restrict/exclude until 2 consecutive stool specimens, taken at least 24 hours apart, and collected at least 48 hours after cessation of antibiotics, are negative.
    - Is asymptomatic: No restriction is recommended. Consider collecting one stool specimen if outbreak is suspected (and follow as a case if positive).

C. Infection Control Measures

Environmental inspection is indicated if a commercial food service facility, child care center, or public drinking water supply is suspected as the source of infection.

Hospitalized patients should be cared for using standard precautions. Contact precautions should be used for diapered or incontinent persons for the duration of the illness to control institutional outbreaks.

The patient and their caregivers should be educated regarding effective hand washing, particularly after using the toilet, changing diapers, and before preparing or eating food. The importance of proper hygiene must be stressed, as excretion of the organism may persist for several weeks.

V. APPLICABLE STATE STATUTES AND REGULATIONS

A. California Code of Regulations, Title 17, Public Health, Sections 2500, 2505, 2613:

2500: Health care providers are required to report shigellosis to the local health officer where the patient resides by mailing a report, telephoning, or electronically transmitting a report within one working day of identification of the case or suspected case.

2505: Assembly Bill 186, chaptered on October 7, 2011 amended the CA Health and Safety Code Section 120130 (b), required that the California Department of Public Health (CDPH) "establish a list of communicable diseases and conditions for which clinical laboratories shall submit a culture or a specimen to the local public health laboratory." This list has been added to California Code of Regulations, Title 17, Section 2505 (m).

2505 (m)(2): An isolate or a specimen as listed in this subsection shall be submitted as soon as soon as available to the public health laboratory designated in Section 1075 for the local health jurisdiction where the health care provider is located…. *Shigella* isolates are included in this list.

2505 (m)(3): If there is a laboratory test result indicating infection with any one of the pathogens listed in (m)(2), including identification of Shiga toxin in a clinical specimen, then the laboratory must attempt to obtain a bacterial culture isolate for submission to the public health laboratory in accordance with (m)(2). The laboratory shall take steps necessary to obtain an isolate, including requesting that additional specimens be collected and sending specimens to a laboratory able to carry out bacterial culture as soon as possible.

2613: (a) The period of isolation in accordance with Section 2518 shall be until the acute symptoms have subsided. The patient shall be subject to supervision by the local health officer who may require, at his discretion, release specimens of feces for testing in a laboratory approved by the State Department of Health Services. However, no patient shall be released from supervision to engage in any occupation involving the preparation, serving or handling of food, including milk, to be consumed by individuals other than his immediate family, nor to engage in any occupation involving the direct care of children or of the elderly or of patients in hospitals or other institutional settings until two successive authentic specimens of feces or of rectal swabs, taken at intervals

of not less than 24 hours, beginning at least 48 hours after cessation of specific therapy, if any was administered, have been determined, by a public health laboratory approved by the State Department of Health Services, to be negative for *Shigella* organisms. (See Section 2534.)
(b) Contacts. Restrictions on contacts shall be at the discretion of the local health officer.

B. California Code of Regulations, Title 22, Social Security, Sections 101552, 101626.1:

101626.1(e): Except as specified in Section 101626.1(f), the licensee shall not accept or retain for care any child with any of the following conditions/symptoms/illnesses or combination thereof…(9) Diarrhea (that is, five or more stools in an eight-hour period or an increased number of stools compared to the child's normal pattern, and with increased stool water and/or decreased form), in addition to one or more of the following…(B) Blood or mucus in the stool unless a physician determines that at least one stool culture demonstrates absence of shigella, salmonella, campylobacter, pathogenic E. coli or other pathogens…

101626.1(g): The licensee shall not accept or retain for care any child with any of the following conditions/symptoms/illnesses except as specified…(1) Diarrhea due to confirmed shigella, salmonella or giardia except as specified in Section 101626.1(i)…

101626.1(i): A Level II center may accept a child with diarrhea due to confirmed shigella, salmonella or giardia 24 hours after treatment has been initiated if prior approval is obtained from the Department and the following conditions are met…

C. California Health and Safety Code §113949.1, §113949.2:

It is the intent of the Legislature to reduce the likelihood of foodborne disease transmission by preventing any food employee who is suffering from symptoms associated with an acute gastrointestinal illness, or known to be infected with a communicable disease that is transmissible through food, from engaging in the handling of food until the food employee is determined to be free of that illness or disease, or incapable of transmitting the illness or disease through food as specified in this article.

Section 113949.1(a) When a local health officer is notified of an illness that can be transmitted by food in a food facility or by an employee of a food facility, the local health officer shall inform the local enforcement agency. The local health officer or the local enforcement agency, or both, shall notify the person in charge of the food facility and shall investigate conditions and may, after the investigation, take appropriate action, and for reasonable cause, require any or all of the following measures to be taken…

Section 113949.1(b) For purposes of this section, "illness" means a condition caused by any of the following infectious agents…*Shigella spp*…

Section 113949.2. The owner who has a food safety certificate issued pursuant to Section 113947.1 or the food employee who has this food safety certificate shall instruct all food employees regarding the relationship between personal hygiene and food safety, including the association of hand contact, personal habits and behaviors, and food employee health to foodborne illness. The owner or food safety certified employee shall require food employees to report the following to the person in charge: (a) If a food employee is diagnosed with an illness due to one of the following… *Shigella spp*…

VI. ADDITIONAL RESOURCES

A. General Information/ Patient Education

- CDPH Shigellosis webpage: https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Shigellosis.aspx
- CDC *Shigella* webpage: https://www.cdc.gov/shigella/
- CDC videos on food safety: http://www.cdc.gov/ncezid/dfwed/medscape/foodsafety.html

B. References

- *Control of Communicable Diseases Manual, 20th Edition*. Washington, DC, American Public Health Association, 2014
- CIFOR (Council to Improve Foodborne Outbreak Response) Guidelines: https://cifor.us/products/toolkit
- Foodborne Pathogenic Microorganisms and Natural Toxins Handbook (The Bad Bug Book) 2nd Edition: http://www.fda.gov/Food/FoodborneIllnessContaminants/CausesOfIllnessBadBugBook/
- Red Book Online. Section 3: Summaries of Infectious Diseases, *Shigella* https://redbook.solutions.aap.org/chapter.aspx?sectionid=189640181&bookid=2205
- Centers for Disease Control and Prevention. National Enteric Disease surveillance: Shigella annual report—appendices, 2016. Atlanta: The Centers; 2016 [cited 2020 Feb 11]. https://www.cdc.gov/nationalsurveillance/pdfs/LEDS-Shig-2016-REPORT-508.pdf
- Centers for Disease Control and Prevention Recommendations for Managing and Reporting Shigella Infections with Possible Reduced Susceptibility to Ciprofloxacin: https://emergency.cdc.gov/han/han00411.asp

VII. UPDATES

- June 19, 2017: Original version finalized and completed

- April 6, 2020: Updated the laboratory section to reflect the exclusive use of WGS; updated section IV B. Management of Contacts to reflect updates in the 2017 Enteric Disease Matrix; corrected links, minor formatting and content updates.

VIII. SUMMARY OF ACTION STEPS: SHIGELLOSIS

Action	Specific Steps
☐ Begin case investigation as soon as *Shigella* is reported from a lab or healthcare provider	• Review information in the CDPH IDB Guidance and other resources as needed. • Obtain and review clinical documentation, medical records, and lab reports as applicable. • Contact patient for interview.
☐ Confirm case definition	• To count as a **confirmed case**, only laboratory confirmation that *Shigella* has been isolated from a human specimen is needed. Clinically compatible illness is not necessary. • A **probable case** is a case that meets supportive laboratory criteria for diagnosis (i.e., detection of *Shigella* spp. or *Shigella*/EIEC in a clinical specimen using CIDT), OR a clinically compatible case that is epidemiologically linked to a case that meets the supportive or confirmatory laboratory criteria for diagnosis. • 2017 CSTE surveillance case definition: https://wwwn.cdc.gov/nndss/conditions/shigellosis/case-definition/2017/
☐ Attempt to identify source of exposure	• Use the Shigellosis Case Report form (CDPH 8639) in CalREDIE to guide your interview, or use the protocol set by your local health jurisdiction. • Include as many details that may later trigger memory, such as parties or special events, and inform patient that they may be contacted again. • If patient appears to be part of an outbreak, follow your protocol for outbreak investigations; this should include notifying CDPH about the outbreak. Suspected *Shigella* outbreaks, including point-source outbreaks and WGS clusters within your jurisdiction, should be reported immediately to CDPH.
☐ Implement control measures	• Determine if the patient is in a sensitive occupation or setting (e.g., foodhandler, healthcare worker, or childcare); administer appropriate infection control recommendations. See CACDC Enteric Disease Matrix.
☐ Confirm status of *Shigella* isolate	• Ensure that the *Shigella* isolate is saved and forwarded to a public health laboratory for confirmation as per regulations.

Action	Specific Steps
☐ Report to CDPH; Confirmed and probable shigellosis cases must be reported	• Create CalREDIE incident; select the correct "Disease Being Reported" (Shigellosis, Group A; Shigellosis, Group B; Shigellosis, Group C; Shigellosis, Group D; Shigellosis, Unspecified) based on available laboratory data. • If a patient was initially entered in CalREDIE as Shigellosis Unspecified, but serogrouping results become available, change the incident to the appropriate serogroup before closing. • For cases confirmed by a public health laboratory as Shiga toxin-producing *Shigella*, select the correct "Disease Being Reported" (Shigellosis, Group A; Shigellosis, Group B; Shigellosis, Group C; Shigellosis, Group D). If patient was initially reported in CalREDIE under the condition "Shiga toxin-producing E. coli (STEC), (with or without HUS)", set as "Not a case" and only report under the appropriate shigellosis condition. • CalREDIE NPJs must also complete the corresponding forms.
☐ If the patient appears to be part of a point-source outbreak, follow your protocol for outbreak investigations	• Suspected outbreaks should be reported immediately to CDPH.

If you require assistance with your investigation, call IDB Disease Investigations Section at 510-620-3434.