16-ID-04: SHIGELLOSIS: Case Definition for Case Classification
(https://wwwn.cdc.gov/nndss/conditions/shigellosis/case-definition/2017/)

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/*EIEC in a clinical specimen using a 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.
- 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

- **Confirmed case**

  A case that meets the confirmed laboratory criteria for diagnosis.

- **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.

COMMENT

The use of CIDTs as stand-alone tests for the direct detection of *Shigella/*EIEC in stool is increasing. EIEC is genetically very similar to *Shigella* and will be detected in CIDTs that detect *Shigella*. Specific performance characteristics such as sensitivity, specificity, and positive predictive value of these assays likely depend on the manufacturer and are currently unknown. It is therefore useful to collect information on the type(s) of testing performed for reported shigellosis cases. When a specimen is positive using a CIDT, it is also helpful to collect information on all culture results for the specimen, even if those results are negative.

Culture confirmation of CIDT-positive specimens is ideal, although it might not be practical in all instances. State and local public health agencies should make efforts to encourage reflexive culturing by clinical laboratories that adopt culture-independent

methods, should facilitate submission of isolates/clinical material to state public health laboratories, and should be prepared to perform reflexive culture when not performed at the clinical laboratory. Isolates are currently necessary for molecular typing (PFGE and whole genome sequencing) that are essential for outbreak detection and for antimicrobial susceptibility testing, which is increasingly important because of substantial multidrug resistance among *Shigella.*

CDPH IDB COMMENTS

1. Recent changes to Title 17, Section 2505 specify that the clinical laboratory must attempt to obtain a bacterial culture for CIDT positives for certain pathogens, including *Shigella* (https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/LabReportableDiseases.pdf). Therefore, shigellosis cases are to be confirmed via culture and their isolates submitted to a public health laboratory.
2. 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 should also be considered a Probable shigellosis case.
3. Specimens that are CIDT positive for *Shigella/* EIEC but culture negative or no culture was attempted are classified as Probable cases. (Note: a negative culture result does not negate the CIDT result).
    - For specimens that are CIDT positive but culture negative:
        - On the Shigellosis form in CalREDIE or the Shigellosis Case Report form (CDPH 8639):
            - In the Clinical Laboratory Results section, complete the "Clinical laboratory Shigella culture completed" and "Shigella CIDT identification completed" fields as needed.
            - In the Notes/Remarks section, enter that this case was CIDT positive only and culture negative.
        - Close the case as Probable.
    - For specimens that are CIDT positive but culture was not attempted:
        - On the Shigellosis form in CalREDIE or the Shigellosis Case Report form (CDPH 8639):
            - In the Clinical Laboratory Results section, complete the "Clinical laboratory Shigella culture completed" and "Shigella CIDT identification completed" fields as needed.
            - In the Notes/Remarks section, enter that this case was CIDT positive only and culture was not attempted.
        - Close the case as Probable.
        - Remind the submitting laboratory that they are now required to attempt culture.
4. Per the new CSTE surveillance case definition, a shigellosis case should not be

counted as a new case if the same *Shigella* infection was already reported for the patient within the previous 90 days. After 90 days, any detection of *Shigella* would be counted as a new case regardless of its serotype and/or molecular strain typing. CDPH clarifies this further as 90 days from the collection date of the last specimen that yielded the earlier same *Shigella* strain.

5. When two or more different *Shigella* species are identified from one or more specimens from the same individual, each should be reported as a separate case. This is true regardless of the timing of the specimen collection. If the incubation period is the same for each *Shigella spp.*, risk factors need to be collected and entered into CalREDIE or CDPH 8639 only once.