I. Statement of the Problem

Currently, case confirmation for Shigellosis is dependent on isolation of *Shigella* from a clinical specimen using culture-based methods. However, there has been an increase in the use of non-culture based methods to clinically diagnosis Shigellosis. According to the 2010 case definition for Shigellosis, if *Shigella* is diagnosed by non-culture methods it is classified as “Not a Case”.

At least one laboratory specializing in non-culture based methods for testing infectious agents is being used by physicians in several states for the diagnosis of enteric infections, even though the positive predictive value for these methods are unknown. This particular method can be performed on a stool swab, which is not suitable for further characterization (i.e., serotype and PFGE) if not immediately added to an appropriate preservative.

The increasing use of non-culture based diagnostic methods is concerning for a couple of reasons. One, infections diagnosed in this manner do not meet the current laboratory criteria for case classification. Additionally, national-level efforts to monitor pathogenic enteric infections in order to identify and respond to multi-state outbreaks will be handicapped. A change to the case classification categories for Shigellosis is needed to prevent an increase in underreporting of Shigellosis cases.

II. Background and Justification

*Background*

Shigellosis is characterized by diarrhea with fever, bloody stools, and mucus in the stools, cramps, abdominal pain, tenesmus and nausea. Asymptomatic cases are possible. Food- and waterborne outbreaks may occur. Outbreaks in daycare centers are common. International travelers are at risk of contracting Shigellosis.

*Justification*

Ongoing surveillance of *Shigella* infections is needed to detect and control outbreaks as well as evaluate strategies to prevent *Shigella* infections.

III. Statement of the desired action(s) to be taken
CSTE requests that CDC adopt this new case definition category for Shigellosis in order to accommodate cases diagnosed by non-culture based methods. By adding a “Suspect” category, Public Health will be able to track and assess *Shigella* cases diagnosed by non-culture based methods.

**IV. Goals of Surveillance**

To provide information on the temporal, geographic, and demographic occurrence of Shigellosis to facilitate its prevention and control.

**V. Methods for Surveillance**

Surveillance for Shigellosis should use the sources of data and the extent of coverage listed in Table V below.

**Table V. Recommended sources of data and extent of coverage for ascertaining cases of Shigellosis.**

<table>
<thead>
<tr>
<th>Source of data for case ascertainment</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>clinician reporting</td>
<td>X</td>
</tr>
<tr>
<td>laboratory reporting</td>
<td>X</td>
</tr>
<tr>
<td>reporting by other entities (e.g., hospitals, veterinarians, pharmacies)</td>
<td>X</td>
</tr>
<tr>
<td>death certificates</td>
<td></td>
</tr>
<tr>
<td>hospital discharge or outpatient records</td>
<td>X</td>
</tr>
<tr>
<td>extracts from electronic medical records</td>
<td>X</td>
</tr>
<tr>
<td>telephone survey</td>
<td></td>
</tr>
<tr>
<td>school-based survey</td>
<td></td>
</tr>
<tr>
<td>other ___________________________</td>
<td></td>
</tr>
</tbody>
</table>

**VI. Criteria for Reporting**

Reporting refers to the process of healthcare providers or institutions (e.g., clinicians, clinical laboratories, hospitals) submitting basic information to governmental public health agencies about cases of illness that meet certain reporting requirements or criteria. The purpose of this section is to provide those criteria to determine whether a specific illness should be reported.

**A. Narrative description of criteria to determine whether a case should be reported to public health authorities**
Report any illness to public health authorities that meets any of the following criteria:

1. Any person with *Shigella sp.* isolated from a clinical specimen.
2. Any person with *Shigella sp.* detected using non-culture based methods.
3. A person with diarrhea who is a contact of a person with confirmed *Shigella* infection or is a member of a risk group defined by public health authorities during an outbreak.

*Other recommended reporting procedures*

- All cases of Shigellosis should be reported.
- Reporting should be on-going and routine.
- Frequency of reporting should follow the state health department’s routine schedule.

**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.

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clinical Evidence</strong></td>
<td></td>
</tr>
<tr>
<td>Diarrhea</td>
<td>N</td>
</tr>
<tr>
<td><strong>Laboratory Evidence</strong></td>
<td></td>
</tr>
<tr>
<td>Isolation of <em>Shigella sp</em> from a clinical specimen</td>
<td>S</td>
</tr>
<tr>
<td>Detection of <em>Shigella sp</em> from a clinical specimen using a non-culture based method</td>
<td>S</td>
</tr>
<tr>
<td><strong>Epidemiologic Evidence</strong></td>
<td></td>
</tr>
<tr>
<td>Contact of a confirmed case of Shigellosis</td>
<td>O</td>
</tr>
<tr>
<td>Member of a risk group defined by the public health authorities during an outbreak</td>
<td>O</td>
</tr>
</tbody>
</table>

Notes:
- S = This criterion alone is Sufficient to identify a case for reporting.
- N = All “N” criteria in the same column are Necessary to identify a case for reporting.
- O = At least one of these “O” (Optional) criteria in each category (i.e., clinical evidence and laboratory evidence) in the same column—in conjunction with all “N” criteria in the same column—is required to identify a case for reporting.

**C. Disease Specific Data Elements:**

Disease-specific data elements to be included in the initial report are listed below.
Epidemiological Risk Factors

- Food handler
- Day care center attendee
- Household contact of a day care center attendee
- Day care center worker
- MSM
- Contact with recreational water
- International travel in the 7 days prior to onset
  - Countries visited

Clinical Data

Treatment with antimicrobial agents
- Name of medication
- Date treatment began
- Date treatment ended

Hospitalized

Duration of diarrhea in days

VII. Case Definition

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

Clinical description

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

Laboratory criteria for diagnosis

Suspect: Detection of Shigella from a clinical specimen using a non-culture based method

Confirmed: Isolation of Shigella from a clinical specimen

Case classification

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

Probable: a clinically compatible case that is epidemiologically linked, i.e., is a contact of a confirmed case or a member of a risk group defined by public health authorities during an outbreak.
**Confirmed**: a case that meets the confirmed laboratory criteria for diagnosis. When available, species characterization should be reported.

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

**B. Classification Tables**

Table VII-B lists the criteria that must be met for a case to be classified as confirmed, probable, or suspect.

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

| Criterion | Case Definition | | |
|-----------|-----------------|---|---|---|
| Clinical Evidence | | Confirmed | Probable | Suspect |
| Diarrhea | | N | | |
| Fever | | O | | |
| Bloody stools | | O | | |
| Mucus in stools | | O | | |
| Nausea | | O | | |
| Abdominal cramps | | O | | |
| Tenesmus | | O | | |
| Laboratory Evidence | | S | | |
| Isolation of *Shigella* from a clinical specimen | | | | |
| Detection of *Shigella* from a clinical specimen using a non-culture based method | | N | | |
| Epidemiologic Evidence | | O | | |
| Contact of a confirmed case of Shigellosis | | O | | |
| Member of a risk group defined by the public health authorities during an outbreak | | O | | |

**Notes:**
S = This criterion alone is Sufficient to classify a case.
N = All “N” criteria in the same column are Necessary to classify a case.
O = At least one of these “O” (Optional) criteria in each category (i.e., clinical evidence and laboratory evidence) in the same column—in conjunction with all “N” criteria 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 for confirmed and probable cases of Shigellosis is recommended.

- Data will be used to determine the burden of illness due to *Shigella*, assess the effectiveness over time of control programs, and assess the progress toward Shigellosis control. Data may also be used to compare case numbers with information from other foodborne disease surveillance systems. Electronic reports of Shigellosis cases in NNDSS are also summarized weekly in the MMWR Tables. Annual case data on Shigellosis is summarized in the yearly Summary of Notifiable Diseases.
- State-specific compiled data will continue to be published in the weekly and annual MMWR. All cases are verified with the states before publication.
- The frequency of reports/feedback to the states and territories will be dependent on the current epidemiologic situation in the country. Frequency of cases, epidemiologic distribution, importation status transmission risk, and other factors will influence communications.
X. References


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