

## SHIGELLOSIS (*SHIGELLA*)

### Background

This case definition was developed by the Armed Forces Health Surveillance Branch (AFHSB) for the purpose of epidemiological surveillance of a condition important to military-associated populations. In developing countries, *Shigella* is one of the most common causes of diarrheal disease among adults and children as well as among U.S. military personnel deployed to these areas.<sup>1</sup>

### Clinical Description

Shigellosis is a highly contagious infectious disease caused by a group of bacteria called *Shigella*. The species most commonly associated with human disease is *S. sonnei* followed by *S. flexneri*. Clinically, the condition presents with diarrhea, abdominal cramps and fever. Bloody, mucoid, diarrhea (dysentery) may be present in more severe cases. Onset of symptoms is typically 1 to 2 days following exposure with most infections resolving in 5 to 7 days. Supportive care focused on fluid and electrolyte replacement is the mainstay of treatment. In severe cases antibiotics may be required. Anti-diarrheal medications are contraindicated as these medications may make symptoms worse.<sup>2</sup>

### Case Definition and Incidence Rules

For surveillance purposes, a case of *Shigella* is defined as:

- One record of a reportable medical event (RME) of a *confirmed* case of *Shigella*; or
- One laboratory report with a *confirmed* case of *Shigella* identified by culture from any clinical specimen; or
- *One hospitalization or outpatient medical encounter with any of the defining diagnoses of Shigella* (see ICD9 and ICD10 code lists below) in *any* diagnostic position.

#### **Incidence rules:**

For individuals who meet the case definition:

- An individual is considered an incident case only *once every 180 days*.
- The incidence date is considered the date of onset documented in a reportable medical event report, the date of sample collection associated with a positive laboratory report, or the date of the first hospitalization or outpatient medical encounter that includes a defining diagnosis of *Shigella*.

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<sup>1</sup> Armed Forces Health Surveillance Branch. Incidence of *Shigella* Intestinal Infections, Active Component, U.S. Armed Forces, 2007–2016. *Medical Surveillance Monthly Report (MSMR)*. 2017; Vol 24(6): 11-15.

<sup>2</sup> Centers for Disease Control and Prevention. *Shigella-Shigellosis*. <https://www.cdc.gov/shigella/index.html>. Accessed June 2018.



### Case Definition and Incidence Rules *(continued)*

#### Exclusions:

- None

### Codes

The following ICD9 and ICD10 codes are included in the case definition:

Condition	ICD-10-CM Codes	ICD-9-CM Codes
<i>Shigella</i>	A03 (Shigellosis)	004 (Shigellosis)
	- A03.0 (Shigellosis due to <i>Shigella dysenteriae</i> )	- 004.0 ( <i>Shigella dysenteriae</i> )
	- A03.1 (Shigellosis due to <i>Shigella flexneri</i> )	- 004.1 ( <i>Shigella flexneri</i> )
	- A03.2 (Shigellosis due to <i>Shigella boydii</i> )	- 004.2 ( <i>Shigella boydii</i> )
	- A03.3 (Shigellosis due to <i>Shigella sonnei</i> )	- 004.3 ( <i>Shigella sonnei</i> )
	- A03.8 (other shigellosis)	- 004.8 (other specified <i>Shigella</i> infections)
	- A03.9 (Shigellosis, unspecified)	- 004.9 (Shigellosis, unspecified)

### Development and Revisions

- This case definition was developed by the AFHSB *Medical Surveillance Monthly Report (MSMR)* staff for a June 2017 article on *Shigella* infections.<sup>1</sup> The case definition was developed based on reviews of the ICD9 and ICD10 codes, the scientific literature, and previous AFHSB analyses.

#### Case Definition and Incidence Rule Rationale

- This case definition uses an absolute 180-day incidence rule in which an individual may be considered an incident case no more often than every 180 days. Patients recovering from *Shigella* infection may shed bacterium in the stool for several months after symptoms resolve. To allow for complete resolution of infection and to avoid counting current cases as newly incident, investigators may want to consider using a 180-day “gap in care” incidence rule, (e.g., an individual is considered a new incident case if *at least 180 days* have passed since the last medical encounter with a case defining diagnosis of *Shigella* infection). Use of this methodology presumes that medical encounters for *Shigella* that occur within 180 days of a previous such encounter constitute follow-up care of the previously diagnosed case.<sup>3</sup>

<sup>3</sup> Mandell, G. (2015). Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases (8th ed.). New York: Elsevier/Churchill Livingstone.



- The case finding criteria for this case definition use only one hospitalization or outpatient medical encounter with a case defining ICD9 or ICD10 code in any diagnostic position to define a case. As such, cases of *Shigella* identified using this criterion may represent cases based upon presumptive or epidemiologic diagnoses that are never confirmed. Investigators may want to consider using more specific case finding criteria for outpatient visits.

## Reports

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- Periodic *MSMR* reports.

## Review

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| Jun 2018 | Case definition reviewed and adopted by the AFHSB Surveillance Methods and Standards (SMS) working group. |
| Jun 2017 | Case definition developed by AFHSB <i>MSMR</i> staff.   |

## Comments

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- *Armed Forces Reportable Events: Shigella* is a reportable medical event in the Armed Forces Reportable Events surveillance system.
- Per *RME Guidelines and Case Definitions* a suspected, probable, and confirmed case of *Shigella* is defined by the following:

*Suspected:*

- A case with a *Shigella* positive laboratory test by a method other than culture (example: EIA, PCR) from any clinical specimen

*Probable:*

- A case that meets the clinical description of the disease that is epidemiologically linked to a confirmed case

*Confirmed:*

- *Shigella* identified by culture from any clinical specimen

- *Centers for Disease Control and Prevention (CDC)* criteria for distinguishing a new case from an existing case: “A new case should be created when a positive laboratory result is received more than 90 days after the most recent positive laboratory result associated with a previously reported case in the same individual” (i.e., gap incidence rule).

