

Cholera v1 Definition Factsheet & Technical Brief

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Definition Purpose: Created by the CDC National Syndromic Surveillance Program (NSSP) for use with ED data as part of the rapid reportables project, which seeks to create queries for all National Notifiable Diseases defined by the National Notifiable Diseases Surveillance System (NNDSS). This query is intended to be a version 1 and may be further improved upon by the NSSP community of practice in the future. This query is intended to be narrow and capture visits with specific terms to support greater monitoring and actionable public health data. More complex and/or broader queries may exist that more broadly capture symptoms or travel-based terms.

New or Revised Definition: New Definition

Date Added to ESSENCE: July 2024

Definition Description: Designed to capture emergency department visits associated with cholera infection.

Use-Cases for Definition:

- Case-finding
- Trend monitoring
- Early outbreak detection

Justification: No query definition exists for cholera infections. CDC wants to use syndromic data to monitor trends.

Data Source During Development: Emergency Department Visits. Chief Complaint Query Validation dataset (CCQV) in ESSENCE.

Development Methods:

1. The CDC team used the NNDSS case definition for cholera infections to identify diagnostic codes (International Classification of Diseases, 9th & 10th Revisions (ICD-9-CM, ICD-10-CM), SNOMED Clinical Terms (CT)) and chief complaint free text for syndrome development.
2. The codes and free text were then categorized as inclusion or exclusion terms. These terms were formatted for querying in ESSENCE.
3. Text analysis was conducted on the initial query to find additional inclusion or exclusion terms.
4. The query was cross-checked internally by NSSP and by CDC subject matter experts as needed.

Validation Methods: This definition is part of the collection of definitions created by CDC NSSP for the rapid reportables project. The rapid reportables project is led by the CDC NSSP team to create definitions for all nationally reportable diseases. These definitions focus on chief complaint text and diagnostic codes of the disease or its causative agents with no mention of symptoms. Select members of the Community of Practice

were then asked to review line-level results for their jurisdictions and provide feedback to ensure the intended results of the definitions were met.

Definition Fields and Structure:

The Chief Complaint Discharge Diagnosis (CCDD) parsed field is used to query both the discharge diagnosis codes and chief complaint free text.

- Inclusion based on cholera-related chief complaint free-text terms:
 - The visit is included if it contains:
 1. Chief complaints related to the pathogen name – (“chol[ae]r[ae]”) **OR**
- Inclusion based on ICD-10 discharge diagnosis codes related to cholera:
 - The visit is included if it contains:
 1. A discharge diagnosis code of Cholera (A00) **OR**
- Inclusion based on ICD-9 discharge diagnosis codes related to cholera or *Vibrio cholerae*:
 - The visit is included if it contains:
 1. A discharge diagnosis code of Cholera due to *Vibrio cholerae* (001.0) **OR**
 2. A discharge diagnosis code of Cholera due to *Vibrio cholerae* el tor (001.1) **OR**
 3. A discharge diagnosis code of Cholera, unspecified (001.9) **OR**
- Inclusion based on SNOMED discharge diagnosis codes related to cholera or *Vibrio cholerae*:
 - The visit is included if it contains:
 1. A discharge diagnosis code of Cholera (63650001) **OR**
 2. A discharge diagnosis code of Cholera - non-O1 group *Vibrio* (240350003) **OR**
 3. A discharge diagnosis code of Cholera - O139 group *Vibrio cholerae* (240351004) **OR**
 4. A discharge diagnosis code of Inflammation of intestine caused by *Vibrio cholerae* (1193750009) **OR**
 5. A discharge diagnosis code of Cholera caused by *Vibrio cholerae* El Tor (81020007) **OR**
 6. A discharge diagnosis code of Inflammation of small intestine caused by *Vibrio cholerae* (1193749009) **OR**
 7. A discharge diagnosis code of Non-O1 and non-O139 *Vibrio cholerae* infection (707525005) **OR**
 8. A discharge diagnosis code of Intestinal infection caused by *Vibrio cholerae* O1 (447282003) **OR**
 9. A discharge diagnosis code of Cholera caused by *Vibrio cholerae* O1 Classical biotype (240349003) **OR**
 10. A discharge diagnosis code of Intestinal infection caused by *Vibrio cholerae* non-O139 (446672004) **ANDNOT**
- All of the above must exclude:
 - Chief Complaint terms related to cholera vaccination or surgery – (“vac[x]”, “surg”) **OR**
 - ICD-10 discharge diagnosis codes related to cholera vaccination:
 1. A discharge diagnosis code of Encounter for immunization (Z23) **OR**
 - SNOMED discharge diagnosis codes related to cholera vaccination:
 1. A discharge diagnosis code of Adverse reaction to component of vaccine product containing *Vibrio cholerae* antigen (219082005)

Detailed Definition Components

Table 1. Inclusion and exclusion terms.

| Variable Type | Terms | Description |
|--------------------------------------|--|--|
| <i>Inclusions</i> | | |
| Discharge Diagnosis: ICD-10-CM | A00 | Cholera |
| Discharge Diagnosis: ICD-9-CM | 001.0 | Cholera due to <i>Vibrio cholerae</i> |
| | 001.1 | Cholera due to <i>Vibrio cholerae</i> el tor |
| | 001.9 | Cholera, unspecified |
| Discharge Diagnosis: SNOMED concepts | 63650001 | Cholera |
| | 240350003 | Cholera - non-O1 group <i>Vibrio</i> |
| | 240351004 | Cholera - O139 group <i>Vibrio cholerae</i> |
| | 1193750009 | Inflammation of intestine caused by <i>Vibrio cholerae</i> |
| | 81020007 | Cholera caused by <i>Vibrio cholerae</i> el tor |
| | 1193749009 | Inflammation of small intestine caused by <i>Vibrio cholerae</i> |
| | 707525005 | Non-O1 and non-O139 <i>Vibrio cholerae</i> infection |
| | 447282003 | Intestinal infection caused by <i>Vibrio cholerae</i> O1 |
| | 240349003 | Cholera caused by <i>Vibrio cholerae</i> O1 Classical biotype |
| 446672004 | Intestinal infection caused by <i>Vibrio cholerae</i> non-O139 | |
| Chief Complaint Terms | chol[ae]r[ae] | |
| Discharge Diagnosis: ICD-10-CM | Z23 | Encounter for immunization |
| Discharge Diagnosis: SNOMED concepts | 219082005 | Adverse reaction to component of vaccine product containing <i>Vibrio cholerae</i> antigen |
| Chief Complaint Terms | vac[x] | |
| | surg | |

Table 2. ESSENCE syntax

(,^chol[ae]r[ae]^,or,^;A00^,or,^;001[019];^,or,^;63650001;^,or,^;240350003;^,or,^;240351004;^,or,^;1193750009;^,or,^;81020007;^,or,^;1193749009;^,or,^;707525005;^,or,^;447282003;^,or,^;240349003;^,or,^;446672004;^),ANDNOT,(^vac[x]^,or,^;Z23^,or,^;surg^,or,^;219082005;^)