

Dengue 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 dengue infection.

Use-Cases for Definition:

- Case-finding
- Trend monitoring
- Early outbreak detection

Justification: No query definition exists for dengue virus 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 of dengue virus 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 dengue virus chief complaint free-text terms:
 - The visit is included if it contains:
 1. Chief complaints related to the pathogen name – (“dengue”) **OR**
- Inclusion based on ICD-10 discharge diagnosis codes related to dengue virus:
 - The visit is included if it contains:
 1. A discharge diagnosis code of Dengue fever [classical dengue] (A90) **OR**
 2. A discharge diagnosis code of Dengue hemorrhagic fever (A91) **OR**
- Inclusion based on ICD-9 discharge diagnosis codes related to dengue virus:
 - The visit is included if it contains:
 1. A discharge diagnosis code of Dengue (061) **OR**
- Inclusion based on SNOMED discharge diagnosis codes related to active infection with dengue virus:
 - The visit is included if it contains:
 1. A discharge diagnosis code of Dengue (38362002) **OR**
 2. A discharge diagnosis code of severe Dengue (20927009) **OR**
 3. A discharge diagnosis code of Dengue shock syndrome (409671005) **OR**
 4. A discharge diagnosis code of myelitis caused by Dengue virus (866057003) **OR**
 5. A discharge diagnosis code of Encephalitis caused by Dengue virus (1163101003)
- No exclusion terms or codes are used in this query.

Detailed Definition Components

Table 1. Inclusion and exclusion terms.

Variable Type	Terms	Description
<i>Inclusions</i>		
Discharge Diagnosis: ICD-10-CM	A90	Dengue fever [classical dengue]
	A91	Dengue hemorrhagic fever
Discharge Diagnosis: ICD-9-CM	061	Dengue
Discharge Diagnosis: SNOMED concepts	38362002	Dengue
	20927009	Severe dengue
	409671005	Dengue shock syndrome
	866057003	Myelitis caused by Dengue virus
	1163101003	Encephalitis caused by Dengue virus
Chief Complaint Terms	Dengue	

Table 2. ESSENCE syntax

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^dengue^,or,^;A9[01]^,or,^;061;^,or,^;38362002;^,or,^;20927009;^,or,^;409671005;^,or,^;866057003;^,or,^;1163101003;^
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