

**Marburg 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 Marburg virus infection.

**Use-Cases for Definition:**

- Case-finding
- Trend monitoring
- Early outbreak detection

**Justification:** No query definition exists for Marburg 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 Marburg virus infection 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 Marburg virus-related chief complaint free-text terms:
  - The visit is included if it contains:
    1. Chief complaints related to the pathogen name – (“marb[uae]rg”, “marv”, “ravn”, “lake vi[kc]toria”) **OR**
- Inclusion based on ICD-10 discharge diagnosis codes related to Marburg virus:
  - The visit is included if it contains:
    1. A discharge diagnosis code of Marburg virus disease (A98.3) **OR**
- Inclusion based on SNOMED discharge diagnosis codes related to Marburg:
  - The visit is included if it contains:
    1. A discharge diagnosis code of Marburg virus disease (77503002) **OR**
    2. A discharge diagnosis code of atypical disease caused by Marburg virus (788872004) **AND NOT**
- All of the above must exclude:
  1. Chief complaint free-text terms related to encounters disease evaluation/rule out (“rule out”, “ruleout”, “ruled out”, “marburg heart score”, “marburg variant”, “marburg risk”, “ravn alaska”, “ravn air”)

Detailed Definition Components

**Table 1.** *Inclusion and exclusion terms.*

Variable Type	Terms	Description
<b><i>Inclusions</i></b>		
Discharge Diagnosis: ICD-10-CM	A98.3	Marburg virus disease
Discharge Diagnosis: SNOMED concepts	77503002	Marburg virus disease
	788872004	Atypical disease caused by Marburg virus
Chief Complaint Terms	marb[uae]rg	
	marv	
	ravn	
	lake vi[kc]toria	
<b><i>Exclusions</i></b>		
Chief Complaint Terms	rule out	
	ruleout	
	ruled out	
	marburg heart score	
	marburg variant	
	marburg risk	
	ravn alaska	
	ravn air	

**Table 2.** *ESSENCE* syntax

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(, (^marb[uae]rg^,OR,!marv!,OR,!ravn!,OR,!lake  
vi[kc]toria^,OR,^;a983^,OR,^;77503002;^,OR,^;788872004;^),ANDNOT,(^rule  
out^,OR,^ruleout^,OR,^ruled out^,OR,^marburg heart score^,OR,^marburg variant^,OR,^marburg  
risk^,OR,^ravn alaska^,OR,^ravn air^,))
```