

Babesiosis v1

Definition Factsheet & Technical Brief

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Definition Purpose: Created by the CDC National Syndromic Surveillance Program (NSSP) for use with emergency department data to develop queries for all National Notifiable Diseases defined by the National Notifiable Disease Surveillance System (NNDSS). While the disease queries refer to the NNDSS case definition, the queried data may not align with what is classified as a case in 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 2025

Definition Description: Designed to capture emergency department visits with a diagnostic code or textual indicator of possible babesiosis infection.

Use-Cases for Definition:

Case-finding: Primary

Trend monitoring: Secondary

Early outbreak detection: Tertiary

Emergent Condition: Not Intended as Use Case

Justification: No query definition exists for babesiosis infections. CDC wants to use emergency department 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 babesiosis 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 at 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, and exclusions are incorporated as necessary.

- Inclusion based on babesiosis chief complaint free text terms:
 - The visit is included if it contains:
 1. A chief complaint related to disease name – (“babesio”) **OR**
 2. A chief complaint related to disease agent – (“babesia”) **OR**
- Inclusion based on ICD-10 discharge diagnosis codes related to babesiosis:
 - The visit is included if it contains:
 1. A discharge diagnosis code for Babesiosis – (B60.0) **OR**
- Inclusion based on SNOMED discharge diagnosis codes related to babesiosis:
 - The visit is included if it contains:
 1. A discharge diagnosis code for Babesiosis – (21061004) **OR**
 2. A discharge diagnosis code for other conditions caused by Babesiosis – (24620004) **OR**
 3. A discharge diagnosis code for the presence of *Babesia* – (35029001) **OR**
 4. A discharge diagnosis code for an infection caused by *Babesia* – (83937008 or 73908004 or 51613008 or 877043181000119101)
- There are no exclusions in this query.

Detailed Definition Components

Table 1. *Inclusion and exclusion terms.*

Variable Type	Terms	Description
<i>Inclusions</i>		
Discharge Diagnosis: ICD-10-CM	B60.0	Babesiosis
Discharge Diagnosis: SNOMED concepts	21061004	Babesiosis (disorder)
	24620004	Hemolytic anemia due to babesiosis (disorder)
	35029001	<i>Babesia</i> (organism)
	83937008	Infection caused by <i>Babesia bovis</i> (disorder)
	73908004	Infection caused by <i>Babesia microti</i> (disorder)
	51613008	Infection caused by <i>Babesia divergens</i> (disorder)
	877043181000119101	Infection caused by <i>Babesia duncani</i> (disorder)
Chief Complaint Terms	"babesia"	
	"babesio"	

Table 2. ESSENCE syntax for the CCDD parsed field

<code>^babesi[ao]^,OR,^;B600^,OR,^;21061004;^,OR,^;24620004;^,OR,^;35029001;^,OR,^;83937008;^,OR,^;73908004;^,OR,^;51613008;^,OR,^;877043181000119101;^</code>
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Use the following URL and click Configuration Options to see the query setup:

https://essence2.syndromicsurveillance.org/nssp_essence/servlet/TemporalTimeSeriesViewer?datasource=va_hosp&startDate=6Apr2025&medicalGroupingSystem=essencesyndromes&userId=5024&endDate=12Jul2025&percentParam=noPercent&aqtTarget=TimeSeries&geographySystem=hospital&detector=nodetector&CCDDParsedFreeText=%5Ebabesi%5Bao%5D%5E,OR,%5E;B600%5E,OR,%5E;21061004;%5E,OR,%5E;24620004;%5E,OR,%5E;35029001;%5E,OR,%5E;83937008;%5E,OR,%5E;73908004;%5E,OR,%5E;51613008;%5E,OR,%5E;877043181000119101;%5E%20&timeResolution=weekly

Syntax Plain Language Description: The definition uses discharge diagnosis codes and free-text chief complaint terms. The definition requires that an emergency department visit contains a reference to the disease by its discharge diagnosis code (in at least one of the following: ICD-10-CM, SNOMED diagnostic codes), or by the disease or pathogen name listed in the chief complaint text. Therefore, the babesiosis syndromic surveillance definition includes ICD-10-CM, and SNOMED diagnostic codes for babesiosis, along with direct mentions of *Babesia* and babesiosis using “babesia” or “babesio” in chief complaint text.