

Leptospirosis 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). Please note that while the disease queries are developed using the NNDSS case definition as the basis for identifying patient visits of interest, the queried patient visits themselves may or may not represent a case patient in NNDSS and further public health investigation will most often be required. 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: February 2025

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

Use-Cases for Definition:

- ☒ Case-finding
- ☒ Trend monitoring
- ☒ Early outbreak detection

Justification: No query definition exists for leptospirosis. 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 leptospirosis to identify diagnostic codes (International Classification of Diseases, 9th & 10th Revision (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 as 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 leptospirosis chief complaint free text terms:
 - The visit is included if it contains:
 1. A chief complaint related to disease name – (“leptos” or “liptos” or “lyptos” or “lepto” or “lipto” or “lypto” or “weil disease” or “weils disease”) **OR**
- Inclusion based on ICD-10 discharge diagnosis codes related to leptospirosis:
 - The visit is included if it contains:
 1. A discharge diagnosis code for leptospirosis – (A27) **OR**
- Inclusion based on SNOMED discharge diagnosis codes related to leptospirosis:
 - The visit is included if it contains:
 1. A discharge diagnosis code for leptospirosis – (77377001) **OR**
 2. A discharge diagnosis code for other forms of leptospirosis – (240673004 or 32266007 or 398067003 or 186956008 or 80194003 or 79309005 or 402959002 or 406589003) **OR**
 3. A discharge diagnosis code for conditions caused by Leptospirosis – (410476009 or 16038004 or 840440006 or 26275000 or 22312005 or 65267003 or 68013003 or 70543009 or 871841000 or 871842007)
- There are no exclusions in this query.

Detailed Definition Components

Table 1. Inclusion and exclusion terms.

Variable Type	Terms	Description
Inclusions		
Discharge Diagnosis: ICD-10-CM	A27	Leptospirosis
Discharge Diagnosis: SNOMED concepts	77377001	Leptospirosis (disorder)
	240673004	Leptospiral rash (disorder)
	410476009	Uveitis due to leptospirosis (disorder)
	32266007	Anicteric leptospirosis (disorder)
	398067003	Icteric leptospirosis (disorder)
	186956008	Leptospiral meningitis (disorder)
	80194003	Leptospirosis immune phase (disorder)
	16038004	Abortion due to <i>Leptospira</i> (disorder)
	840440006	Encephalitis caused by <i>Leptospira</i> (disorder)
	79309005	Leptospirosis leptospiremic phase (disorder)
	26275000	Fever due to <i>Leptospira autumnalis</i> (disorder)
	22312005	Infection caused by <i>Leptospira bataviae</i> (disorder)
	65267003	Infection caused by <i>Leptospira pyrogenes</i> (disorder)
	68013003	Infection caused by <i>Leptospira australis</i> (disorder)
	402959002	Leptospirosis with cutaneous involvement (disorder)
	70543009	Infection caused by <i>Leptospira grippotyphosa</i> (disorder)
	871841000	Pulmonary hemorrhage due to leptospirosis (disorder)
	871842007	Intracranial hemorrhage due to leptospirosis (disorder)
	406589003	<i>Leptospira</i> infection of the central nervous system (disorder)
Chief Complaint Terms	"leptos"	
	"liptos"	
	"lyptos"	
	"lepto"	
	"lipto"	
	"lypto"	
	"weils disease"	
	"weil disease"	

Table 2. *ESSENCE* syntax

<p>^[eiy]ptos^,OR,!^[eiy]pto!,OR,^weils disease^,OR,^weil disease^,OR,^;A27^,OR,^;77377001;^,OR,^;240673004;^,OR,^;410476009;^,OR,^;32266007;^,OR,^;39 8067003;^,OR,^;186956008;^,OR,^;80194003;^,OR,^;16038004;^,OR,^;840440006;^,OR,^;79309005;^, OR,^;26275000;^,OR,^;22312005;^,OR,^;65267003;^,OR,^;68013003;^,OR,^;402959002;^,OR,^;705430 09;^,OR,^;871841000;^,OR,^;871842007;^,OR,^;406589003;^</p>
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