

## Poliomyelitis 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 poliovirus infection including paralytic poliomyelitis and non-paralytic poliomyelitis.

Use-Cases for Definition:

- Case-finding
- Trend monitoring
- Early outbreak detection

Justification: No query definition exists for paralytic polio 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 paralytic poliomyelitis 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 paralytic polio-related chief complaint free-text terms:
  - The visit is included if it contains:
    1. Chief complaints related to the pathogen name – (“polio”, “poliomyelitis”) **OR**
- Inclusion based on ICD-10 discharge diagnosis codes related to paralytic polio:
  - The visit is included if it contains:
    1. A discharge diagnosis code of Acute paralytic poliomyelitis (A80) **OR**
- Inclusion based on ICD-9 discharge diagnosis codes related to poliomyelitis:
  - The visit is included if it contains:
    1. A discharge diagnosis code of Acute paralytic poliomyelitis specified as bulbar (045.0) **OR**
    2. A discharge diagnosis code of Acute poliomyelitis with other paralysis (045.1) **OR**
    3. A discharge diagnosis code of Acute nonparalytic poliomyelitis (045.2) **OR**
    4. A discharge diagnosis code of Unspecified acute poliomyelitis (045.9) **OR**
- Inclusion based on SNOMED discharge diagnosis codes related to paralytic polio:
  - The visit is included if it contains:
    1. A discharge diagnosis code of Acute poliomyelitis (398102009) **OR**
    2. A discharge diagnosis code of Polio encephalitis (192686004) **OR**
    3. A discharge diagnosis code of Acute paralytic poliomyelitis (240460008) **OR**
    4. A discharge diagnosis code of Acute paralytic non-bulbar poliomyelitis (186476008)
    5. A discharge diagnosis code of Acute nonparalytic poliomyelitis (14535005) **OR**
    6. A discharge diagnosis code of Acute nonparalytic poliomyelitis caused by human poliovirus 1 (429297003) **ANDNOT**
- **All of the above must exclude:**
  - Chief Complaint terms related to history of polio or encounter for polio vaccination – (“history of polio”, “history polio”, “HX of polio”, “polio as a child”, “polio as a kid”, “polio as child”, “polio as kid”, “booster”, “vaccin”, “shot”, “immuniz”, “prophy”, “post polio”, “encounter for”, “follow up”) **OR**
  - ICD-10 discharge diagnosis codes related to history of polio or encounter for vaccination:
    1. A discharge diagnosis code of Sequelae of poliomyelitis (B91) **OR**
    2. A discharge diagnosis code of Postpolio syndrome (G14) **OR**
    3. A discharge diagnosis code of Encounter for immunization (Z23) **OR**
    4. A discharge diagnosis code of Personal history of poliomyelitis (Z86.12) **OR**
  - SNOMED discharge diagnosis codes related to history of polio or encounter for vaccination:
    1. A discharge diagnosis code of History of poliomyelitis (161415006) **OR**
    2. A discharge diagnosis code of Sequela of infection caused by Human poliovirus (110270004) **OR**
    3. A discharge diagnosis code of Administration of vaccine product containing only Human poliovirus antigen (72093006) **OR**
    4. A discharge diagnosis code of Post poliomyelitis syndrome (31097004)

Detailed Definition Components

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

Variable Type	Terms	Description	
<b>Inclusions</b>			
Discharge Diagnosis: ICD-10-CM	A80	Acute poliomyelitis	
Discharge Diagnosis: ICD-9-CM	045.0	Acute paralytic poliomyelitis specified as bulbar	
	045.1	Acute poliomyelitis with other paralysis	
	045.2	Acute nonparalytic poliomyelitis	
	045.9	Unspecified acute poliomyelitis	
Discharge Diagnosis: SNOMED concepts	398102009	Acute poliomyelitis	
	192686004	Polio encephalitis	
	240460008	Acute paralytic poliomyelitis	
	186476008	Acute paralytic non-bulbar poliomyelitis	
	14535005	Acute nonparalytic poliomyelitis	
	429297003	Acute nonparalytic poliomyelitis caused by human poliovirus 1	
Chief Complaint Terms	polio		
	poliomyelitis		
<b>Exclusions</b>			
Discharge Diagnosis: ICD-10-CM	B91	Sequelae of poliomyelitis	
	G14	Postpolio syndrome	
	Z23	Encounter for immunization	
	Z86.12	Personal history of poliomyelitis	
Discharge Diagnosis: SNOMED concepts	161415006	History of poliomyelitis	
	110270004	Sequela of infection caused by Human poliovirus	
	72093006	Administration of vaccine product containing only Human poliovirus antigen	
	31097004	Post poliomyelitis syndrome	
Chief Complaint Terms	history of polio	polio as child	immuniz
	history polio	polio as kid	prophy
	HX of polio	booster	post polio
	polio as a child	vaccin	encounter for
	polio as a kid	shot	follow up

**Table 2.** ESSENCE syntax

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(,!polio!,OR,^poliomyelitis^,OR,^;A80^,OR,^;045[0129];^,OR,^;398102009;^,OR,^;192686004;^,OR,^;240460008;^,OR,^;186476008;^,OR,^;14535005;^,or,^;429297003;^),ANDNOT,(^history of polio^,OR,^history polio^,OR, ^HX of polio^,OR,^polio as a child^,OR,^polio as a kid^,OR,^polio as child^,OR,^polio as kid^,OR,^booster^,OR,^vaccin^,OR,^shot^,OR,^immuniz^,OR,^prophy^,OR,^post polio^,OR,^encounter for^,OR,^follow up^,OR,^;B91^,OR,^;G14^,OR,^;Z23^,OR,^;Z8612^,OR,^;161415006;^,OR,^;110270004;^,OR,^;72093006;^,OR,^;31097004;^)
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