Hantavirus Infection 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 Diseases 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 hantavirus infection and hantavirus pulmonary syndrome.

Use-Cases for Definition:
☒ Case-finding
☐ Trend monitoring
☒ Early outbreak detection

Justification: No query definition exists for hantavirus infections or hantavirus pulmonary syndrome. 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 hantavirus infection and hantavirus pulmonary syndrome 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 hantavirus infection chief complaint free text terms:
    - The visit is included if it contains:
        1. A chief complaint related to disease name – ("hantavirus" or "hanta") **OR**
- Inclusion based on ICD-10 discharge diagnosis codes related to hantavirus infection:
    - The visit is included if it contains:
        1. A discharge diagnosis code for Hantavirus infection – (A98.5) **OR**
        2. A discharge diagnosis code for Hantavirus Pulmonary Syndrome (B33.4) **OR**
- Inclusion based on ICD-9 discharge diagnosis codes related to hantavirus infection:
    - The visit is included if it contains:
        1. A discharge diagnosis code for Hantavirus infection – (079.81) **OR**
- Inclusion based on SNOMED discharge diagnosis codes related to hantavirus infection:
    - The visit is included if it contains:
        1. A discharge diagnosis code for Hantavirus disease with renal manifestations – (716864001) **OR**
        2. A discharge diagnosis code for conditions caused by Hantavirus infection – (359761005 or 788871006) **ANDNOT**
        3. A discharge diagnosis code for Hantavirus Pulmonary Syndrome – (120639003)

Detailed Definition Components

Table 1. *Inclusion and exclusion terms.*

Variable Type	Terms	Description
	Inclusions	
Discharge Diagnosis: ICD-10-CM	A98.5	Hemorrhagic fever with renal syndrome
	B33.4	Hantavirus (cardio)-pulmonary syndrome [HPS] [HCPS]
Discharge Diagnosis: ICD-9-CM	079.81	Hantavirus infection
Discharge Diagnosis: SNOMED concepts	359761005	Disease caused by Hantavirus (disorder)
	788871006	Atypical disease caused by Hantavirus (disorder)
	716864001	Hemorrhagic fever with renal syndrome (disorder)
	120639003	Hantavirus pulmonary syndrome
Chief Complaint Terms	hantavirus	
	hanta	

Table 2. *ESSENCE syntax*

^hantavirus^,OR,!hanta!,OR,^;A985^,OR,^;B334^,OR,^;07981;^,OR,^;359761005;^,OR,^;788871006;^,OR,^;716864001;^,OR,^;120639003;^