

MENINGITIS; VIRAL

Background

This case definition was developed by the Armed Forces Health Surveillance Branch (AFHSB) for the purpose of epidemiological surveillance of viral meningitis.

Clinical Description

Meningitis refers to inflammation of the membranes (meninges) surrounding the brain and spinal cord. Viral meningitis is the most common type of meningitis caused by infection. Viral meningitis is often less severe than bacterial meningitis and most individuals recover in 7-10 days without specific treatment.¹ Non-polio enteroviruses (members of the subgenera coxsackieviruses, echoviruses, and enteroviruses) are the most common causes of viral meningitis. Symptoms are similar to bacterial meningitis, sudden onset of fever, headache and stiff neck, often accompanied by nausea, vomiting, photophobia, and altered mental status. Diagnostic evaluation is focused on ruling out bacterial infection. Investigative tests may include viral serology and cultures of blood, feces, and throat, brain imaging, and testing of cerebrospinal fluid if symptoms do not improve. Treatment of viral meningitis is primarily symptomatic support.²

Case Definition and Incidence Rules

For surveillance purposes, a case of viral meningitis is defined as:

- *One hospitalization* with a case defining diagnosis of viral meningitis (see ICD9 and ICD10 code lists below) in the *primary* or *secondary* diagnostic position.

For surveillance purposes, a *probable* case of viral meningitis is defined as:

- *One hospitalization* with a case defining diagnosis of viral meningitis (see ICD9 and ICD10 code lists below) in *diagnostic positions 3-8*; or
- *One outpatient medical encounter* with a case defining diagnosis of viral meningitis (see ICD9 and ICD10 code lists below) in the *primary* diagnostic position, AND a procedure code (CPT code) indicative of a spinal tap.

For surveillance purposes, a *suspected* case of viral meningitis is defined as:

- *One outpatient medical encounter* with a case defining diagnosis of viral meningitis (see ICD9 and ICD10 code lists below) in the *primary* diagnostic position with no ICD9 or ICD10 code indicative of a spinal tap.

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¹ Centers for Disease Control and Prevention (CDC). Viral Meningitis. See <http://www.cdc.gov/meningitis/viral.html>; Accessed May 2016.

² Armed Forces Health Surveillance Center. Viral Meningitis, Active and Reserve Components, U.S. Armed Forces, 2002-2011.. *Medical Surveillance Monthly Report (MSMR)*; 2012 Aug; Vol 19(8): 2-6.



Case Definition and Incidence Rules *(continued)*

Incidence rules:

For individuals who meet the case definition:

- The incidence date is considered the date of the first hospitalization or outpatient medical encounter that includes a defining diagnosis of viral meningitis.
- An individual may be considered an incident case only *once per surveillance period*.

Exclusions:

- None

Codes

The following ICD9 and ICD10 codes are included in the case definition:

| Condition | ICD-10-CM Codes | ICD-9-CM Codes |
|------------------|--|--|
| Viral meningitis | <i>A87 (viral meningitis)</i> | <i>047 (meningitis due to enterovirus)</i> |
| | - A87.0 (enteroviral meningitis) | - 047.0 (meningitis due to coxsackieviruses) |
| | | - 047.1 (meningitis due to echoviruses) |
| | - A87.1 (adenoviral meningitis) | - 049.1 (meningitis due to adenovirus) |
| | - A87.2 (lymphocytic choriomeningitis) | - 049.0 (meningitis due to lymphocytic choriomeningitis virus) |
| | - A87.8 (other viral meningitis) | - 047.8 (meningitis due to other specified enteroviruses) |
| | - A87.9 (viral meningitis, unspecified) | - 047.9 (unspecified viral meningitis) |
| | B00.3 (herpesviral meningitis) | 054.72 (herpes simplex meningitis) |
| | B02.1 (zoster meningitis) | 053.0 (herpes zoster with meningitis) |
| | B26.1 (mumps meningitis) | 072.1 (mumps meningitis) |
| | G02 (meningitis in other infectious and parasitic diseases classified elsewhere) | 321.2 (meningitis due to viruses not elsewhere classified) |
| | <i>G03 (meningitis due to other and unspecified causes)</i> | <i>322 (meningitis of unspecified cause)</i> |
| | - G03.0 (nonpyogenic meningitis) | - 322.0 (nonpyogenic meningitis) |

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|--|--|-----------------------------------|
| | - G03.2 (benign recurrent meningitis [Mollaret]) | - 047.9 (above) |
| | - G03.9 (meningitis, unspecified) | - 322.9 (meningitis, unspecified) |

Procedures CPT Codes

| | |
|------------|---|
| Spinal tap | 62270 (spinal puncture, lumbar diagnostic) |
| | 76005 (no longer used) |
| | 77003 (fluoroscopic guidance and localization of needle or catheter tip for spine or paraspinous diagnostic or therapeutic injection procedures (epidural or subarachnoid, or sacroiliac joint, including neurolytic agent destruction) |

Development and Revisions

- In July of 2016 the case definition was updated to include ICD10 codes.
- This case definition was developed in August of 2012 by the *Medical Surveillance Monthly Report (MSMR)* staff for use in a MSMR article on viral meningitis.¹ The case definition was developed based on reviews of the ICD9 codes, the scientific literature, and previous AFHSC analyses.

Case Definition and Incidence Rule Rationale

- This case definition includes case finding criteria for confirmed, probable and suspected viral meningitis.

Code Set Determination and Rationale

- The intent of the case definition is to capture acute viral meningitis; therefore, the following codes are not included in the code set: ICD10 G03.1 (chronic meningitis) / ICD9 322.2 (chronic meningitis) and ICD10 G03.8 (meningitis due to other specified causes) / ICD9 322.1 (eosinophilic meningitis).

Reports

AFHSB reports on viral meningitis the following reports:

- None.

Review

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| Jul 2016 | Case definition reviewed and adopted by the AFHSB Surveillance Methods and Standards (SMS) working group. |
| Aug 2012 | Case definition developed by AFHSC MSMR staff. |



Comments

Armed Forces Reportable Events: Viral meningitis is not a reportable medical event in the Armed Forces Reportable Events surveillance system. Reportable are: Arboviral encephalitis (may be accompanied by meningitis), mumps (with or without meningitis), polio (with or without meningitis).

