

VARICELLA (CHICKENPOX)

Includes Confirmed and Possible Cases; Does Not Include Recurrent Varicella Infection (Herpes Zoster)

Background

This case definition was developed by the Armed Forces Health Surveillance Branch (AFHSB) for the purpose of epidemiological surveillance of primary varicella infection.. The methodology used in this case definition captures cases of *confirmed* varicella infection and attempts to identify individuals that may have had varicella infection in the past (i.e., *possible* cases).

Clinical Description

Varicella is an acute infectious disease caused by varicella zoster virus (VSV). Primary infection with VZV results in chickenpox. Herpes zoster (shingles) is the result of reactivation of latent VZV. Varicella virus spreads easily from person to person through inhalation of airborne saliva droplets or from contact with objects contaminated by the saliva of an infected individual. Symptoms include fever, malaise, and a characteristic rash distinguished by small fluid-filled vesicles on an erythematous base. In healthy children the clinical course is generally mild lasting 2-3 days. Adults may have more severe disease and a higher incidence of complications. Recovery from primary infections usually results in lifetime immunity. Receipt of the varicella vaccine is preventative and is required for entry into military service.¹

Case Definition and Incidence Rules

For surveillance purposes, a *confirmed* case of varicella is defined as:

- One record of a reportable medical event *with* laboratory or epidemiological confirmation.

For surveillance purposes, a *possible* case of varicella is defined as:

- One record of a reportable medical event of varicella *without* laboratory or epidemiological confirmation.
- *One hospitalization or outpatient medical encounter* with any of the defining diagnoses of a *possible* case of varicella (see ICD9 and ICD10 code lists below) in the *primary* diagnostic position.

Incidence rules:

For individuals who meet the case definition:

- The incidence date is considered the date of onset documented in a reportable medical event report, or the first hospitalization or outpatient medical encounter that includes a defining diagnosis of varicella.

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¹ Varicella Zoster Virus. Centers for Disease Control and Prevention (CDC). Epidemiology and Prevention of Vaccine-Preventable Diseases, 13th ed. April, 2015. Available at: www.cdc.gov/.../pinkbook/downloads/varicella.pdf. Accessed January 2018.



Case Definition and Incidence Rules *(continued)*

- An individual is considered an incident case only *once per lifetime*.

Exclusions: *(applies to possible cases of varicella only):*

- Cases with *one* medical encounter with evidence of varicella immunization *within 7 days* before or after the case-defining encounter; as indicated by the following vaccine administered (CVX) codes: 021 (varicella virus vaccine), 036 (varicella zoster immune globulin/VSIG), 094 (MMRV), 117 (varicella zoster immune globulin/VZIG IND)
- Individuals with evidence of a positive test for serologic immunity to VSV *within 7 days* before or after the case defining encounter.
- Cases with *one* Current Procedure Code (CPT) or *one* ICD9/ICD10 procedure code indicating varicella vaccination or antibody testing recorded during the *same* medical encounter; as indicated by the following codes.
 - ICD9 codes: V04.8 (other viral diseases), V04.89 (other viral diseases), V05.4 (varicella), V05.8 (other specified disease), V05.9 (unspecified single disease). In ICD10 use Z23 (encounter for immunization) plus procedure code for type of immunization.
 - CPT codes: 90716 (varicella vaccine), 90710 (MMRV vaccine)

Codes

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

Condition	ICD-10-CM Codes	ICD-9-CM Codes
Varicella <i>(Possible case)</i>	<i>B01 (varicella chickenpox)</i>	<i>052 (chickenpox)</i>
	B01.0 (varicella meningitis)	052.7 (chickenpox with other specified conditions)
	B01.1 (varicella encephalitis, myelitis and encephalomyelitis)	--
	- B01.11 (varicella encephalitis and encephalomyelitis)	052.0 (postvaricella encephalitis)
	- B01.12 (varicella myelitis)	052.2 (post varicella myelitis)
	B01.2 (varicella pneumonia)	052.1 (varicella [hemorrhagic] pneumonitis)
	B01.8 (varicella with other complications)	--
	- B01.81 (varicella keratitis)	052.7 (above)

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	- B01.89 (other varicella complications)	052.8 (chickenpox with unspecified complication)
	B01.9 (varicella without complication)	052.9 (chickenpox without mention of complication)

Development and Revisions

- This case definition for varicella was developed in October 2017 by the Medical Surveillance Monthly Report (MSMR) staff for use in a MSMR article on measles, mumps, rubella, and varicella.² The case definition was developed based on reviews of the ICD9 and ICD10 codes, the scientific literature, and previous AFHSB analyses.

Case Definition and Incidence Rule Rationale

- An RME with a diagnosis of varicella characterized as “probable” or “suspected” and never amended as “confirmed” is treated as a “possible” case. As a result, “possible” cases may include both “true” cases for which there were no follow-up RMEs indicating confirmation; and “true” cases for which diagnoses were documented in inpatient or outpatient records but no RMEs were ever transmitted by local military public health officials.
- During the development of the case definition, examination of *possible* cases revealed that varicella recorded in health records often represents misdiagnoses, tentative “rule out” diagnoses, or miscodings of encounters for vaccinations or laboratory testing. Restrictive case finding criteria is used to focus on confirmed cases. The AFHSB encourages the cautious interpretation of data about *possible* cases of varicella, given the uncertainty about the specificity of the case definition.
- The vaccine exclusions used for the case definition apply *only* to *possible* cases of varicella. The list of vaccine exclusions includes vaccination codes specific for, and related to, VZV vaccination. Related vaccinations given during the same medical encounter as the varicella diagnosis would cast doubt on the accuracy of the diagnosis.

Reports

AFHSB reports on varicella in the following reports:

- AFHSB Reportable Events Monthly Report. Available on the Defense Health Agency (DHA) website at: <https://health.mil/Military-Health-Topics/Health-Readiness/Armed-Forces-Health-Surveillance-Branch/Reports-and-Publications>.

Review

January 2018 Case definition reviewed and adopted by the AFHSB Surveillance Methods and Standards (SMS) working group.

October 2017 Case definition developed by AFHSB MSMR staff.

² Armed Forces Health Surveillance Branch. Measles, Mumps, Rubella, and Varicella Among Service Members and Other Beneficiaries of the Military Health System, 2010-2016. *Medical Surveillance Monthly Report (MSMR)*; 2017 October; Vol 24(10): 2-10.



Comments

Armed Forces Reportable Events: Varicella (chickenpox) is a reportable medical event in the Armed Forces Reportable Events surveillance system.

