

MUMPS

Includes confirmed and possible cases.

Background

This case definition was developed by the Armed Forces Health Surveillance Division (AFHSD) for the purpose of epidemiological surveillance of mumps in military-associated populations.

Clinical Description

Mumps is a highly contagious viral infection characterized by the swelling of one or both of the parotid glands, frequently accompanied by systemic symptoms such as fever, headache, fatigue, and loss of appetite. The virus is primarily transmitted through the inhalation of airborne saliva droplets or through direct contact with objects contaminated by the saliva of an infected individual. While most cases resolve without complication, the infection can lead to rare but severe inflammation of various organs, including the testicles, pancreas, ovaries, breasts, as well as the central nervous system in the form of encephalitis and meningitis.¹ Receipt of the measles-mumps-rubella (MMR) vaccine is preventative and is required for entry into military service.

Case Definition and Incidence Rules (February 2015 - present)

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

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

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

- One record of a RME of mumps *without* laboratory or epidemiological confirmation; or
- *One hospitalization or outpatient medical encounter* with a case defining diagnosis of a *possible* case of mumps (see ICD9 and ICD10 code lists below) in the *first* diagnostic position; AND one, or more, “mumps-associated symptom” (see ICD9 and ICD10 code lists below) in *any* other diagnostic position.

Incidence rules:

- For individuals who meet the case definition:
- The incidence date is considered the date of onset documented in a RME report, or the first hospitalization or outpatient medical encounter that includes a case defining diagnosis of measles.
- An individual is considered an incident case *once per lifetime*.

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¹ Armed Forces Health Surveillance Center. Measles and Mumps Among Service Members and Other Beneficiaries of the US Military Health System, January 2007-December 2014. *MSMR*. 2015; 22(2): 14-18.



Case Definition and Incidence Rules *(continued)*

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

- Cases with *one* medical encounter with evidence of mumps immunization *within 7 days* before or after the case defining encounter; indicated by the following vaccine administered (CVX) codes: 03 (measles, mumps and rubella [MMR]), 07 (mumps), 38 (rubella and mumps), 94 (measles, mumps, rubella and varicella [MMRV]).
- Individuals with evidence of a positive test for serologic immunity to mumps *within 7 days* before or after the case defining encounter.
- Cases with *one* Current Procedure Code (CPT) or *one* ICD10/9 procedure code indicating mumps vaccination or antibody testing recorded during the *same* medical encounter; as indicated by the following codes.
 - ICD10: Z23 (encounter for immunization) plus a procedure code for type of immunization.
 - ICD9: Need for prophylactic vaccination and inoculation against... V04.2 (measles alone), V04.3 (rubella alone), V04.6 (mumps alone), V04.8 (other viral diseases), V04.89 (other viral diseases), V05.8 (other specified disease), V05.9 (unspecified single disease), V06.4 (measles-mumps-rubella [MMR]), V06.8 (other combinations of diseases), V06.9 (unspecified combined vaccine), V73.2 (screening exam for measles), 99.45 (vaccination against measles), 98.48 (administration of MMR vaccine), 99.46 (vaccination against mumps).
 - CPT: 86765 (measles (rubeola) antibodies, IgG), 86735 (mumps antibody panel), 86762 (rubella antibody [IgG] test), 87798 (mumps virus RNA PCR), 90704 (mumps virus vaccine, live, SQ), 90705 (measles virus vaccine, live, SQ), 90707 (MMR vaccine), 90708 (measles and rubella vaccine, live, SQ), 90709 (rubella and mumps vaccine, SQ), and 90710 (MMRV vaccine, live, SQ), 96372 (therapeutic, prophylactic, or diagnostic injections, SQ or IM), 90772 (therapeutic, prophylactic, or diagnostic injections, SQ or IM).

Codes

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

Condition	ICD-10-CM Codes	ICD-9-CM Codes
Mumps <i>(Possible case)</i>	B26 (<i>mumps</i>)	072 (<i>mumps</i>)
	B26.0 (mumps orchitis)	072.0 (mumps orchitis)
	B26.1 (mumps meningitis)	072.1 (mumps meningitis)
	B26.2 (mumps encephalitis)	072.2 (mumps encephalitis)
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	B26.3 (mumps pancreatitis)	072.3 (mumps pancreatitis)
	B26.8 (mumps with other complications)	072.7 (mumps with other specified conditions)
	- B26.81 (mumps hepatitis)	- 072.71 (mumps hepatitis)
	- B26.82 (mumps myocarditis)	- 072.79 (mumps with other specified conditions; other)
	- B26.83 (mumps nephritis)	
	- B26.84 (mumps polyneuropathy)	- 072.72 (mumps polyneuropathy)
	- B26.85 (mumps arthritis)	- 072.79 (above)
	- B26.89 (other mumps complications)	072.8 (mumps with unspecified complication)
	B26.9 (mumps without complication)	072.9 (mumps without mention of complication)

Symptoms	ICD-10-CM Codes	ICD-9-CM Codes
Mumps-associated symptoms	G50.1 (atypical facial pain)	350.2 (atypical face pain)
	H92.0 (otalgia)	388.7 (otalgia)
	- H92.01 (otalgia, <i>right</i>)	- 388.70 (otalgia, unspecified)
	- H92.02 (otalgia, <i>left</i> ear)	- 388.71 (otalgia, otogenic pain)
	- H92.03 (otalgia, <i>bilateral</i>)	- 388.72 (otalgia referred pain)
	- H92.09 (otalgia, <i>unspecified</i> ear)	
	J02.9 (acute pharyngitis, unspecified)	462 (acute pharyngitis)
	K11.1 (hypertrophy of salivary gland)	527.1 (hypertrophy of salivary gland)
	K11.2 (sialoadenitis)	527.2 (sialoadenitis; parotitis)
	- K11.20 (sialoadenitis, unspecified)	
	- K11.21 (acute sialoadenitis)	
	K11.5 (sialolithiasis)	527.5 (sialolithiasis)
	L04.0 (acute lymphadenitis of face, head and neck)	683 (acute lymphadenitis)
	L04.9 (acute lymphadenitis, unspecified)	
	M79.1 (myalgia)	729.1 (myalgia and myositis, unspecified)
	N45 (orchitis and epididymitis)	604 (orchitis and epididymitis)
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N45.1 (epididymitis)	604.9 (orchitis, epididymitis, and epididymo-orchitis, without mention of abscess)
N45.2 (orchitis)	
N45.3 (epididymo-orchitis)	
	604.90 (orchitis and epididymitis, unspecified)
	604.99 (orchitis, epididymitis, and epididymo-orchitis, without mention of abscess; other)
N45.4 (abscess of epididymis or testis)	604.0 (orchitis, epididymitis, and epididymo-orchitis, with abscess)
P81.8 (other specified disturbances of temperature regulation of newborn)	778.4 (other disturbances of temperature regulation of newborn)
P81.9 (disturbance of temperature regulation of newborn, unspecified)	
R10.1 (pain localized to upper abdomen)	789 (other symptoms involving abdomen and pelvis)
- R10.10 (upper abdominal pain, <i>unspecified</i>)	789.09 (abdominal pain, other specified site)
- R10.11 (<i>right</i> upper quadrant pain)	- 789.01 (abdominal pain, <i>right</i> upper quadrant)
- R10.12 (<i>left</i> upper quadrant pain)	- 789.02 (abdominal pain, <i>left</i> upper quadrant)
- R10.13 (epigastric pain)	- 789.06 (abdominal pain, epigastric)
R10.2 (pelvic and perineal pain)	625.9 (above)
	789.09 (above)
R10.3 (pain localized to other parts of lower abdomen)	--
- R10.30 (lower abdominal pain, <i>unspecified</i>)	789.09 (above)
- R10.31 (<i>right</i> lower quadrant pain)	789.03 (abdominal pain, <i>right</i> lower quadrant)
- R10.32 (<i>left</i> lower quadrant pain)	789.04 (abdominal pain, <i>left</i> lower quadrant)
- R10.33 (periumbilical pain)	789.05 (abdominal pain, periumbilical)
R10.84 (generalized abdominal pain)	789.07 (abdominal pain, generalized)
R10.9 (unspecified abdominal pain)	789.00 (abdominal pain, unspecified site)
R13.0 (aphagia)	--
- R13.10 (dysphagia, unspecified)	787.2 (dysphagia)
	- 787.20 (dysphagia, unspecified)
- R13.11 (dysphagia, oral phase)	- 787.21 (dysphagia, oral phase)
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- R13.12 (dysphagia, oropharyngeal phase)	- 787.22 (dysphagia, oropharyngeal phase)
- R13.13 (dysphagia, pharyngeal phase)	- 787.23 (dysphagia, pharyngeal phase)
- R13.14 (dysphagia, pharyngoesophageal phase)	- 787.24 (dysphagia, pharyngoesophageal phase)
- R13.19 (other dysphagia)	- 787.29 (other dysphagia)
R22.0 (localized swelling, mass and lump, head)	784.2 (swelling, mass, or lump in head or neck)
R22.1 (localized swelling, mass and lump, neck)	
<i>R50 (fever of other and unknown origin)</i>	<i>780.6 (fever and other physiologic disturbances of temperature regulation)</i>
R50.8 (other specified fever)	--
- R50.81 (fever presenting with conditions classified elsewhere)	- 780.61 (fever presenting with conditions classified elsewhere)
R50.9 (fever, unspecified)	- 780.60 (fever, unspecified)
R52 (pain, unspecified)	780.96 (generalized pain)
<i>R53 (malaise and fatigue)</i>	<i>780.7 (malaise and fatigue)</i>
- R53.1 (weakness)	- 780.79 (other malaise and fatigue)
R53.8 (other malaise and fatigue)	
- R53.81 (other malaise)	
- R53.83 (other fatigue)	
R59 (enlarged lymph nodes)	785.6 (enlargement of lymph nodes)
- R59.0 (localized enlarged lymph nodes)	
- R59.1 (generalized enlarged lymph nodes)	
- R59.9 (enlarged lymph nodes, unspecified)	
R63.0 (anorexia)	783.0 (anorexia)
R68.84 (jaw pain)	784.92 (jaw pain)

Development and Revisions

- The original case definition was developed in February 2015 by the *Medical Surveillance Monthly Report (MSMR)* staff for use in a *MSMR* article on measles and mumps.¹ The case definition was



developed based on reviews of the ICD9 and ICD10 codes, the scientific literature, and previous AFHSD analyses.

Case Definition and Incidence Rule Rationale

- The AFHSD methodology attempts to capture both “confirmed” and “possible” cases of mumps, while recognizing that data regarding “possible” cases lacks specificity and must be interpreted with caution. During case definition development, a review of cases with an initial primary diagnosis of mumps revealed that many were misdiagnoses, tentative “rule out” diagnoses, or miscoded encounters for vaccination or laboratory testing. To optimize specificity and focus on verifiable infections, AFHSD limits possible cases to individuals with mumps listed in the *first* diagnostic position, accompanied by *at least one* associated mumps symptom in any other diagnostic position.
- An RME with a diagnosis of mumps classified as “probable” or “suspected” and never updated to “confirmed” is treated as a “possible” case. Thus, “possible” cases may include true mumps cases without follow-up RMEs confirming the diagnosis, as well as cases documented during inpatient or outpatient medical encounters for which no RMEs was transmitted by local military public health officials.
- To identify the most frequently documented symptoms associated with a primary diagnosis of mumps, the AFHSD conducted a line-listing review. However, the resulting data may not accurately reflect the disease’s typical clinical presentation. Investigators utilizing this case definition may want to consider an alternative symptom list.
- The vaccine exclusions used for the case definition apply only to “possible” cases of mumps. The list of exclusions includes vaccination codes specific for, and related to, mumps vaccination. Related vaccinations given during the same medical encounter as the mumps diagnosis would cast doubt on the accuracy of the diagnosis.

Code Set Determination and Rationale

- None

Reports

The AFHSD reports on mumps in the following reports:

- Periodic *MSMR* articles.
- The Defense Centers for Public Health-Aberdeen (DCPH-A) publishes a monthly RME Report which can be obtained by sending an email to: dha.apg.Pub-Health-A.mbx.disease-epidemiologyprogram13@health.mil. A link to this email is also available on the Defense Health Agency (DHA) website; <https://www.health.mil/Military-Health-Topics/Health-Readiness/Public-Health/AFHSD/Reports-and-Publications/Armed-Forces-Reportable-Medical-Events>. Accessed May 2026.

Review

May 2026	Case definition updated by the AFHSD Surveillance Methods and Standards (SMS) working group.
May 2015	Case definition reviewed and adopted by the Armed Forces Health Surveillance Center (AFHSC) SMS working group.



Feb 2015 Case definition developed by AFHSC MSMR staff.

Comments

- Mumps is a reportable medical event in the *Armed Forces Reportable Medical Events* surveillance system, listed under “Vaccine Preventable Diseases.”

