

MUMPS

Includes Confirmed and Possible Cases

Background

This case definition was developed by the Armed Forces Health Surveillance Center (AFHSC) for the purpose of epidemiological surveillance of a condition important to military-associated populations. The methodology used in this case definition captures cases of confirmed mumps and attempts to identify individuals that may have had mumps, (i.e., “possible” cases of mumps). Examination of possible cases revealed that mumps recorded in health records often represents misdiagnoses, tentative “rule out” diagnoses, or miscodings of encounters for vaccinations or laboratory testing. Restrictive case finding criteria are used to focus on “confirmed” cases. The AFHSC encourages the cautious interpretation of data about “possible” cases of mumps, given the uncertainty about the specificity of the case definition.

Clinical Description

Mumps is a virus that 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. Swelling in one or both of the parotid glands is the classic presentation of mumps infection, along with fever, headache, fatigue, and loss of appetite. Severe complications are rare but can include inflammation of other parts of the body such as the testicles, pancreas, ovaries, breasts, the brain (encephalitis) and the meninges (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

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

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

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

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

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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. *Medical Surveillance Monthly Report (MSMR)*; 2015 February; Vol 22(2): 14-18.



Case Definition and Incidence Rules *(continued)*

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

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; as indicated by the following vaccine administered (CVX) codes: 003 (MMR), 007 (mumps), 038 (rubella/mumps), 094 (MMRV)
- Individuals with evidence of a positive test for serologic immunity to measles *within 7 days* before or after the case defining encounter.
- Cases with *one* Current Procedure Code (CPT) or *one* ICD9/ICD10 procedure code indicating mumps vaccination or antibody testing recorded during the *same* medical encounter; as indicated by the following codes.
 - ICD9 codes: V04.89 (other viral diseases), V04.2 (measles alone), V04.3 (rubella alone), V04.6 (mumps alone), V04.8 (other viral diseases), V05.8 (other specified disease), V05.9 (unspecified single disease), V06.4 (MMR), V06.8 (other combinations), V06.9 (unspecified combined vaccine). Special screening examination for viral and chlamydial diseases: V73.2 (measles), 99.45 (measles vaccine), (98.48 (MMR vaccine), 99.46 (mumps vaccine). In ICD10 use Z23 (encounter for immunization) plus procedure code for type of immunization.
 - CPT codes: 86765 (measles IgG or IgM), 86735 (mumps antibody panel), 86762 (MMR IgG), 87798 (mumps virus RNA PCR), 96372 (therapeutic, prophylactic, or diagnostic injections), 90772 (therapeutic, prophylactic, or diagnostic injections), 90704 (mumps virus vaccine), 90705 (measles virus vaccine), 90707 (MMR vaccine), 90708 (measles and rubella vaccine), 90709 (rubella and mumps 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
Mumps	B26 (mumps)	072 (mumps)

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<i>(Possible case)</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)
	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, right)	
	- H92.02 (otalgia, left ear)	
	- H92.03 (otalgia, bilateral)	
	- H92.09 (otalgia, unspecified 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)	

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M79.1 (myalgia)	729.1 (myalgia and myositis, unspecified)
N45 (orchitis and epididymitis)	604 (orchitis and epididymitis)
- N45.1 (epididymitis)	604.9 (orchitis, epididymitis, and epididymo-orchitis, without mention of abscess)
- N45.2 (orchitis)	
- N45.3 (epididymo-orchitis)	
- N45.4 (abscess of epididymis or testis)	604.90 (orchitis and epididymitis, unspecified) 604.99 (orchitis, epididymitis, and epididymo-orchitis, without mention of abscess; other)
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, unspecified)	789.09 (abdominal pain, other specified site)
- R10.11 (right upper quadrant pain)	789.01 (abdominal pain, right upper quadrant)
- R10.12 (left upper quadrant pain)	789.02 (abdominal pain, left 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, unspecified)	789.09 (above)
- R10.31 (right lower quadrant pain)	789.03 (abdominal pain, right lower quadrant)
- R10.32 (left lower quadrant pain)	789.04 (abdominal pain, left lower quadrant)
- R10.33 (periumbilical pain)	789.05 (abdominal pain, periumbilic)
R10.84 (generalized abdominal pain)	789.07 (abdominal pain, generalized)
R10.9 (unspecified abdominal pain)	789.00 (abdominal pain, unspecified site)
R13.0 (aphagia)	--

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- R13.10 (dysphagia, unspecified)	787.2 (dysphagia) 787.20 (dysphagia, unspecified)
- R13.11 (dysphagia, oral phase)	787.21 (dysphagia, oral phase)
- 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)	
R50 (fever of other and unknown origin)	780.6 (fever and other physiologic disturbances of temperature regulation)
- 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)
R53 (malaise and fatigue)	780.7 (malaise and fatigue)
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

- This case definition for mumps 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 codes, the scientific literature, and previous AFHSC analyses.

Case Definition and Incidence Rule Rationale

- An RME with a diagnosis of mumps 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, analysis of numerous cases with a primary listed diagnosis of mumps revealed that many of the cases were, in fact, not mumps. In response, AFHSC restricted its case finding criteria for possible cases to include only those individuals with a medical encounter in the primary diagnostic position *and* an associated symptom of mumps.
- A line-listing review of cases was used to determine the symptoms most commonly used and entered in the medical record with a primary diagnosis of mumps. The resultant symptom list generated using his methodology may not reflect the symptoms most commonly associated with a clinical case of mumps. As such, investigators using this case definition may want to consider an alternative list of symptoms.
- The vaccine exclusions used for the case definition apply only to “possible” cases of mumps. The list of vaccine 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.

Reports

AFHSC reports on mumps in the following reports:

Monthly: AFHSC Reportable Events Monthly Report. Available on the AFHSC website at: <http://www.afhsc.mil>; see “Reports and Publications”.

Review

May 2015	Case definition reviewed and adopted by the AFHSC Surveillance Methods and Standards (SMS) working group.
Feb 2015	Case definition developed by AFHSC MSMR staff.

Comments

Armed Forces Reportable Events: Mumps is a reportable medical event in the Armed Forces Reportable Events surveillance system under “Vaccine Preventable” disease.

