

Merlin disease code: 07290 Mumps

No paper case report form  
Merlin extended data required

## Background

Mumps is an illness with acute onset of unilateral or bilateral tender, self-limited swelling of the parotid or other salivary gland(s) lasting at least 2 days; acute illness characterized by a mumps-associated complication such as aseptic meningitis, encephalitis, hearing loss, orchitis, oophoritis, parotitis or other salivary gland swelling, mastitis, or pancreatitis.

## Clinical criteria for case classification

### Confirmatory:

One or more of the following:

- Acute parotitis lasting at least 2 days,
- **Or** other salivary gland swelling lasting at least 2 days,
- **Or** aseptic meningitis,
- **Or** encephalitis,
- **Or** hearing loss,
- **Or** orchitis,
- **Or** oophoritis,
- **Or** mastitis,
- **Or** pancreatitis.

### Presumptive:

One or more of the following:

- Acute parotitis lasting at least 2 days,
- **Or** other salivary gland swelling lasting at least 2 days,
- **Or** orchitis,
- **Or** oophoritis.

### Supportive:

One or more of the following:

- Parotitis,
- **Or** acute salivary gland swelling,
- **Or** orchitis,
- **Or** oophoritis.

## Laboratory criteria for case classification

### Confirmatory:

Either of the following:

- Isolation of mumps virus in cell culture from clinical specimen (e.g., blood, urine, oral swab)
- **Or** detection of mumps nucleic acid (e.g., standard or real-time polymerase chain reaction [PCR]).

### Presumptive:

Positive anti-mumps IgM antibody.

## Epidemiological criteria for case classification

A person who is epidemiologically linked to a confirmed or probable mumps case.

## Case classification

### Confirmed:

A person with confirmatory clinical criteria and confirmatory laboratory criteria.

### Probable:

Either of the following:

- A person with presumptive clinical criteria and presumptive laboratory criteria in the absence of a more likely diagnosis
- **Or** a person with presumptive clinical criteria and epidemiological criteria in the absence of a more likely diagnosis.

### Suspect:

Either of the following:

- A person with confirmatory or presumptive laboratory criteria without clinical criteria
- **Or** a person with supportive clinical criteria without confirmatory or presumptive laboratory criteria in the absence of a more likely diagnosis.

## Criteria to distinguish a new case from previous reports

Not applicable.

## Comments

### **Epidemiologic classification of internationally imported and U.S.-acquired cases**

- **Internationally imported case:** An internationally imported case is defined as a case in which mumps results from exposure to mumps virus outside the U.S. as evidenced by at least some of the exposure period (12-25 days before onset of parotitis or other mumps-associated complications) occurring outside the U.S. and onset of parotitis or other mumps-associated complications within 25 days of entering the U.S. and no known exposure to mumps in the U.S. during that time. All other cases are considered U.S.-acquired cases.
- **U.S.-acquired case:** A U.S.-acquired case is defined as a case in which the patient had not been outside the U.S. during the 25 days before onset of parotitis or other mumps-associated complications or was known to have been exposed to mumps within the U.S.

### **U.S.-acquired cases are subclassified into four mutually exclusive groups:**

- **Import-linked case:** Any case in a chain of transmission that is epidemiologically linked to an internationally imported case.
- **Imported-virus case:** A case for which an epidemiologic link to an internationally imported case was not identified but for which viral genetic evidence indicates an imported mumps genotype, i.e., a genotype that is not occurring within the U.S. in a pattern indicative of endemic transmission. An endemic genotype is the genotype of any mumps virus that occurs in an endemic chain of transmission (i.e., lasting  $\geq 12$  months). Any genotype that is found repeatedly in U.S.-acquired

cases should be thoroughly investigated as a potential endemic genotype, especially if the cases are closely related in time or location.

- **Endemic case:** A case for which epidemiological or virological evidence indicates an endemic chain of transmission. Endemic transmission is defined as a chain of mumps virus transmission continuous for  $\geq 12$  months within the U.S.
- **Unknown source case:** A case for which an epidemiological or virological link to importation or to endemic transmission within the U.S. cannot be established after a thorough investigation. These cases must be carefully assessed epidemiologically to assure that they do not represent a sustained U.S.-acquired chain of transmission or an endemic chain of transmission within the U.S.

Internationally imported, import-linked, and imported-virus cases are considered collectively to be import-associated cases.

With previous contact with mumps virus either through vaccination (particularly with 2 doses) or natural infection, serum mumps IgM test results may be negative; IgG test results may be positive at initial blood draw and viral detection in RT-PCR or culture may have low yield. Therefore, mumps cases should not be ruled out by negative laboratory results. Serologic tests should be interpreted with caution, as false positive and false negative results are possible with IgM tests.

Currently, there is insufficient information to determine whether any mumps strains are endemic to the U.S. or to distinguish endemic from non-endemic strains.