

MUMPS CASE AND OUTBREAK QUICKSHEET
California Department of Public Health - updated May 2007

Infectious agent: The mumps virus is a member of the genus *Rubulavirus* in the family Paramyxovirus.

Mode of transmission: Mumps is transmitted by contact with virus-containing respiratory secretions, including saliva; the portals of entry are the nose and mouth.

Communicability: Mumps is less infectious than measles or varicella.

Susceptibility: Persons born after 1957 who have not received ≥ 1 dose of mumps containing vaccine on or after the first birthday or do not have laboratory evidence of mumps immunity or documentation of physician-diagnosed mumps are considered to be susceptible.

Period of Communicability: Maximum transmission is probably highest from 2 days before to 5 days after onset of parotitis; mumps virus has been isolated in saliva from between 2 and 7 days before until 9 days after onset of symptoms. Exposed individuals may be infectious for 12 to 25 days after their exposure and many infectious persons remain asymptomatic.

Exposure: Exposure is defined as face-to-face contact with an infectious case.

Incubation period: The incubation period varies from 12 to 25 days and is usually 16 to 18 days.

CDC CASE DEFINITION and CASE CLASSIFICATION (for purposes of public health reporting)

Clinical Case Definition: An illness with acute onset of unilateral or bilateral tender, self-limited swelling of the parotid or other salivary gland, lasting ≥ 2 days, and without other apparent cause.

Case Classification:

Probable: a case that meets the clinical case definition, has noncontributory or no serologic or virologic testing, and is not epidemiologically linked to a confirmed or probable case.

Confirmed: a case that is laboratory confirmed OR that meets the clinical case definition and is epidemiologically linked to a confirmed or probable case. A laboratory-confirmed case does not need to meet the clinical case definition.

CLINICAL FEATURES

Up to 20% of persons infected with mumps are asymptomatic. An additional 40%-50% may have only non-specific or mild respiratory symptoms.

Prodrome: Prodromal symptoms are nonspecific and include myalgia, anorexia, malaise, headache and low-grade fever.

Parotitis: A swelling of the parotid glands may be noted as earache or as tenderness to touch at the angle of the jaw, occurring 1-2 days after prodrome.

Differential diagnosis: Not all cases of parotitis - especially sporadic ones - are due to mumps. Parotitis can also be caused by parainfluenzae virus types 1 and 3, influenza A virus, Coxsackie A virus, echovirus, lymphocytic choriomeningitis virus, human immunodeficiency virus, and other non-infectious causes such as drugs, tumors, immunologic diseases, and obstruction of the salivary duct.

Complications: Severe complications of mumps are rare. Some complications are known to occur more frequently in adults than among children. Adults have a higher risk for mumps meningoencephalitis than children. In addition, orchitis occurs in up to 38% of cases in post pubertal males. Although it is frequently bilateral, it rarely causes sterility. Other complications of mumps are mastitis, oophoritis and pancreatitis.

LABORATORY TESTING AND CONFIRMATION

- Positive serologic test for mumps IgM antibody* in serum collected 0-28 days after onset of symptoms
- Significant rise in mumps IgG in paired acute and convalescent sera drawn two weeks apart. Acute specimen should be collected as soon as possible after onset of symptoms, including parotitis.
- Isolation of mumps virus from buccal swabs (preferred) and/or throat swabs (collected from 7 days before until 9 days after salivary enlargement) or a urine specimen (collected from 6 days before to 15 days after onset of symptoms, including parotitis).
- *Note: False-positive IgM results by immunofluorescent antibody assays have been reported. There are currently no FDA-approved enzyme immunoassays (EIA) for detection of mumps IgM antibody. If the suspected case has received one or more doses of MMR, missing, delayed or transient IgM responses may also be seen.
- The DHS Viral and Rickettsial Disease Laboratory (VRDL) encourages submission of specimens from suspected cases of mumps. Laboratory diagnosis can be made either by isolation of mumps from urine and/or respiratory specimens or serologic testing.

RECOMMENDED TREATMENT AND CHEMOPROPHYLAXIS

Treatment of mumps is supportive. Neither mumps vaccine nor IG is effective for postexposure prophylaxis. Postexposure vaccination with MMR of susceptible persons is recommended unless otherwise contraindicated, because if exposure to mumps does not cause infection, post exposure vaccination should induce protection against subsequent exposure(s) to mumps, measles or rubella.

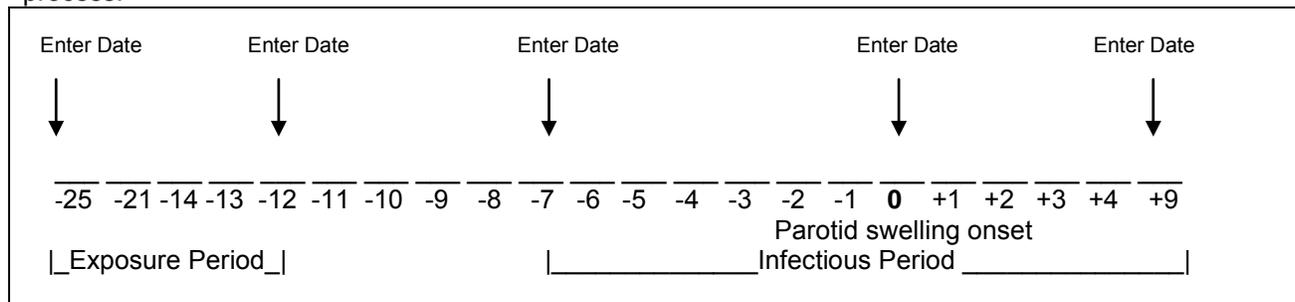
REPORTING AND NOTIFICATION

Both confirmed and probable mumps cases are reportable to the DHS by the Confidential Morbidity Report (CMR). A mumps-specific case report form has recently been developed and should be submitted to the DHS on all cases meeting the case definition (probable or confirmed).

STEPS FOR MUMPS CASE INVESTIGATION

1. Confirm clinical signs and symptoms and verify that suspected case could be susceptible to mumps (check vaccination and disease history). Try to determine if suspected case was in contact with a person with mumps and/or has recently traveled to an area where mumps is endemic/epidemic.
2. Ensure that case is isolated until 5 days after onset of parotitis.
3. Arrange for serological and/or virologic testing of suspected case.
4. Identify susceptible contacts. Identify all household and other close contacts and determine those who do not have mumps immunity.
5. Refer susceptible pregnant women to their prenatal care provider.
6. Refer susceptible contacts for vaccination. Post-exposure vaccination will not prevent or alter the clinical severity of mumps. However, if exposure to mumps does not cause infection, vaccination should induce protection against subsequent infection.
7. If one confirmed case occurs in a healthcare setting, exposed personnel who do not have documented immunity to mumps should be removed from all patient contact and be excluded from duty from the 12th day after first exposure until the 26th day after the last exposure.
8. If one confirmed cases occurs in a school/daycare center, a notification letter should be sent to parents reminding them that that two doses of MMR are recommended for all school-aged children.
9. If a confirmed outbreak (≥ 5 confirmed or probable cases within 2 months) occurs in a childcare facility, a school or college, or other setting with potential for spread, susceptible persons should be excluded until they can provide proof of immunity or until 26 days after onset of parotitis in the last reported case.
10. Determine the possible source of exposure (within three weeks prior to onset of parotitis).

The following time line depicts the clinical course of mumps and may be useful in the investigation process:



MUMPS PREVENTION

- The Advisory Committee on Immunization Practices (ACIP) recommends that all pre-school aged children 12 months and older receive one dose of MMR vaccine and all school-aged children receive two doses. In addition, they recommend that all undergraduate and graduate students at post-high school institutions receive two doses of MMR vaccine or provide proof of immunity before enrollment.
- In addition, the ACIP recommends that during mumps outbreaks, healthcare workers and others who are at increased risk of acquiring mumps and transmitting it to others should receive two doses of MMR vaccine or provide proof of immunity.
- During mumps outbreaks, health authorities may further broaden vaccination recommendations.