

Mumps



Case Definition

Laboratory-confirmed case: Clinically compatible illness with IgM positive on acute blood or four-fold rise in acute and convalescent bloods.

Clinical case: Clinically compatible illness with epidemiological link to a laboratory-confirmed case.

Reporting Requirements

- All positive specimens for mumps IgM must be reported by laboratory.
- All cases must be reported by attending health care professional.

Clinical Presentation/Natural History

An acute viral disease characterized by fever, as well as swelling and tenderness of one or more salivary glands, usually the parotid and sometimes the sublingual or submandibular glands. Orchitis, usually unilateral, occurs in 20-30% of postpubertal males and oophoritis in approximately 5% of postpubertal females; sterility is an extremely rare sequela. The CNS is frequently involved, either early or late in the disease, usually as an aseptic meningitis, almost always without sequelae. Encephalitis is rare (1-2/10,000 cases); pancreatitis, usually mild, occurs in 4% of cases but a suggested association with diabetes remains unproven. Overall, mortality from mumps is approximately 1/10,000 cases.

Neurologic involvement and orchitis may occur without salivary gland involvement. Permanent nerve deafness, usually unilateral, is a rare complication. Pancreatitis, neuritis, arthritis, mastitis, nephritis, thyroiditis and pericarditis may occur. Mumps infection during the first trimester of pregnancy may increase the rate of spontaneous abortion, but there is no firm evidence that mumps during pregnancy causes congenital malformations.

Etiology

Mumps virus, a member of the family Paramyxoviridae, genus Paramyxovirus, is antigenically related to the parainfluenza viruses.

Epidemiology

Reservoir and Source: Humans

Transmission: By droplet spread and by direct contact with the saliva of an infected person.

Occurrence:

General: Mumps is recognized less regularly than other common communicable diseases of childhood, such as measles and chickenpox, although serologic studies show that 85% of people have had mumps infection by adult life in the absence of immunization. Approximately one third of exposed susceptible persons have inapparent infections; most infections in children younger than two years of age are subclinical. Winter and spring are seasons of greatest incidence.

In the United States, the incidence of mumps has declined dramatically since the wide use of mumps vaccine began in 1967. This decline has occurred in all age groups, but with effective pediatric and preschool immunization programs, the greatest risk of infection has shifted toward older children, adolescents and young adults. However, in 1986 and 1987, an increase in reported mumps cases occurred in the United States, with a steady decline in cases subsequently.

Canada: 264 cases were reported in 1997.

Manitoba: One case was reported in 1999. Between 1995 and 1999, 23 cases were reported.

Incubation Period: Approximately 12 to 25 days, commonly 18 days.

Susceptibility and Resistance: Immunity is generally life-long and develops after inapparent, as well as clinical, infections. Most adults, particularly those born before 1957, are likely to have been infected naturally and may be considered to be immune, even if they did not have recognized disease.

Period of Communicability: The virus has been isolated from saliva from six to seven days before overt parotitis to nine days after; exposed nonimmune persons should be considered infectious from the 12th through the 25th day after exposure. Maximum infectiousness occurs about 48 hours before onset of illness. Urine may be positive for as long as 14 days after onset of illness. Inapparent infections can be communicable.

Diagnosis

Mumps IgM and IgG ELISA serologic tests. IgM antibodies are usually present with the onset of illness. They reach a maximum level one week later and can be present for several weeks or months following illness. Virus can be isolated in chick embryo or cell cultures from saliva, blood, urine and CSF during the acute phase of the disease.

Key Investigations

- Immunization history.
- Contact history.

Control

Management of Cases:

Treatment:

- Supportive

Public Health Measures:

- Hospitalized patients should be placed on Droplet precautions for nine days after the onset of parotid swelling.
- Persons working in hospitals or with immunocompromised patients should be excluded from work for nine days after the onset of parotid swelling.

Management of Contacts:

- Public Health will identify susceptible contacts (see **Susceptibility and Resistance**) and recommend immunization even though this has not been demonstrated to prevent infection following exposure.
- Susceptible persons working in hospitals or with immunocompromised persons should be immunized and furloughed from days 12 to 25 following exposure.

Management of Outbreaks:

- Public notification of outbreak and provision of immunization to susceptible persons.

Preventive Measures:

- Immunization at one and five years of age as part of the routine Manitoba childhood immunization schedule.