



Mumps

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1. CASE DEFINITION

Confirmed Case

- Clinical illness* and laboratory confirmation on infection in the absence of recent immunization with mumps containing vaccine:
 - Isolation of mumps virus from an appropriate clinical specimen (viral swab of saliva or oral fluid collected from the buccal cavity or urine sample 5 ml or more preferable the first morning sample) **OR**
 - Detection of mumps virus RNA **OR**
 - Seroconversion or a significant rise (e.g. four fold or greater) in mumps IgG titre by any standard serologic assay between acute and convalescent sera **OR**
 - Positive serologic test for mumps IgM antibody in a person who is either epidemiologically linked to a laboratory-confirmed case or has recently travelled to an area of known mumps activity **OR**
 - Clinical illness* in a person with an epidemiologic link to a laboratory-confirmed case

Probably Case (outbreak only)

Clinical illness*

- In the absence of appropriate laboratory test

OR

- In the absence of an epidemiologic link to a laboratory-confirmed case

*Clinical illness is characterized by 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. A laboratory-confirmed case may not exhibit clinical illness as up to 30% of cases are asymptomatic.

Note: The most frequent reaction to measles-mumps-rubella (MMR) immunization is malaise and fever (with or without rash) occurring 7-12 days after immunization. Parotitis has occasionally occurred after immunization. However, this should be determined for each case, as these reactions and the time frame can vary.

2. DIAGNOSIS

- Diagnosing mumps in a vaccinated population is challenging
- When cases of mumps are sporadic, clinical diagnosis is less reliable
- IgM serology has the potential for false positive findings in vaccinated populations
- Recent vaccination with mumps vaccine (MMR) can elicit a mumps IgM antibody response
- If the clinical presentation is inconsistent with the diagnosis of mumps or in the absence of recent travel/exposure history, IgM results must be confirmed by the other confirmatory methods
- Mumps should also be confirmed by isolation of the virus in cell culture inoculated with throat washing (nasopharyngeal swab), saliva, urine or CSF or by the detection of viral RNA by PCR in these samples
- For more information refer to [Provincial Laboratory for Public Health \(ProvLab\) | Alberta Health Services](#)

3. REPORTING

As described in the [NWT Public Health Act 2009](#), health care professionals and laboratories shall provide the Chief Public Health Officer or designate with the information required by the regulations, within the time set out in the regulations.

Health Care Professional

- Confirmed or probable cases are to be reported to the Office of the Chief Public Health Officer (OCPHO) by telephone or fax within **24 hours** of diagnosis being made or opinion being formed, **AND**
- Complete and fax the Communicable Disease Reporting form: [Communicable Disease | HSS Professionals](#) to the OCPHO within **24 hours**
- Immediately report all outbreaks or suspect outbreaks by telephone to the OCPHO

Laboratories

- Report positive results to the OCPHO within **24 hours** by fax

4. OVERVIEW

For more information about mumps:

- Government of Canada: [Mumps - Canada.ca](#)
- Centres for Disease Control and Prevention: [Mumps | For Healthcare Providers | CDC](#)
- World Health Organization: [WHO | Mumps](#)

Causative Agent

- Mumps virus; family Paramyxoviridea; genus *Rubulavirus*

Clinical Presentation

- Mumps is an acute viral disease
- Subclinical infection is common
- 30% of cases are asymptomatic
- Prodromal symptoms are non-specific consisting of myalgia, anorexia, malaise, headache, and low-grade fever
- Acute symptoms include:

- Swelling and tenderness of one or more salivary glands-usually the parotid
- Parotitis is unilateral or bilateral occurs in 30-40% of infected persons
- Fever
- Pain on chewing or swallowing especially acidic liquids or food is one of the earliest symptoms
- Orchitis occurs in 20-30% of affected post pubertal males but sterility is extremely rare
- Respiratory symptoms especially in children younger than 5 years of age in 40-50% of cases
- Oophoritis in females in 5% of cases and may mimic appendicitis

Major Complications

- Mumps orchitis has been reported to be a risk factor for testicular cancer
- Hearing loss in both children and adults
- Pancreatitis in 4% of cases
- Aseptic meningitis in up to 10% of cases
- Encephalitis 1-10% of cases
- Mumps infection during the first trimester of pregnancy has been associated with spontaneous abortion

Transmission

- Mumps is spread by respiratory droplets, and by direct contact or fomites contaminated with the saliva of an infected person
- Disease (with or without symptoms) confers permanent immunity
- The mumps virus is quickly inactivated by heat, formalin, chloroform, ether and ultraviolet light
- The range of communicability is from 7 days before onset of parotitis to 5 days after onset
- The most infectious period is 1-2 days before onset of parotitis to 5 days after onset
- Subclinical infections can be communicable

Incubation Period

- About 16-18 days (range 12-25 days)

Clinical Guidance

- For patient specific clinical management consult your local health care professional, paediatrician or infectious disease specialist

5. PUBLIC HEALTH MEASURES

Public health response to increased mumps activity should be directed at management of cases, contact identification and management through the following methods:

- Define the at-risk populations and transmission settings
- Prevent further transmission through isolation of cases and contact education and awareness
- Protect susceptible populations with immunization

See Public Health Agency of Canada: Guidelines for the Prevention and Control of Mumps Outbreaks Canada: [Volume 35-S4 : 6.0 Management](#).

Management of Cases

- Confirm diagnosis and ensure appropriate clinical specimens (blood, saliva/oral fluid swab, NP swab and urine) have been collected
- Clients should remain at home and excluded from work, school, or other activities until diagnosis can be confirmed and/or for 5 days from date of onset of parotitis
- Determine immunization history
- Determine source of infection including any recent travel
- Encourage case to avoid sharing drinking glasses, eating utensil or any object used on the nose or mouth and to use good cough etiquette
- In hospital patients should be placed on droplet precautions until 5 days after onset of parotitis
- Immediately notify the facility's infection prevention & control practitioner

- See the NWT Infection Prevention & Control Manual for more information: [Policies and Guidelines, Standards and Manuals | HSS Professionals](#)
- Symptomatic or exposed health care workers should immediately notify Occupational Health and Safety/Infection Prevention & Control in their health facility
- Health Care Workers, regardless of immunization status, should be excluded from school, work and other activities for five days from onset of parotitis

Management of Contacts

- Known susceptible groups should be vaccinated to prevent mumps in future exposures to the disease. Vaccination does not prevent infection if the client has already been exposed
 - See the Evergreen Canadian Immunization Guide, mumps chapter Table 1 Criteria for Mumps Immunity: [Page 14: Canadian Immunization Guide: Part 4 - Active Vaccines - Canada.ca](#)
 - Susceptible contacts include:
 - » Those born in Canada in 1970 or later who did not receive two doses of mumps containing vaccine at least 4 weeks apart after their first birthday
 - » Those who have not had laboratory confirmed mumps
 - » Those who do not have documented immunity to mumps
- Contacts that are in a health care facility should be managed using droplet precautions for the duration of their period of communicability

Prevention

- Mumps is a vaccine preventable disease
- The vaccine for mumps is publicly funded in the NWT and offered according to the [NWT Immunization Schedule | HSS Professionals](#)
- Primary vaccination occurs in early childhood but can also be offered to susceptible adults born on or after 1970

6. PUBLIC & HEALTH PROFESSIONAL EDUCATION

- Government of Canada website for [Mumps - Vaccine-Preventable Diseases - Public Health Agency of Canada](#)

7. EPIDEMIOLOGY

- For more information on the epidemiology of mumps in the NWT see: <http://professionals.hss.gov.nt.ca/sites/default/files/epidemiological-summary-mumps.pdf>

8. REFERENCES

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