

# MUMPS

## Case definition

### CONFIRMED CASE

Clinical illness and laboratory confirmation of infection in the absence of recent immunization with mumps-containing vaccine (i.e.: in the previous 28 days):

- isolation of mumps virus from an appropriate clinical specimen  
**OR**
- detection of mumps virus RNA  
**OR**
- seroconversion or a significant rise [i.e. fourfold 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

### PROBABLE CASE

Clinical illness

- in the absence of appropriate laboratory test  
**OR**
- in the absence of an epidemiologic link to a laboratory-confirmed case

## Causative agent

Mumps virus, a member of the genus *Paramyxovirus*.

## Source

Humans

## Incubation

14-25 days, usually 14-18 days

## Transmission

Mumps is generally spread by close face-to-face contact. Infection occurs through direct contact with saliva or respiratory droplets from the nose or throat, spread through coughing, sneezing, sharing drinks, or kissing; or from contact with any surface that has been contaminated with the mumps virus.

## Communicability

Infectious period is approximately 7 days before to 5 days after symptom onset. A review [2009] of the scientific evidence suggests that, while the mumps virus can be isolated from saliva or respiratory secretions up to 16 days after parotitis onset, the risk of transmission after 5 days is considered low, due to decreasing viral load.

## Symptoms

Mumps is characterized by acute onset of unilateral or bilateral tender, self-limited swelling of the parotid or other salivary gland, lasting 2 or more days and without other apparent cause. Symptoms may also include fever, headache, muscle aching. Inflammation of the testicles [orchitis] can occur in 20-30 % of post-pubertal males. Rarely, mumps infection can lead to meningitis, inflammation of the ovaries, inflammation of the pancreas, and transient or permanent hearing loss. 20-30% of mumps infections can be asymptomatic.

## Diagnostic testing

Ideally, BOTH a buccal swab in viral transport media and urine in a sterile urine container should be transported to the lab at 4°C. Both are tested by polymerase chain reaction [PCR] for the presence of the mumps virus.

If unable to send both specimens, then:

- up to and including day 4 of symptom onset, send a buccal swab in viral transport medium and transport it to the lab at 4°C
- after day 4 send a urine specimen in a sterile container and transport it to the lab at 4°C

Serology: IgM testing is not used in Nova Scotia. During the mumps outbreak in 2007, it was observed that IgM testing missed 75% of acute cases, with the majority of infections being diagnosed by PCR testing. Because of these poor performance characteristics of serology and after discussions with Public Health, the lab no longer offers IgM testing for mumps [as of November 30, 2012]. A request for Mumps IgM testing will be cancelled and the following report sent: “The sensitivity of mumps IgM for the diagnosis of acute infection is low and will only be performed at the request of Public Health.”

## Treatment

There is no specific or prophylactic treatment for mumps; all confirmed and clinical cases of mumps should be offered supportive care.

# PUBLIC HEALTH MANAGEMENT & RESPONSE

---

## Case management

### Initiate case follow-up upon receipt of the report.

The health care provider provides supportive care for the case as there is no specific treatment for mumps.

Upon receiving the report of mumps, the public health nurse begins the investigation. It is very important to determine if the case meets one of the [case definitions](#).

#### *Determine case status and clinical details:*

Call health care provider to discuss the case. Advise about the importance of contact investigation. Inform the physician that Public Health will conduct contact investigation in order to conduct symptom inquiry, provide education on mumps disease, review immunization status and advise as indicated.

#### *Contact and educate individuals or family:*

- Discuss your role in the management of the disease and contact tracing.
- Assess risk factors and susceptibility: obtain immunization and/or disease history, assess epidemiologic links to cases or settings, including travel to other provinces or countries.
- Provide information to the infected individual or the parents using the appropriate general information sheet.
- Encourage cases to practice good hand hygiene, to avoid sharing drinking glasses or utensils, and to cover coughs and sneezes with a tissue or their forearm.
- If isolation or exclusion is required, educate the individual and family about these requirements.
- Obtain names and addresses for all contacts meeting the definition of a contact.

Discuss case information with the Medical Officer of Health (MOH).

Complete the [Vaccine Preventable Case Report Form](#)

## Health care/chronic care facilities

- Refer Health Care Workers (HCW) to “Occupational Management of Communicable Disease Exposure and Illness in Health Care Workers”: [ipc.gov.ns.ca/standards-guidelines](http://ipc.gov.ns.ca/standards-guidelines)
- HCW who are a close contact of a case of mumps in the community should report to Occupational Health and/or Infection Control immediately. A close contact is defined as an individual with unprotected face-to-face contact within two metres of a case.
- HCW who are a close contact of a case of mumps within the facility should report to Occupational Health and/or Infection Control if not already identified by those programs during the course of an investigation.
- Patients/Residents: respiratory isolation and private room for 5 days after onset of swelling.

## Child care setting

- Encourage **child care** settings to practice general good hygiene to prevent disease spread [i.e. use good hand hygiene, avoid sharing food/drinks/utensils, cover coughs and sneezes with a tissue or forearm, and stay home when ill].
- During an outbreak, the MOH and/or facility management may recommend closure of a facility temporarily (usually not necessary, although the number of ill staff and children may make it logistically impossible or unfeasible to operate). If the facility is closed, it is important for parents to keep ill children at home and not send the ill child to an alternative child care location.
- Refer to the “Guidelines for Communicable Disease Control for Child Care Programs and Home Day Care Agencies” at: [novascotia.ca/dhw/cdpc/info-for-professionals.asp](http://novascotia.ca/dhw/cdpc/info-for-professionals.asp)

## Schools/educational institutions

- Encourage schools/educational institutions to promote general good hygiene to prevent disease spread [i.e. use good hand hygiene, avoid sharing food/drinks/utensils, cover coughs and sneezes with a tissue or forearm, and stay home when ill].
- During an outbreak, the MOH and/or facility management may recommend closure of a facility temporarily (usually not necessary, although the number of ill staff and students may make it logistically impossible or unfeasible to operate).

## Exclusion

- Advise case to stay home (self-isolate) and not attend school, educational institutions, child care centre or workplace for 5 days from onset of parotid gland swelling.
- Public health (PH) may inform the school or child care centre when it is permissible for the case to return.

## Other potential exclusions

Health Care Workers: Refer to Occupational Health Guidelines:

[ipc.gov.ns.ca/standards-guidelines](http://ipc.gov.ns.ca/standards-guidelines)

## Education

- Vaccination of all infants at 1 year of age, and again between 4 and 6 years of age (prior to school entry) with MMR or MMRV vaccine.
- Vaccination of all susceptible persons without contraindications to the vaccine.
- Individuals should be considered susceptible **unless** they:
  - have documentation of two mumps (usually MMR) vaccinations on or after their first birthday **OR**
  - have documentation of physician-diagnosed mumps **OR**
  - have serologic evidence of immunity **OR**
  - were born before 1970
- Encourage cases to practice good hand hygiene, avoid sharing drinking glasses or utensils, and to cover coughs and sneezes with a tissue or their forearm.

## Contact tracing

A person is defined as being a contact of if they fall into any of the following categories during the infectious period [[Communicability](#)].

- household contact of a case
- persons who share sleeping arrangements with the case, including shared rooms (i.e. dormitories)
- direct contact with the oral/nasal secretions of a case (i.e. face to face contact, sharing cigarettes/drinking glasses/food/cosmetics like lip gloss, kissing on the mouth)
- children and staff in child care and school facilities that case attends

- Communicate with all identified contacts to discuss:
  - exposure,
  - susceptibility,
  - provide education on mumps disease, its symptoms and prevention.
- Advise to contact PH and visit a health care provider should any symptoms develop. Advise to alert the office of the health care provider of possible mumps exposure prior to visiting the office (if possible).
- Immunize contacts as needed, recognizing that immunization may not prevent disease if the individual is already infected. Passive immunization with immunoglobulin is not effective in preventing mumps.

Discuss exclusion with MOH as required. Generally, isolation of mumps-susceptible contacts is not required.

***Contacts who refuse vaccination:***

Susceptible, unimmunized contacts may be considered for exclusion from school, child care or university until at least 26 days after the onset of parotitis in the last person with mumps in the affected school or child care setting. Excluded contacts may return immediately after vaccination.

**Prophylaxis**

There is no specific prophylactic treatment for mumps. Immunization of mumps-susceptible contacts with MMR or MMRV vaccine can be considered. However, immunization after exposure may not prevent infection. Passive immunization with immunoglobulin is not effective in preventing mumps.

During an outbreak, based on the epidemiology, target susceptible groups for immunization, especially those at greatest risk of exposure.

**Return from exclusion**

PH may inform the school or child care setting when it is permissible for the contact to return.

**Surveillance forms**

[novascotia.ca/dhw/populationhealth/surveillanceguidelines/NS\\_Notifiable\\_Disease\\_Surveillance\\_Case\\_Report\\_Form.pdf](http://novascotia.ca/dhw/populationhealth/surveillanceguidelines/NS_Notifiable_Disease_Surveillance_Case_Report_Form.pdf)

[novascotia.ca/dhw/populationhealth/surveillanceguidelines/Vaccine\\_Preventable\\_Case\\_Report\\_Form.pdf](http://novascotia.ca/dhw/populationhealth/surveillanceguidelines/Vaccine_Preventable_Case_Report_Form.pdf)

## **General Information Sheet**

### **REFERENCES**

Canadian Communicable Disease Report 2010 Vol. 36 *Guidelines for the Prevention and Control of Mumps Outbreaks in Canada* [phac-aspc.gc.ca/publicat/ccdr-rmtc/10pdf/36s1-eng.pdf](http://phac-aspc.gc.ca/publicat/ccdr-rmtc/10pdf/36s1-eng.pdf)

*Control of Communicable Diseases Manual, 19th edition* 2008 James Chin, editor American Public Health Association

*Occupational Management of Communicable Disease Exposure and Illness in Healthcare Workers* IPCNS, Dept. of Health and Wellness, March 2012 [ipc.gov.ns.ca/standards-guidelines](http://ipc.gov.ns.ca/standards-guidelines)

Public Health Agency of Canada [2009] *Case Definitions for Communicable Diseases under National Surveillance CCDR 2009; 3552, 1-123*. Retrieved from [phac-aspc.gc.ca/publicat/ccdr-rmtc/09pdf/35s2-eng.pdf](http://phac-aspc.gc.ca/publicat/ccdr-rmtc/09pdf/35s2-eng.pdf)