

## MUMPS

Based on the MoH Communicable Diseases Control Manual 2012 –November 2017 update

### Associated Documents

Case Report Form:

<K:\CFS\ProtectionTeam\FinalDocs\NotifiableConditions\Mumps\FormsStdLettersQuest\MMRCCaseReportFormJune2013.pdf>

Fact sheet:

<K:\CFS\Quality\ApprovedDocuments\ProtectionTeam\FactSheets\Mumps-Fact-Sheet.pdf>

### The Illness

Mumps is a paramyxovirus transmitted by airborne droplets or direct contact with infected respiratory tract secretions or urine. Humans are the only known host of the virus.

Classic mumps, an acute viral illness, is characterised by fever, headache, and swelling and tenderness of one or more parotid (salivary) glands. At least 30 percent of mumps infections in children are asymptomatic. Patients may have no involvement of salivary glands but still experience involvement of other organs (eg, orchitis or meningitis).

The complications of symptomatic mumps include:

- aseptic meningitis in 15 percent (almost always without sequelae),
- orchitis (usually unilateral) in up to 20 percent of post-pubertal males, and oophoritis in 5 percent of post-pubertal females. Sterility occurs rarely.
- profound unilateral nerve deafness occurs in 1 in 15,000 cases.
- encephalitis has been reported to occur at a frequency of between 1 in 400 and 1 in 6000, the latter being a more realistic estimate.
- the case fatality rate for mumps encephalitis is 1.4 percent, while the overall mumps case fatality rate is reported as 1.8 per 10,000 cases.
- pancreatitis, neuritis, arthritis, mastitis, nephritis, thyroiditis and pericarditis may also occur.
- mumps in the first trimester of pregnancy may increase the rate of spontaneous abortion, but there is no evidence that it causes foetal abnormalities.

#### Epidemiology in New Zealand

The incidence of mumps in New Zealand has been stable in recent years. Mumps epidemics in New Zealand occurred in 1989 and 1994 while the most recent began at the end of 2016 (mainly in Auckland region). Before the introduction of the measles–mumps–rubella (MMR) vaccine in 1990, mumps epidemics occurred every 3–5 years.

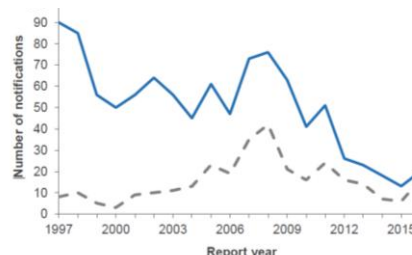
Detailed epidemiological information is available on the Institute of Environmental Science and Research (ESR) surveillance website in the annual notifiable disease reports at [https://surv.esr.cri.nz/surveillance/annual\\_surveillance.php](https://surv.esr.cri.nz/surveillance/annual_surveillance.php).

Globally, mumps outbreaks continue to occur, especially in teenagers and young adults. These outbreaks are facilitated by mumps vaccine effectiveness (lower than for measles and rubella), waning vaccine-induced immunity and populations in settings more conducive to outbreaks (eg, schools, universities).

Given that mumps cases may only be mildly symptomatic, and that about a third of infections may be asymptomatic, infected (and possibly contagious) individuals may not consult health services. Therefore, identifying chains of transmission in an outbreak situation may be difficult.

The national 2015 mumps notification rate was 0.4 per 100,000 population, but in 2017 was 28.7. This increase was due to an epidemic centred in Auckland.

NZ mumps notifications and laboratory confirmed cases. 1997-2016



	<p><b>CASE DEFINITION</b></p> <p><b>Clinical description</b> An acute illness with unilateral or bilateral tenderness and swelling of the parotid or other salivary gland/s, lasting more than 2 days, with or without fever and without other apparent cause. Other symptoms may uncommonly include orchitis, mastitis, oophoritis, meningitis, encephalitis, pancreatitis and hearing loss.</p> <p><b>Incubation period:</b> About 16–18 days, ranging from 12–25 days.</p> <p><b>Mode of transmission:</b> By droplet spread or by direct contact with saliva or fomites from an infected person.</p> <p><b>Period of communicability:</b> People with mumps are most infectious from 2 days before to 5 days after the onset of parotitis. However, mumps virus has been isolated in saliva from 7 days before to 9 days after the onset of parotitis. Asymptomatic cases also can be infectious. Exposed non-immune individuals should be considered infectious from 12 to 25 days after exposure.</p> <p><b>Prevention:</b> Prevention of transmission of mumps to others is dependent on early diagnosis, isolation of the infected patient, and immunisation (MMR) of susceptible exposed individuals. The vaccine (MMR) is 64–66% effective against laboratory-confirmed mumps after one dose and 83–88% after two doses.</p>
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<b>Notification Procedure</b>	
	<p>Cases must be or notified on suspicion. Notification should not await confirmation.</p> <p><b>Under investigation:</b> A case that has been notified, but information is not yet available to classify it as probable or confirmed.</p> <p><b>Probable:</b> A clinically compatible illness.</p> <p><b>Confirmed:</b> A clinically compatible illness that is laboratory confirmed or epidemiologically linked to a confirmed case.</p> <p><b>Not a case:</b> A case that has been investigated and subsequently found not to meet the case definition.</p>

<b>Laboratory Testing</b>	
	<p><b>Canterbury Health Laboratories</b> recommendations:</p> <ul style="list-style-type: none"> <li>• PCR of saliva is the test of choice.</li> <li>– A viral buccal swab (ideally after massaging the parotid gland for 30 seconds) [Southern Community Lab green virus swab into viral transport medium] is taken up to 7 days after parotitis onset, but ideally within 3 days.</li> <li>– Mumps serology will <b>not</b> be performed unless it has been first discussed with a microbiologist as serological diagnosis can be problematic particularly in those previously vaccinated.</li> <li>– Serological screening to identify susceptible contacts is not recommended. The presence of mumps-specific IgG does not necessarily predict protection.</li> <li>– A history of MMR vaccination and date of onset of parotitis is required on the requisition form.</li> <li>– If necessary, consult a microbiologist to discuss testing.</li> </ul> <p><b>If the case received a vaccine containing the mumps virus in the 6 weeks prior to symptom onset then laboratory definitive evidence requires also:</b></p> <ul style="list-style-type: none"> <li>• evidence of infection with a wild-type virus strain obtained through genetic characterisation.</li> </ul> <p>-----</p> <p><i>These testing recommendations differ from that of the Ministry's protocol. The difference is essentially to do with serology which Canterbury Health Laboratories does not recommend.</i></p> <p><b>Ministry of Health</b> recommendations can be seen here: <a href="http://www.health.govt.nz/system/files/documents/publications/cd-manual-mumps-nov17.pdf">http://www.health.govt.nz/system/files/documents/publications/cd-manual-mumps-nov17.pdf</a></p>

## Management of Case

### Investigation

In **West Coast**, the Public Health Nurses follow up these notifications.

- Action on the day of notification and ensure that case's details are obtained promptly.
- Fax the Case Report Form to the notifying doctor for completion. Discuss with the parent/guardian to complete all details.
- Check that the following information is obtained:
  - the date of onset (important to establish duration of communicability)
  - history of prior MMR vaccination (the vaccine may cause a fever around 6-12 days after immunisation)
  - history of travel
  - identify possible contacts, including travellers from overseas.
- Ensure laboratory confirmation viral detection in saliva, cerebrospinal fluid or urine has been attempted.

### Restriction

- Exclude cases from school, university, sports, early childhood services, health care employment or other work, and from close contact with other susceptible<sup>a</sup> people for 5 days from onset of glandular swelling.
- In a health care facility, take droplet precautions for 5 days after the onset of glandular swelling.

<sup>a</sup> Susceptible contact: anyone born after 1981 who has not had mumps infection or has not been fully vaccinated for their age.

### Treatment

- Therapy for mumps parotitis and the complication of orchitis is symptomatic.
- For patients whose complications may require hospitalisation.

### Counselling

- Advise the case and their caregivers of the nature of the infection and its mode of transmission. In particular, advise good hand hygiene, cough/sneeze etiquette, avoiding sharing food/drink/utensils, and social distancing.
- A fact sheet is available:  
<K:\CFS\Quality\ApprovedDocuments\ProtectionTeam\FactSheets\Mumps-Fact-Sheet.pdf>

## Management of Contacts

### Definition

Any person with close contact<sup>b</sup> (eg. through household, early childhood service, school, workplace, camp, cultural or sports-related activities, transportation or social mixing) with the case during the period of communicability.

### Susceptible contact

Anyone born after 1981 who has not had mumps infection or has not been fully vaccinated for their age (Note: mumps vaccine was first offered in the 1992 schedule as MMR at 15 months and 11 years).<sup>c</sup>

<sup>b</sup> For practical reasons close contact may be defined as face-to-face contact within 1 metre.

<sup>c</sup> Mumps vaccine was first offered in the 1990 schedule as MMR at 15 months and a second dose was introduced in 1992 at 11 years. However, any person born between 1969 and 1981 who has not received two documented doses of MMR vaccine should be offered the vaccine to protect them against measles and rubella. People born between 1991 and 1996 may have only had 1 dose of MMR as the second dose was offered as part of a school catch up programme at this time.

### Investigation

- In an outbreak, obtain a history of previous immunisation or natural illness with mumps to identify susceptible contacts. Serology to identify susceptible contacts is not recommended (see Laboratory Testing above) except when deciding if exclusion from tertiary education, school or early childhood services or work is indicated (see **Restriction**).
- If the case is a child who attends school or preschool advise school/preschool to inform parents/caregivers that a child at the school/preschool has mumps and they should ensure their child's MMR is up to date.

**Restriction** (refer to **Appendix** for flow diagram)

- Advise exclusion of susceptible contacts in health care settings and for those working or living with immune-compromised people from 12 days after the first exposure to 25 days after last exposure to the infectious case. Documented full immunisation with two MMR doses should be required in these situations to establish that a contact is immune.
- In general, **consider** advising exclusion of susceptible contacts with zero MMR doses from tertiary education, school or early childhood services or work from 12 days after the first exposure to 25 days after last exposure to the infectious case, if there is a high risk of mumps transmission. Exclusion is more important in secondary and tertiary education settings as these settings are more conducive to outbreaks.
- All excluded contacts in settings other than healthcare or with immunocompromised people can be readmitted immediately after they have received the first MMR dose. Those who have a history of one dose of MMR vaccination should be offered their second vaccine dose and be allowed to remain in school.
- These measures will increase overall immunity in these populations and limit the spread of mumps (as well as protecting against measles and rubella), but also minimise the disruption due to exclusion.
  - All vaccinations given should be recorded on the National Immunisation Register via the Practice Management Systems or by completing the NIR3 immunisation event form and sending this to the District Health Board NIR Administrator.

**Prophylaxis**

- Immunoglobulin is not effective.
- Immunisation with MMR vaccine is not effective against incubating infection, but refer susceptible contacts to their GP for an MMR for protection against future exposure.

**Counselling**

- Advise good hand hygiene, cough/sneeze etiquette, avoiding sharing food/drink/utensils, and social distancing.
- Advise all contacts of the incubation period and typical symptoms of mumps.
- Encourage them to seek early medical attention and avoid contact with others if symptoms develop.
- Advise that children's vaccinations be up to date.
- A fact sheet is available:  
<K:\CFS\Quality\ApprovedDocuments\ProtectionTeam\FactSheets\Mumps-Fact-Sheet.pdf>

**Other Control Measures**

**Prevention**

- Make sure that all those born after 1969 and who are susceptible are offered MMR vaccine, with priority given to those borne after 1981.

**Source identification**

- Check for other cases in the community.

**Disinfection**

- Clean and disinfect surfaces and articles soiled with saliva or urine.
- For more details, refer to Ministry of Health, Communicable Diseases Control Manual 2012, Appendix 1: Disinfection<sup>2</sup>,  
<http://www.health.govt.nz/system/files/documents/publications/cd-manual-appendices-may2012.pdf>

**Health education**

- Advise complete childhood vaccination with MMR vaccine. This involves two doses before school entry, the first at 12–15 months of age and the second at 4 years.
- Advise early childhood services to keep up-to-date immunisation records.

**Outbreak response**

The focus of the Public Health response should be:

- to increase population immunity against measles, mumps and rubella

- to limit outbreaks in settings where transmissions may be more intense and prompt public health intervention may be effective (especially secondary and tertiary education)
- to stop any spread in health care settings, and protect immune-compromised people.
- ⇒ Immunisation response should be prioritised. Identify children who are unvaccinated and advise MMR vaccination.

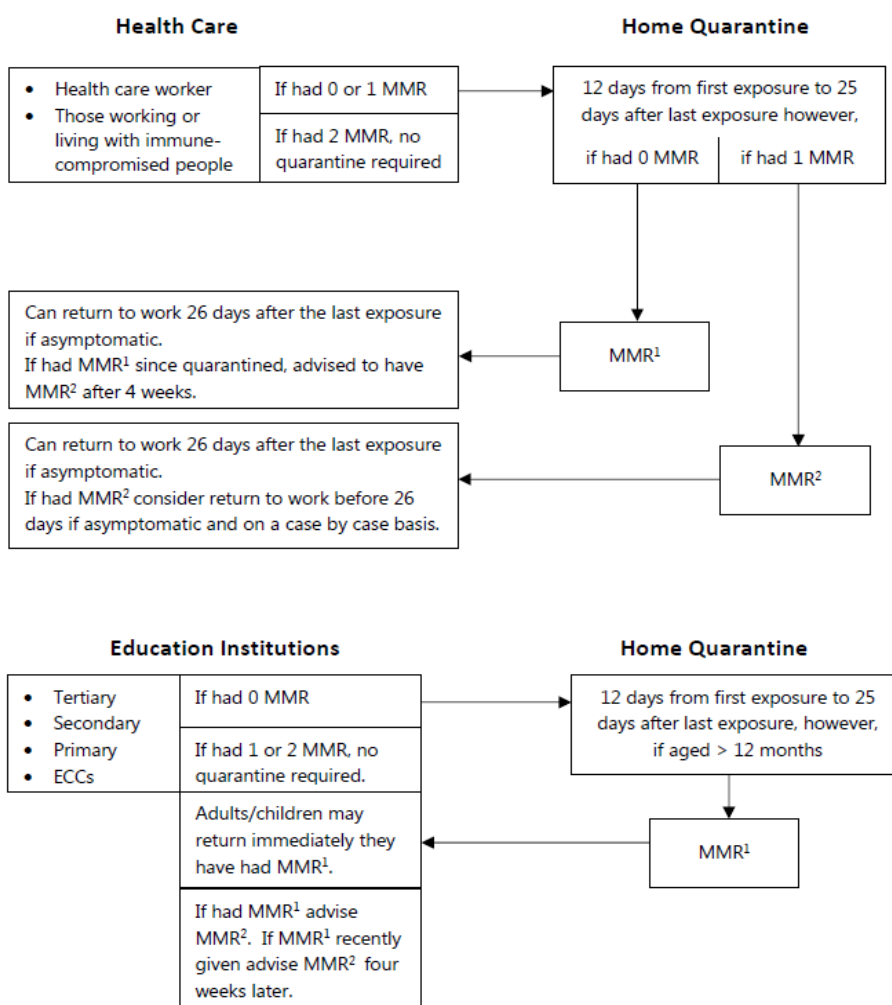
## Reporting

- Ensure complete case information is entered into EpiSurv.
- If a cluster of cases occurs, contact the Ministry of Health Communicable Diseases Team and outbreak liaison staff at ESR, and complete the Outbreak Report Form.
- Encourage early childhood services to keep up-to-date immunisation records.
- If an outbreak, write report for Outbreak Report File  
<K:\CFS\ProtectionTeam\FinalDocs\notifiableConditions\Mumps\Outbreaks>.

## APPENDIX

### An outline of the management of mumps contacts liable for home quarantine

Ministry of Health Communicable Disease Control Manual 2012 – November 2017 update  
Auckland Regional Public Health Service HealthPathways 2017



\* Anyone born before 1982 is assumed to be immune to mumps

## References and further information

- Ministry of Health, Communicable Diseases Control Manual 2012 – November 2017 update, Mumps <http://www.health.govt.nz/system/files/documents/publications/cd-manual-mumps-nov17.pdf>
- Ministry of Health, Communicable Diseases Control Manual 2012, Appendix 1: Disinfection, <http://www.health.govt.nz/system/files/documents/publications/cd-manual-appendix-1-dec17.pdf>
- UpToDate, Epidemiology clinical manifestations diagnosis and management of mumps [http://www.uptodate.com/contents/epidemiology-clinical-manifestations-diagnosis-and-management-of-mumps?source=search\\_result&search=mumps+children&selectedTitle=1%7E150](http://www.uptodate.com/contents/epidemiology-clinical-manifestations-diagnosis-and-management-of-mumps?source=search_result&search=mumps+children&selectedTitle=1%7E150)
- Ministry of Health, Immunisation Handbook 2017 <http://www.health.govt.nz/publication/immunisation-handbook-2017>
- ESR, Notifiable And Other diseases in New Zealand: Annual Surveillance Report 2016 [https://surv.esr.cri.nz/PDF\\_surveillance/AnnualRpt/AnnualSurv/2016/2016AnnualNDRReportFinal.pdf](https://surv.esr.cri.nz/PDF_surveillance/AnnualRpt/AnnualSurv/2016/2016AnnualNDRReportFinal.pdf)
- NSW Health, Infectious Diseases, Control Guidelines, Mumps, <http://www.health.nsw.gov.au/Infectious/controlguideline/Pages/mumps.aspx>
- Auckland Regional Public Health Service, HealthPathways Mumps page, 2017