



### **Infectious Agent**

The measles virus, a paramyxovirus.

### **Clinical Features**

Symptoms usually start with progressive fever, fatigue, conjunctivitis, coryza and cough, followed in 2 to 4 days by a florid maculopapular rash that starts on the face and spreads down the trunk and limbs over 1 to 2 days and then resolves gradually over the next week. Koplik spots (pathognomonic lesions on the buccal mucosa) may appear 1 to 2 days prior to the onset of the rash. Cases are usually very unwell, and complications such as bronchopneumonia and encephalitis are relatively common. Measles during pregnancy is more severe, with an increased risk of premature labour and spontaneous abortion.

### **Epidemiology**

From 2000 to 2005, 34 cases of measles were identified, mostly in unimmunised adults with a history of recent overseas travel to countries with low measles immunisation coverage, or local unimmunised contacts of these cases (i.e. secondary cases). Since 2001, two imported measles cases each caused an outbreak of 10 secondary cases in local unimmunised adults. Measles immunity in Western Australia is lowest in persons born between 1966 and 1983.

### **Reservoir**

Human only.

### **Mode of Transmission**

Measles, one of the most infectious diseases, is transmitted by airborne droplets and by direct or indirect contact with respiratory secretions (e.g. contaminated objects or surfaces). Spread can occur for up to 2 hours after a measles case has left a room.

### **Incubation Period**

Usually about 10 days (range 7 to 18 days) to the onset of fever and about 14 days to the onset of rash.

### **Infectious Period**

From about 5 days before to 4 days after the onset of the rash.

### **Immunity**

Immunity following infection is life-long. Two doses of measles vaccine given at 12 months of age or older and at least 1 month apart usually provide life-long protection. Persons born prior to 1966 are considered to be immune from measles due to infection during childhood.

### **Diagnosis**

Differential diagnoses: include roseola, Parvovirus B19 (Slapped Cheek Syndrome), enterovirus, adenovirus, Scarlet Fever, drug allergy, Epstein-Barr virus (Glandular Fever), Ross River virus, or rubella (also eliminated in WA since 2000).

Serology, PCR, culture: Every suspected case of measles should immediately have serum and a throat and nose swab taken for urgent measles IgM and IgG serology and measles PCR and culture. A negative IgM result does not exclude measles, especially if the sample was taken less than 72 hours after onset of the rash. False-positive IgM results can occur with measles vaccination within the previous 3 months and with some other rash infections.



#### Case management

- ◆ Confirm diagnosis – discuss diagnosis and serology/PCR/culture specimens with clinical microbiologist if required.
- ◆ Immediately exclude cases from child care, school, work, or close contact with potentially susceptible (see below) persons for at least 4 days after the onset of the rash.
- ◆ Provide case with measles information and advise case to stay at home while infectious, avoiding contact with susceptible persons.
- ◆ Notify the local Population Health Unit or Communicable Disease Control Directorate (Telephone: 08 9388 4868).
- ◆ Hospitalised cases should be kept in strict respiratory isolation, preferably in a negative pressure room, for at least 4 days after the onset of the rash.

#### Contact management

Any person who has shared the same breathing airspace with an infectious measles case for any length of time is a contact.

Higher risk contacts (i.e. persons with longer exposures) include household members, children and adults at child care, preschool or school with the case (particularly those who share the same classroom), workmates who share the same room with the case, persons sleeping overnight in the same room, and persons who shared a waiting area in a health care facility (e.g. GP surgery, Emergency Department) for up to two hours (i.e. the average time it takes for a measles aerosol to disperse) after the infectious case left.

Susceptible contacts include persons who do not have documented serologic evidence of measles immunity and:

- ◆ are less than 6 months of age and whose mother is unimmunised (i.e. no maternal antibodies), or
- ◆ are 6 to 9 months of age (i.e. no maternal antibodies), or
- ◆ are 9 months to 4 years of age and do not have documented evidence of at least one measles vaccination, or
- ◆ are more than 4 years of age and born during or since 1966 and do not have documented evidence of at least two measles vaccinations.

#### Prophylaxis

- ◆ Within 72 hours of first exposure to an infectious measles case, offer measles-mumps-rubella (MMR) vaccination to susceptible contacts 9 months of age or older (excluding pregnant women), or
- ◆ Within 7 days of first exposure to an infectious measles case, offer intramuscular Normal Human Immunoglobulin (NHIG) to susceptible contacts of any age.

The dosage of NHIG is 0.2 ml/kg to a maximum of 15ml for immunocompetent persons and pregnant women, and 0.5 ml/kg to a maximum of 15ml for immunosuppressed persons. MMR vaccination should be delayed for at least 3 months after administration of NHIG.



# Measles Information for GPs June 2006

## Exclusion

Immediately exclude:

- ♦ susceptible contacts from child care or school for at least 14 days after the onset of the rash in the last case in the facility, or until the contact has received MMR or NHIG prophylaxis.
- ♦ immunosuppressed children or staff, or infants less than 9 months of age, for at least 14 days after the onset of the rash in the last case in the facility, regardless of their measles vaccination status or NHIG prophylaxis.

## Information for contacts

Advise susceptible contacts (or their parents/guardians) to:

- ♦ observe for symptoms and signs of measles for up to 18 days after first contact with an infectious case (or longer if the contact is given NHIG),
- ♦ immediately telephone their doctor or health care provider if they think they are developing measles and isolate themselves from contact with potentially susceptible persons (e.g. by staying home and avoiding public transport, GP and Emergency Department waiting rooms),
- ♦ immediately inform GP surgery/ambulance/Emergency Department staff that they may have measles on arrival.

## **More information**

See the Australian Immunisation Handbook, 8th Edition (pp182-192), also available at [www.immunise.gov.au/handbook.htm](http://www.immunise.gov.au/handbook.htm) , or phone your local Public Health Unit:

<b>North Metro</b>	<b>9345 7113</b>	<b>Kimberley</b>	<b>9194 1646</b>
<b>East Metro</b>	<b>9224 1603</b>	<b>Pilbara</b>	<b>9172 8333</b>
<b>South Metro</b>	<b>9431 0200</b>	<b>Gascoyne</b>	<b>9941 0560</b>
<b>South West</b>	<b>9792 2500</b>	<b>Midwest</b>	<b>9956 1985</b>
<b>Great Southern</b>	<b>9842 7500</b>	<b>Wheatbelt</b>	<b>9622 4320</b>
<b>Goldfields</b>	<b>9080 8200</b>		

Information the vaccination status of children vaccinated under the age of 7 years of age can be obtained by phoning the Australian Childhood Immunisation Register (ACIR) on 1800 653 809 (free call).

A second MMR vaccination was introduced to the childhood immunisation schedule in Australia in 1998 and a “catch-up” program was offered to parents in that year.

If your child was in primary school in 1998, or younger, call your local Public Health Unit Nurse for information on your child’s MMR record, if you unable to locate your child’s vaccination record card.