

# INFECTION CONTROL

## NEWSLETTER

May 2010

### Measles



Measles is a viral disease that was once very common in childhood. It is also known as Rubeola, Hard Measles, Red Measles, Morbilli and English Measles. These names summarise what the disease is like. The classical symptoms of measles include four day fevers, the three Cs—cough, coryza (runny nose) and conjunctivitis (red eyes). The fever may reach up to 40 °C (104 °F). Koplik's spots seen inside the mouth are a unique sign for measles.

The characteristic measles rash is described as a generalized, maculopapular, erythematous rash that begins several days after the fever starts. It starts on the head before spreading to cover most of the body, often causing itching. The rash is said to "stain" the skin, changing colour from red to dark brown, before disappearing.

Measles is spread through respiration (contact with fluids from an infected person's nose and mouth, either directly or through aerosol transmission), and is highly contagious—90% of people without immunity sharing a house with an infected person will catch it. The infection has an average incubation period of 14 days (range 6–19 days) and infectivity lasts from 2–4 days prior, until 2–5 days following the onset of the rash (i.e. 4–9 days infectivity in total). So it can be spread before anyone knows it.

Complications with measles are quite common, ranging from relatively mild and less serious diarrhoea, to pneumonia, otitis media, acute encephalitis, subacute sclerosing panencephalitis and corneal ulceration leading to corneal scarring. These complications are worse and more common in countries where children are malnourished and also in adults.

The fatality rate from measles for otherwise healthy people in developed countries is 3 deaths per thousand cases, or 0.3%. In underdeveloped nations with high rates of malnutrition and poor healthcare, fatality rates have been as high as 28%.

According to the World Health Organization (WHO), measles is a leading cause of vaccine-preventable childhood mortality. Recently in New Zealand there have been two outbreaks of measles. Last year one outbreak occurred in Christchurch, and this year there has been another outbreak that started in Hokianga. Both of these outbreaks spread to other parts of New Zealand. The latest outbreak is slowing down and there have been no further cases in the last 10 days (written 3<sup>rd</sup> May 2010).

In our region we have not had a confirmed case of measles since 1991. If you suspect that you have a case of measles notify the on call Health Protection Officer or the Medical Officer of Health via Gisborne Hospital Switchboard.

A probable case is defined as a person with a clinically compatible illness with all of the following:

1. a fever  $\geq 38^{\circ}\text{C}$
2. a generalised maculopapular rash lasting three or more days
3. cough, OR coryza, OR conjunctivitis, OR Koplik spots.

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### Specimen Collection

As a number of viral infections can mimic measles and cause measles-like rashes (eg rubella, parvovirus B19, enteroviruses etc.), confirmation by laboratory testing of clinically suspected cases is recommended.

#### 1. Serological Confirmation (this is the best, cheapest and easiest)

1. In the first instance blood for serology should be collected

**Blood in gold top tube**

Specimen required: 5 ml plain blood or serum.

#### 2. Other Investigations

Other samples for virological investigation should be collected in consultation with the laboratory. Timing and choice of sample is important for accurate diagnosis.

2. Combined nasopharyngeal and throat swab in virus transport media
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### Specimen Collection for PCR

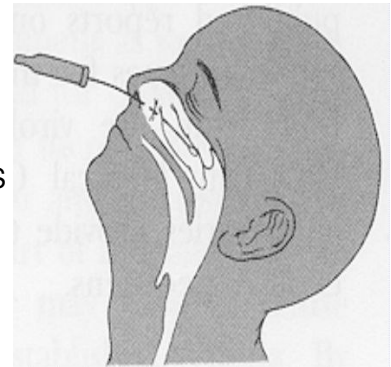
Virus is more likely to be present at the time of rash onset or within the first week after rash onset.

The specimen of choice is a nasopharyngeal swab and a throat swab from each patient combined together in a vial of viral transport medium (VTM).

Please follow the instructions below to optimise chance of obtaining MV RNA from the patient.

#### i. Nasopharyngeal Swab

1. Insert a **STERILE DRY SWAB** into the nasal cavity of the patient and wipe the swab along the sides of the nasal passage.
2. Place the swab with the cotton tip end into the small vial (or leakproof screw top tube with 3-5 ml volume) of virus transport medium. **KEEP TIP AND MEDIUM AS STERILE AS POSSIBLE.**
3. Break off (or cut off) the shaft of the swab at the top of the bottle so that the tip remains in the VTM and the lid can be screwed tightly shut.
4. Please ensure the lid is on properly to prevent leakage.
5. Label the VTM bottle with the patients ID, age, swab site (nasopharyngeal, throat or nasopharyngeal & throat) number of days post rash onset (if known). Swab tips (break or cut off shaft with scissors) from nose and throat of the **SAME PATIENT** can be combined into the same vial of VTM.



6.

#### ii. Throat Swab

1. Insert a dry **STERILE DRY SWAB** into the mouth and wipe along the back of the throat. It is important to take the sample from the back of the throat and **NOT** the sides of the mouth or cheek cavity, as the virus is more likely to be found in the cells at the back of the throat.
2. Follow steps 2-5 above.
- 3.

#### iii. Additional requirements for Specimen Collection

1. Sterile dry swabs must be sealed and sterile before use. Recommend use of a fresh sterile swab for each site to be sampled.
2. Viral transport medium: This is available from your laboratory service provider or nearest virus laboratory
3. Dry swabs or swabs placed into gel type transport media **ARE NOT SUITABLE** for recovery of viral RNA and are not recommended.