



MEASLES

Tracey Johnson

Infection Control Specialist Nurse

Overview



- Measles is a highly infectious viral illness.
- Measles virus is contained in the millions of tiny droplets produced when an infected person coughs and sneezes.
- Measles can be severe particularly in immunosuppressed individuals and young infants.
- It is also more severe in pregnancy, and increases the risk of miscarriage, stillbirth or preterm delivery
- Anyone can get measles if they have not been vaccinated or had it before.
- More common in children between one and four years old.
- Incubation period is 8-13 days, usually about 10 days
- Is infectious before the onset of the rash and lasts until 4 days after the rash appears.



Public Health
England

Protecting and improving the nation's health

PHE National Measles Guidelines

August 2017

This document provides detailed public health guidance on

- the risk assessment of suspected measles cases,
- the management of their contacts and
- a description of the laboratory testing services available to support this.

- The **incubation period** is typically around 10-12 days from exposure to onset of symptoms, but can vary from 7 to 21 days.
- The **period of infectiousness** generally starts from about 4 days before the rash and lasts up to 4 days after the onset of rash.
- The **transmission route** of measles is mostly airborne by droplet spread or direct contact with nasal or throat secretions of infected persons. Much less commonly, measles may be transmitted by articles freshly soiled with nose and throat secretions, or through airborne transmission with no known face-to-face contact .
- ☐ Measles **infectiousness** is one of the highest, with a basic reproduction number estimated around 15 – 20 (i.e. on average, there will be 15 - 20 individuals infected from a single case in a totally susceptible population).The secondary attack rate is highest among close unimmunised contacts, particularly household contacts.
- The **vaccine effectiveness** of a single dose of MMR is around 90% and approximately 95% for two doses

Symptoms

Measles starts with a 2 – 4 day illness (**‘prodromal phase’**) before the rash appears, which typically includes high **fever, coryzal symptoms, cough and conjunctivitis**. The latter is a more specific symptom that differentiates measles from many other causes of influenza-like illness. Symptoms typically peak on the first day of the rash

Fever

- **Fever** typically increases during the prodromal phase, peaks (generally $>39^{\circ}\text{C}$) around the rash onset and will gradually decrease after that.

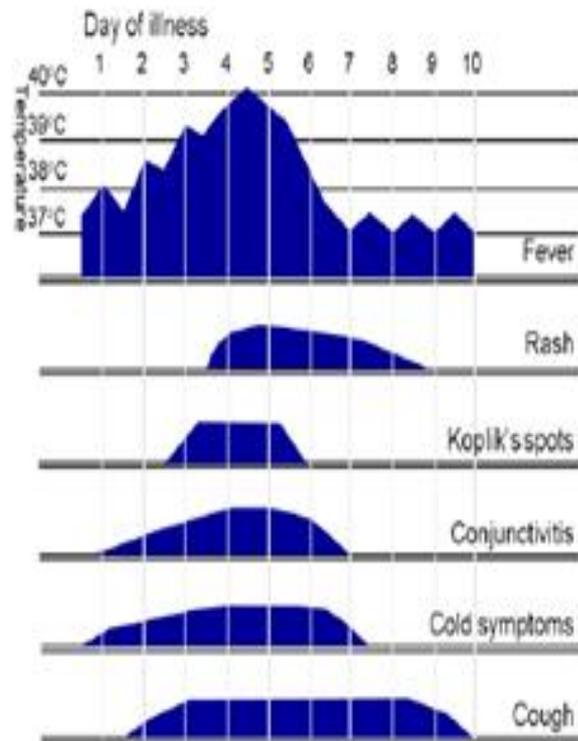
Maculopapular rash

- **The maculopapular rash** generally starts on the face and behind the ears.
- The number of lesions/spots generally increase in the first 2 – 3 days, and their distribution expands further to the face, trunk, and can sometimes be generalised.
- Lesions can become confluent, particularly on the face and the trunk. The rash is red, blotchy, maculopapular, not itchy, and generally lasts for 3 - 7 days, fading gradually.

Koplik's spots

- Koplik spots may appear around the time of the rash, sometimes one day before, and last for 2 – 3 days after the rash appears.
- These are small spots with white or bluish-white lesions, of about 2-3mm in diameter, on an erythematous base on the buccal mucosa. These can be confused with other lesions in the mouth and therefore their suspected presence is an unreliable marker for measles.

Figure 1: Typical clinical course of primary measles infection



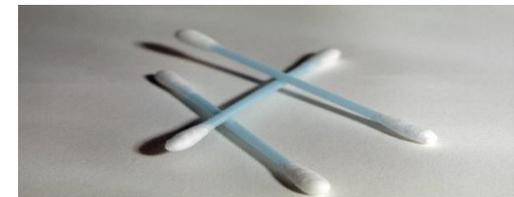
Source: WHO Manual for the laboratory diagnosis of measles and rubella infection [7]



Diagnosis



- Notifiable disease – GP must notify to Public Health England.
- Usually diagnosed by signs and symptoms
- Oral fluid is the optimal sample for measles surveillance and should be taken from all suspected cases
- Must not attend nursery/school until 5 days after the appearance of the rash.
- .



Treatment



- Use Paracetamol to relieve fever, aches and pains.
- Closing curtains and dimming lights can help reduce light sensitivity.
- Keep child cool.
- Children should drink as much as possible to avoid becoming dehydrated.
- Light diet
- If severe and risk of complications may need to be taken to hospital.

Complications of Primary measles infection

- The most frequent complications include viral pneumonitis and otitis media, as well as diarrhoea.
- Measles infection often leads to a temporary reduction in immune responses in the few weeks following infection, which may increase the risk of severe secondary bacterial and viral infections.
- Tracheobronchitis ('measles croup') and pneumonia due to secondary bacterial infection are frequent complications of measles
- Encephalitis occurs more rarely, in about 0.05% to 0.1% of measles cases

Education settings.

- Confirmed and likely cases should be excluded from nursery or school for at least four full days after onset of rash. Given the high risk of secondary infection following measles, it is advisable to return to nursery or school only after full recovery.
- Susceptible contacts of cases (e.g. unvaccinated siblings) are at high risk of developing measles and should be advised to self-exclude from school for the incubation period.
- Parents should inform nursery/school of condition. Schools should consider if they have any vulnerable children or staff.

Prevention



- MMR (measles, mumps and rubella) vaccination around 13 months of age and second dose before they start school about the age of 4 yrs.
- If a younger baby from 6 months has been exposed to measles the GP can offer the vaccine at a lower age.
- Vaccinated children are extremely unlikely to catch measles.
- If you think your child has measles keep them away from other children for 4 full days after the rash appears and inform nursery or school.