Keywords Measles/Infection/Notification/Vaccination

In this article...

- Current problems with measles outbreaks
- Prevention and identification of measles
- Notification of measles cases to health protection teams

Preventing, identifying and managing measles outbreaks

Key points

Measles is a highly contagious viral illness and it can be fatal

22,373 measles cases were reported in the European region in 2017

The measles, mumps and rubella vaccination is effective in preventing measles infection

95% uptake of the vaccination is required to achieve herd immunity

Registered medical practitioners are legally required to notify suspected measles cases to the local health protection team

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Abstract The number of cases of measles is rising across Europe and outbreaks have been reported in the UK. Nurses need to be aware of the signs and symptoms of the disease and the groups most at risk, including those who are partially vaccinated or unvaccinated. This article summarises the signs and symptoms of measles, at-risk groups and how the disease can be prevented. It explains the process of notification and provides sources of further information about this highly infectious condition.

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Over the past 12 months there has been an increase in cases of measles across England; in 2018 there had been 828 confirmed cases of measles by 13 August, with 55% occurring in over-15-year-olds (Public Health England, 2018a). The European Centre for Disease Prevention and Control (2018) warned in March that there was an ongoing risk of transmission of measles within European countries. The European Region adopted the goal of eliminating measles in the entire region by 2015 but this objective was not met. According to World Health Organization (WHO) data, 22,373 cases were reported in the region in 2017, including 35 deaths (PHE, 2018b).

With increased infection risks it is vital that health professionals promote uptake of vaccination, recognise possible cases of measles and manage them appropriately.

Measles is a highly contagious viral illness that can cause the following complications:

- Otitis media;
- Convulsions;
- Pneumonia;
- Encephalitis
- Death.

Despite having an effective vaccination programme in England we continue to see outbreaks of measles. The people at increased risk of contracting the disease are partially vaccinated or unvaccinated. The consequences of measles infection for pregnant women (who may experience miscarriage, stillbirth or preterm delivery), babies younger than one year old and immunocompromised individuals can be especially severe (PHE, 2017).

Signs and symptoms

Classical clinical presentation of measles often consists of:

- A maculopapular rash that starts on the face (Fig 1);
- Temperature of more than 39°C;
- Conjunctivitis;
- Cough and cold symptoms;
- Koplik spots (white spots in the mouth) (Fig 2).

When to consider measles

You should have a high clinical suspicion of measles if your patient:

- Is unvaccinated/partially vaccinated;
- Recently travelled to an endemic area or one with an ongoing outbreak;

- Has had contact with a person with measles;
- Belongs to/has contact with communities likely to be unvaccinated.

Infection prevention and control

Measles can be prevented by vaccination with the measles, mumps and rubella (MMR) vaccine. High uptake is vital in the control of measles, and for the prevention of outbreaks; to obtain herd immunity the WHO recommends 95% of the eligible population be vaccinated (WHO, 2017). Herd immunity occurs when a high proportion of individuals are immune to a contagious disease, especially through vaccination.

To ensure satisfactory protection, two doses of the vaccine are required; the first is usually offered at the age of 12 months and the second at three years and four months, although missed doses can be offered at any age including adulthood. Vaccination is especially recommended to individuals travelling to countries that have an ongoing measles outbreak or areas where measles is endemic (PHE, 2013).

It is vital that occupational health services ensure frontline healthcare staff have had two MMR vaccines to ensure they are protected and to prevent onwards transmission to vulnerable patients, such as those who are immunocompromised.

Control and management of measles is challenging, as the disease is highly contagious and can be transmitted by coughing and sneezing or direct face-to-face contact. People with measles are infectious from four days before their rash appears to four days after it has disappeared. There is a risk of contracting measles after only 15 minutes in a room with a contagious patient (PHE, 2017). In hospital, GP surgeries and walk-in centres it is essential to isolate any suspected case of measles. People diagnosed with measles need to be excluded from school or work for four days after the onset of a measles rash. They should avoid public places and contact with unvaccinated people, immunocompromised people and pregnant women (PHE, 2017). Good hand hygiene is also important in preventing the spread of disease.

Health protection services

Health protection is one of the three domains of public health; its functions serve to protect the public from communicable and non-communicable infectious diseases, and environmental hazards including chemical, biological, radiation and nuclear incidents. Health protection doctors and nurses are the frontline professionals who, in collaboration with other professionals employed by PHE and partner organisations, respond to routine and emerging global public health threats such as the Zika virus epidemic, ebola, measles, and pandemic flu.

Fig 1. **Maculopapular rash**

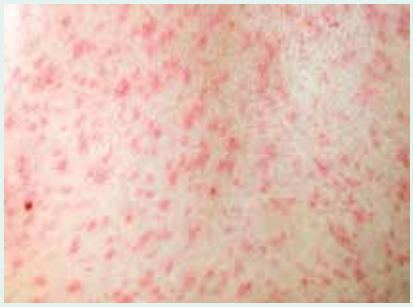

Fig 2. **Koplik spots**

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The notification process

Under the Health Protection Regulations Act (2010), registered medical practitioners are legally required to notify suspected measles cases to the local health protection team. Contact details for these teams can be found at Bit.ly/HProtTeam and the form to complete can be found at Bit.ly/NotifyDisease. Once a notification form has been received, health protection teams will undertake a risk assessment of the patient, including discussing clinical presentation, whether they have been in contact with a case of measles, any recent travel and information about their close contacts. The risk assessment includes the need to provide public health action for any vulnerable contacts.

Assessment of close contacts

As with any infectious disease, there is a short time frame in which public health action to contain measles can be effective, and notifications need to be made as soon as possible.

It is sometimes necessary to follow up measles exposure in a healthcare setting where patients have not been appropriately isolated. This involves contact tracing and identifying vulnerable contacts (such as pregnant women or immunocompromised people) and sending out warning and information letters. Local health protection teams will indicate whether this is necessary and support nurses in this process.

Box 1. **Information needed when reporting measles**

- Patient's name
- Contact details – address and telephone number
- Date of birth
- GP details
- Diagnosis
- Occupation/education details
- Recent travel
- Details of notifying practitioner

Box 2. **Useful links**

- *Measles: Symptoms, Diagnosis, Complications and Treatments* **Bit.ly/MeaslesTreatment**
- *Measles: The Green Book*, chapter 21 **Bit.ly/GBMeasles**
- *National Measles Guidelines* **Bit.ly/PHEMeasles2017**
- *Notifications of Infectious Diseases* **Bit.ly/NotifyInfection**
- World Health Organization *Measles Factsheet* **Bit.ly/WHOMeaslesFacts**

Conclusion

Measles is a highly contagious disease, which can have very serious consequences. For us to prevent further outbreaks, we need to raise public awareness and ensure vaccine uptake is encouraged at every available opportunity. As we now move through the summer we have the perfect opportunity to ensure young adults starting university or returning to university are up to date with the MMR vaccine to prevent outbreaks in these settings. **NT**

References

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