NB Medical education

KISS: Measles

BMJ 2017 BJGP 2018 BJGP 2023
NHSE risk assessment/prevention Jan 2024 UKHSA Guideline Jan 2024

Background:

- Measles is a **highly infectious virus** transmitted via respiratory droplet with an R0 number of 15-20 (i.e. 1 index case will infect 15-20 non-immunised people); it is thought that being in the same room as an infected individual for 15mins or more confers a transmission risk of >90%; **transmission** mostly by droplet spread or direct contact.
- While **mortality** is rare in the UK **complications such as pneumonitis, secondary bacterial infections and tracheobronchitis** ('measles croup') are common leading to high rates of hospital admission.
- **Rarer serious complications** include encephalitis (0.05%-0.1%) & subacute sclerosis pan encephalitis (SSPE ~0.01%). **SSPE** presents a few years after infection with progressive neuro-cognitive symptoms, often leading to coma and death.
- **Vaccination remains pivotal** - the vast majority of infected children have not been vaccinated. Vaccination with 2 doses provides excellent immunity which is thought to be lifelong.
    - To **achieve control countries need to reach vaccination rates of ~95%**. Currently in the UK (BMJ 2024;384:q113) **coverage of 2 MMR vaccines by 5 years of age is <85%**, the lowest level since 2010/11, with large regional variation.

Assessment/Diagnosis:

- **Incubation period:** typically 7-10 days (can be 7-21 days); **infectious** 4 days before and after the rash appears, with peak infectivity in the first 3 days prior to the rash developing.
- **Prodrome** - Initially fever (often >390C & usually peaks at the onset of rash), cough, coryza, conjunctivitis.
- **Rash** follows 2-4 days later - erythematous maculopapular rash, blanching; starts on the face, often behind ears, then spreads down the body to trunk and can be generalised - click here for images. generally not itchy and lasts 3-7d.
- **Koplik's spots** - white spots 2-3mm on the oral mucosa; can be confused with other oral lesions so can be unreliable as a marker for disease.
- **Differential diagnoses** (click here Annexe 1) include roseola, parvo B19 and scarlet fever;
- **Oral fluid is used for measles surveillance**. It is more acceptable and easier than blood tests, and can still be tested for IgM, IgG and measles RNA. Therefore it can: 1) reliably confirm or exclude measles, 2) shows if this is a primary or re-infection, and 3) genotype confirmed cases. Testing kits will be sent out direct from health protection teams (HPTs).

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Management: (click here for a summary **'Think Measles' pathway/poster**)

- **Risk assess, ideally remotely initially.**
- Although the combination of rash, fever (peaking at onset of rash), coryza and conjunctivitis is **almost unique to measles**, clinical features can be unreliable, **epidemiological factors may help prediction better** (vaccination history; travel from area of outbreak/high endemic levels; cultural/religious groups with low vaccine uptake; contact with case).
- If **F2F assessment needed isolate in a side room** and minimise waiting time; **PPE recommended for clinician** (gloves, apron, mask and eye protection) and ideally a **surgical mask for the patient**.
- If **transfer is required** warn the hospital/ambulance if measles is suspected.
- **Measles is a notifiable disease. Refer any suspected cases to the local HPT**. Click here to find your local HPT.
- **If a vulnerable person (aged <1 year, pregnant, immunocompromised) contact HPT immediately by phone**.
- For most patients, management is the same as for any viral infection: rest, fluids, paracetamol PRN with safety netting for complications or deterioration.
- **Children <2 years old are potentially high risk** - discuss management with the on-call paediatric team.
- Patients should avoid contact with pregnant women, children (in particular babies who will not have been vaccinated yet) and unvaccinated people.
- Children can return to school/childcare settings **4 days after the onset of rash**.
- **Non-immunised contacts** need to be excluded from school/childcare settings for the incubation period (up to 21 days).
- Public health may offer **post-exposure prophylaxis** with human normal immunoglobulin to non-immune contacts at higher risk **(this includes children <1yo)**.
- **Patient information** - click here