Editorials

Measles:

is it still a threat?

GPs see many patients presenting with viral rash illnesses and may not think of measles when making diagnostic decisions. Measles is a highly infectious viral disease easily prevented by vaccination, yet it remains an important cause of morbidity and mortality globally. In 2017, the World Health Organization (WHO) announced that measles was eliminated in the UK, as there had been a *'sustained interruption of endemic transmission for at least 36 months'*[1] and vaccine coverage for the first dose of measles, mumps, and rubella (MMR) in 5-year-olds had reached the WHO target of 95%.[2] Despite this progress, measles remains a threat to the UK population. There have been several outbreaks across Europe in countries where MMR uptake has been low historically, including Romania, France, Greece, and Italy, with 48 measles deaths reported in the European Union since 2016. The number of laboratory-confirmed cases of measles in England has increased. Between 1 January 2018 and 2 July 2018 there have been 738 measles cases in England, with several outbreaks across the country, mainly linked to importations from Europe.[3,4] As a result, Public Health England (PHE) has declared a national measles incident.[4–6]

In order to establish and maintain measles control, countries need to achieve 95% uptake with two doses of MMR vaccine in the routine childhood programme and to address any immunity gaps in older age cohorts through targeted supplementary vaccination programmes. In addition, prompt identification and notification of suspected cases and implementation of public health measures are required to control spread. GPs are on the NHS front line so it is vital that they are aware of measles guidance and case management. It has never been more timely to overview the clinical features of measles and the key actions for primary care practitioners dealing with a suspected case.

CLINICAL PRESENTATION

Measles is among the most infectious viral diseases transmitted via airborne droplet spread or direct contact with respiratory secretions from infected individuals. The incubation period is usually 10 days but can range from 7–21 days from exposure to manifestation of symptoms.[7] Measles usually starts with a 2–4-day prodromal illness that typically includes coryzal symptoms, cough and conjunctivitis, and a high fever ≥39°C (fever typically increases during prodromal phase and peaks around rash onset), before the rash appears.[7] The rash typically begins on the face and behind the ears before spreading further, lasting 3–7 days.[7] Koplik spots, small white lesions on the buccal mucosa, may appear around the time of the rash but are an unreliable marker for measles. Patients may not have all the typical symptoms at the time of presentation and all cases of 'suspected' measles, or where measles is part of a differential diagnosis, should be notified.

Cases are infectious from 4 days before until 4 days after rash onset.[7] Though measles is often a self-limiting condition, some potentially serious complications can occur, particularly in immunocompromised individuals, infants <1 year, and pregnant women. Complications include viral pneumonitis, otitis media, and encephalitis.[7]

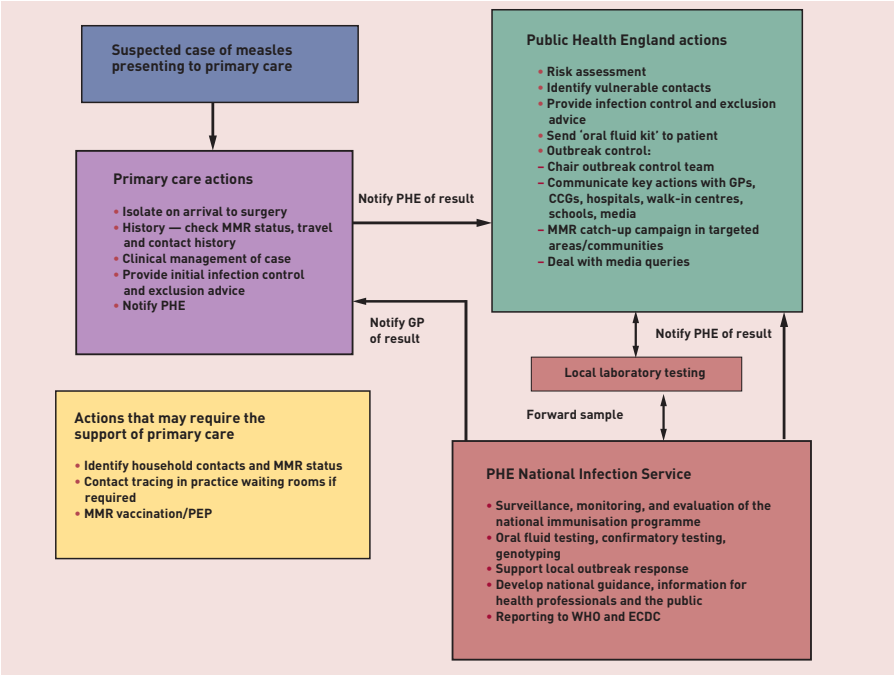

Figure 1. Primary care management flowchart for a suspected measles case showing the key actions taken by GPs in conjunction with PHE. CCGs = clinical commissioning groups. ECDC = European Centre for Disease Prevention and Control.[4] MMR = measles, mumps, and rubella vaccine. PEP = post-exposure prophylaxis. PHE = Public Health England. WHO = World Health Organization.

MANAGEMENT OF SUSPECTED MEASLES

Role of primary care

Clinical suspicion and isolation of patients. The diagnosis of measles can be easily missed because of its similar presentation to other common febrile illnesses associated with a rash. Clinicians should have a higher suspicion of measles in patients who:

- are unvaccinated/partially vaccinated;
- belong to high-risk communities with suboptimal MMR uptake (such as travelling communities, new migrants, Steiner communities, and Charedi Orthodox Jewish communities);[7] or
- have recently travelled to measles-endemic countries or areas where there are outbreaks, such as Romania and Italy, and in Asia and Africa.

Measles affects all ages and a significant proportion of cases are in adults, with 15–25-year-olds being particularly at risk in the UK.[3,6] Due to the highly contagious nature of measles, patients presenting with a febrile illness and rash should be advised to inform the healthcare facility prior to attendance to ensure appropriate isolation; devising a formal 'isolation protocol' in general practices would be beneficial.

Notification to PHE. Local Health Protection Teams (HPTs) at PHE (https://www.gov.uk/health-protection-team) should be notified of all suspected cases of measles as soon as is reasonably practicable and without waiting for laboratory confirmation to facilitate early

implementation of control measures.

Confirmation of diagnosis. Though a clinical diagnosis is all that is required to notify a case, laboratory testing of all suspected measles cases is essential for surveillance purposes. 'Oral fluid kits' are dispatched to patients by the local HPT and are considered the gold standard for confirming and excluding cases.[7] These samples are tested at the national reference laboratory in Colindale, London. Additional samples such as serology for IgM and IgG can be taken in parallel for diagnostic purposes but should not replace the oral fluid kit.[7] Where available and appropriate, throat swabs can also be sent for urgent local PCR testing, to inform public health actions.

Infection control advice. Contact with the GP gives an important opportunity to provide early infection control advice on exclusion from public settings, including nursery, school, and work, until 4 days after rash onset and avoidance of vulnerable contacts.[7] Where referral to hospital is appropriate, the hospital should be informed prior to transfer to ensure isolation.

Clinical management. Measles is usually self-limiting, with coryzal symptoms resolving in a week. Advice to patients should include rest, fluids, and analgesia for symptomatic pain relief. Patients should seek urgent medical advice if symptoms of shortness of breath, uncontrolled fever, or fits and/or change in consciousness occur, indicating complications. Follow-up after a week is suggested, with the emphasis on ensuring that vaccinations are up to date.[8]

Public health actions coordinated by PHE

The local HPT conducts a risk assessment on notified cases and provides appropriate advice (Figure 1). PHE works alongside GPs to prevent further spread in the following ways:

Information gathering. PHE obtains a detailed history and MMR status of the case and contacts.

Identification of contacts. PHE guidance advises that contact tracing be prioritised for vulnerable individuals, specifically those who are immunosuppressed, pregnant, or infants. Though 15 minutes of face-to-face contact is usually required, transmission has occurred through more casual contact, particularly in immunosuppressed individuals.[7] Contact tracing should therefore be performed even if the level of contact cannot be ascertained, such as in waiting areas.

Subsequent actions depend on the individual situation, but may include providing 'warn and inform' letters and post-exposure prophylaxis (PEP) for exposed contacts. 'Warn and inform' letters provide information on symptom detection, exclusion advice, and MMR vaccination. PEP with MMR vaccination can be given, ideally within 72 hours of exposure and immunoglobulin (HNIG or IVIG) up to 6 days post-exposure.[9] The need for this is assessed by PHE based on the exposure risk, susceptibility to measles, and time from exposure. Early notification by GPs is therefore essential to ensure that the time window for PEP is not missed.

MMR vaccination. Measles is easily preventable: two doses of MMR vaccine are given at 12 months and 3 years 4 months of age, and are around 95% effective.[6,7]

Incompletely immunised patients aged >3 years and 4 months, including adults of all ages, who do not have two recorded doses of MMR vaccine should be immunised opportunistically. An item of service fee can be claimed manually via the Calculating Quality Reporting Service (CQRS) MMR programme for each dose of MMR administered to patients aged ≥16 years, including those born pre-1970 who have no history of measles or MMR vaccination.

MMR vaccine can be given from 6 months of age before travel to a high-risk country. Children who receive a dose before their first birthday still require two further doses at the recommended times. New entrants from abroad and newly registered patients, women following childbirth, and all health professionals and reception staff specifically should have their MMR immunisation status checked.[10]

CONCLUSION

Recent outbreaks of measles have highlighted its ongoing threat. GPs are the likely first point of clinical contact for possible cases. Prompt suspicion of diagnosis and subsequent actions are critical in preventing further spread and protecting vulnerable contacts. As the main providers of MMR vaccination, which is the best way of preventing outbreaks occurring, GPs have a vital role in partnership with PHE in supporting the control of measles in the UK.

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