Inform'ACTION n°23
MAY 2006

Prevent Measles

Example of Fact sheet for health workers in Fiji

This example of a practical fact sheet can be adapted in other Pacific Island countries and territories to help raise awareness and prevent measles outbreaks.

What is measles?

- Measles is a disease caused by a virus (Paromyxovirus family).
- Symptoms usually start 10–12 days after infection with the virus.
- The initial symptoms are fever, cough, coryza (runny nose) and conjunctivitis.
- The characteristic rash (raised red blotches – maculopapular) usually appears 14 days after infection or 2–4 days after onset of fever; it spreads from the head to the trunk and then the limbs over 3–4 days.
- Patients are infectious from 5 days before the rash appears until 4 days after the rash appears.
- After recovery there is life-long immunity.
- The risk of developing complications varies, being much higher in developing countries, especially in undernourished cases.
- Mortality rates can be as high as 2–15% in developing countries.
- About 1 in every 5–10 cases develops an ear infection (otitis media), diarrhoea or pneumonia.
- About 1 in 1000 cases gets brain inflammation (encephalitis). Those cases that do not die are often left with permanent brain damage.

Transmission or spread of measles

- Measles only affects humans.
- It is one of the most infectious viruses and can persist in the environment for up to two hours.
- Spread is from person to person by aerosols (airborne) or direct contact with nasopharyngeal secretions or items contaminated by infectious material.
- Before immunisation began in 1963, about 99% of children would get measles in childhood.
- On average, 1 case infects 15–20 other cases in a population with no immunity.

Susceptible persons

- Any person (infant, child or adult, including health-care workers) who has never had measles (disease) and also has not received two doses of a measles-containing vaccine.

WHO case definition

- **Any person in whom a clinician suspects measles infection, or any person with fever and generalised maculopapular rash with cough or coryza or conjunctivitis.**

Triage measures (Fiji National Health System)

- All staff responsible for triaging of patients in the clinical setting must be aware of the need to isolate all patients who present with fever and rash. This applies to all clinics: MCH, well baby clinics, and outpatient and emergency departments at all hospitals, health centres and other service facilities, including general practice settings. These recommended measures must be immediately enforced in all divisions – Western,

Northern and Central/Eastern – and all health service facilities, including general practice clinics.

- All patients who present to the clinic or hospital with a fever and rash MUST be isolated under airborne and droplet precautions immediately (see below). If such a person is isolated, inform the medical officer in charge of the clinic/health facility, infection control professional (if one exists) and health sister in charge immediately and institute measures promptly. In addition, all such cases of acute fever and rash must be recorded and reported to the local public health unit, subdivisional medical officer and subdivisional health sister, and/or zone nurse responsible. (N.B. The medical or nurse practitioner seeing the cases should initiate the filling-out of the acute fever and rash investigation form.) The public health team shall initiate further immediate case surveillance and contact follow-up, including other public health measures at family and community level. The SDMO will inform the divisional community health managers, EpiNet teams and Ministry of Health directors and CEOs.
- Officers in charge of health-care facilities (public or private) should make sure that all health-care workers in that setting are aware of measles cases or outbreaks in Fiji. In addition, they need to ensure that all are protected and also know the actions they would take if they noticed a patient (child) with fever and rash. For this they need to be provided with a fact sheet and proper information on referral.
- Patients who have a fever and rash must not enter common waiting areas of clinics or hospitals. The nurse discharging triage responsibilities must be alert and periodically cross-check for fever and rash patients in the waiting area or room, and also periodically announce that if there is any case of fever and rash to immediately report to him or her. Where possible, place signs inside and outside these areas to remind such patients to present to triage immediately.
- Provide a mask to all patients who present with a fever and rash (note that this may be difficult with infants, so they may be exempted) and isolate them in a single room away from other patients. If this is not possible in the clinic set-up, then alternative measures must be in place.
- Perhaps as a precautionary measure separate all fever presentations in the clinic area using temporary barriers or separators.
- Consider home-based care for patients with measles, especially those who have mild cases of fever and rash. Zone nurse to follow up at home and advise restricting visitors, thus reducing contact with at-risk individuals, and no school or work for at least 4 days after the rash appears.
- School head teachers and principals and officers in charge of child-care centres should be informed that all fever and rash presentations must be referred to a health-care facility immediately and the child should be separated from the rest of the pupils while waiting to refer. If possible, the officers, with the assistance of a zone nurse, should review every child's immunisation records to identify those not immunised against measles and refer them to the nearest medical facility, medical officer or their family doctor for immunisation.

Infection control measures

Measles requires implementation of airborne and droplet precautions.

Precautions

- Minimise staff contact with infected patients; only immune staff are to care for measles patients.
- Patients should have a single room with own bathroom, door closed, window open where possible.
- Cohort patients with the same infection (only rash and fever cases cared for in common or shared isolation point or room).

- Patients must be kept in isolation until 4 days after the appearance of the rash.
- Provide 1 metre of separation between patients in ward accommodation; better still if nursed in single rooms.
- All staff and visitors must wear surgical masks when entering the room of a measles patient.
- Staff providing clinical care to these patients must also wear gloves and an apron, as surfaces may be contaminated with infectious droplets.
- Gloves and apron must be removed on leaving the patient's room.
- If the patient is moved between departments, they must wear a surgical mask to contain droplets.
- If the patient is coughing or sneezing, staff should wear eye protection to prevent conjunctival transmission.
- Environmental cleaning of the patient's room should be performed daily, including cleaning of all surfaces in the room.
- All waste should be considered clinical waste and handled appropriately.
- Patients who are coughing or sneezing should be taught to use tissues to contain droplets and how to wash their hands effectively.
- Hand hygiene measures must be reinforced amongst all levels of health-care staff, including cleaning and food services staff.
- If a patient is discharged during the infectious period, the room should not be used for at least 2 hours if possible. Susceptible persons should not enter the room during this period.
- During in-hospital nursing or at-home nursing, visitors should be strictly limited or restricted to parents, guardians and health-care workers who are protected. Other visitors should be restricted for at least 4 days after the rash appears.

Measles vaccination measures

- Measles vaccination status of all children and young adults who attend any health facility for ANY reason should be checked and vaccination offered unless contraindicated. This should be implemented at all immunisation clinics, doctors' rooms, public and private clinics, health centres and hospital emergency and outpatient departments at all private and public hospitals in Fiji.
- Identify and vaccinate all susceptible persons in the health-care setting, including patients and health-care workers.
- Offer vaccination to all susceptible household contacts who have not been immunised or who are unaware of their immunisation status.

Note:

- A single dose of vaccine, given in ideal conditions, protects about 85% of children if given at the age of 9 months; about 90% at the age of 12 months. MOH Fiji immunisation schedule has measles/rubella vaccine at 12 months and then at school entry.
- Vaccine efficacy is reduced if the vaccine is damaged by heat or light.
- A second dose of vaccine is recommended for all children to protect those who were not protected by the first.
- Two doses will protect about 99% of children.
- Measles vaccine causes a mild measles-like illness (rash and fever) in about 5% of cases.
- More serious reactions are rare and do not usually cause long-term problems.
- May cause encephalitis in less than 1 per million doses – not certain.

Protection of health-care workers

- Ensure staff caring for infected patients have been immunised or have had measles previously. This can be achieved through verbal medical screening for history of either infection or previous immunisation. Health sisters in various clinic settings should be able to establish this relatively easily and inform the medical officer in charge to act on the findings.
- Susceptible health-care workers may include medical, nursing or allied health staff, food handlers, cleaners, waste handlers, laboratory staff, and nursing and medical students.
- Pregnant staff should be restricted from caring for patients with known or suspected measles, particularly in the absence of susceptibility testing.
- Health-care workers with measles symptoms should be precluded from work and not permitted to return until 4 days after the rash appears. Susceptible health-care workers exposed to measles should be offered a dose of measles vaccine within 72 hours of exposure, or a dose of immunoglobulin (if available locally) if they were exposed between 3 and 7 days earlier. Any susceptible (no previous infection or immunisation for measles) health-care worker who has been exposed to a measles patient and has not been given therapy should be removed from the workplace until 14 days after their last exposure or, if they become infected, 4 days after the rash appears.

Clinical management

Measles kills more children than all the vaccine-preventable diseases combined, hence the need for prompt identification, isolation and treatment of cases to reduce the risk of unfavourable outcomes.

- Ensure good nutritional support to all cases. Mothers to continue breast-feeding infants and give weaning foods and fluids at frequent intervals.
- Control fever with antipyretics (preferably paracetamol and a cool environment).
- Hydrate or replace fluid losses from diarrhoea or excessive sweating.
- Treat respiratory complications – if secondary bacterial infections are suspected, antibiotics are indicated.
- Consider giving vitamin A to any suspected measles cases (whether with measles now or in the last three months). Dosage: infants < 12 months = 100,000 U; those > 12 months of age = 200,000 units.
- If there are signs of eye and mouth complications or other complications, give vitamin A, eye ointment (tetracycline) for eye complications and gentian violet for mouth complications, and follow up daily or every second day.
- If severe complicated measles, with eye signs such as clouding of the cornea, deep extensive mouth ulcers or any general danger sign, give vitamin A and the first dose of an appropriate antibiotic, apply tetracycline ointment and refer to hospital for admission.

Measles cases need to be recognised and managed as a matter of urgency. Acute fever and rash detection and investigation forms need to be filled out and SDMO and divisional CMO community health need to be urgently informed.

Compiled by
Dr Narendra Singh
Communicable Disease Surveillance Specialist, SPC
and
Mrs Peta-Anne Zimmerman
Infection Control Specialist Consultant, SPC

Extracts from:
World Health Organization measles publications, including fact sheet from WHO Western Pacific Region Public Information Unit, tel: (63 2) 528 9991.
Guidelines for the control of measles outbreaks in Australia: endorsed July 2000 by the Communicable Diseases Network Australia and New Zealand. 2000. Commonwealth Department of Health and Aged Care, Canberra.
Infection control guidelines for the prevention of transmission of infectious diseases in the health care setting. 2004. Department of Health and Ageing, Canberra.