



# PHYSICIAN FACT SHEET

## MEASLES (Rubeola)

Maricopa County Department of Public Health

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### Clinical Description

Measles is an acute illness caused by the measles virus, a member of the genus *Morbillivirus* of the family Paramyxoviridae. **Measles is highly contagious and can transmit rapidly person to person via the airborne route, especially in communities with lower vaccination rates or in healthcare settings where immunosuppression can play a role**

Illness begins with a prodrome of high fever (103-105°F), malaise and “the 3 Cs”: cough, coryza and/or conjunctivitis. A maculopapular rash follows the prodrome in 3-5 days, starting at the hairline and spreading slowly downward and outward, reaching hands and feet. The rash generally lasts 5-7 days and recedes in the same order, fading first from the face. Other symptoms may include anorexia, diarrhea (especially in infants), and generalized lymphadenopathy. In immunocompromised persons, disease may be severe and prolonged without typical rash. Complications include otitis media, pneumonia, encephalitis, blindness, premature birth or low-birth-weight, and death

**An unvaccinated patient with febrile rash illness as described above and with recent international travel (measles is not endemic in the USA) or occurring in the context of a measles outbreak in the community, should be managed as a highly suspect measles case. Place in airborne isolation and collect laboratory specimens as described below**

### Incubation Period

Usually 8-12 days from exposure to onset of prodrome (range of 7-21 days). Average time from exposure to rash onset is 14 days

### Transmission/ Infection Control

Cases are highly contagious. Transmission is airborne, by respiratory droplets or by contact with secretions or contaminated surfaces. Infectious droplets remain active and contagious for up to 2 hours after the person has left an area. **Place in airborne isolation, if not available place in private room with door closed**

### Contagious Period

From 1 day before onset of prodrome (usually about 4 days prior to rash onset) through 4 days after rash onset

### Diagnosis

Clinical evidence of measles is not sufficient to diagnose a case. Laboratory confirmation is essential for the identification and control of outbreaks and sporadic cases of measles. Testing is indicated for all suspected cases, especially those most likely to have measles (unvaccinated, recent history of travel to endemic areas, contact to a confirmed measles case, etc.). Measles-specific IgM antibody and measles RNA detection by real-time RT-PCR are the most common methods for confirmation of measles infection. Collect nasopharyngeal swab and urine to be sent to the Arizona State Public Health Laboratory, arranged by contacting Maricopa County Department of Public Health (MCDPH), contact information below. Collect additional specimens including serum for testing at a commercial or hospital lab if needed

#### ***Virus isolation or positive RT-PCR***

#### **Nasopharyngeal (NP) swab is the preferred sample for virus detection**

Use a Dacron swab to collect NP swab ASAP after rash onset and place in viral transport media (refrigerate), ideally within 3 days of rash onset. (NP swabs collected up to 7-10 days post rash-onset may be successful in identifying measles virus) Collect urine ≤ 14 days after rash onset (refrigerate). A recent Measles, Mumps, Rubella (MMR) vaccination may cause **false positive** PCR results

## ***Serologic Testing***

### **Use of IgM antibody for confirmation of measles:**

Collect acute serum ≤ 7 days after rash onset. Ideal time is 3-7 days after rash onset (no sooner than 72 hours after rash onset, as false negative results have occurred). Measles IgM will persist up to 1 month following infection. IgM antibody testing is less reliable for previously vaccinated individuals, and positive results should be confirmed at the Centers for Disease Control via Arizona State Public Health Laboratory. Arranged by contacting MCDPH. A recent MMR vaccination may cause **false positive** IgM results

### **Use of IgG antibody for confirmation of measles in unvaccinated people:**

If the acute serum was IgG negative, a second serum can be collected at ≥ 10 days after the acute sample. If this serum is IgG negative, measles can be ruled out. If the acute serum was IgG positive, request lab to perform IgM testing on the specimen

Treatment Supportive care, including adequate hydration, and consider Vitamin A supplementation for all children. Patients may experience photosensitivity. Advise resting eyes and avoiding bright lights, including TV and computer screens, as well as sunlight

Prophylaxis **Determine immune status of all those exposed**  
Adults born before 1957 are generally presumed to be immune due to prior measles infection (except in outbreak situations). Complete vaccination includes 2 doses of live virus vaccine (MMR), separated by at least 28 days, with the first dose given at ≥ 12 month of age. Serological evidence of immunity is demonstrated by a positive measles IgG titer

### **People exposed to measles who cannot demonstrate immunity as above should be offered post-exposure prophylaxis (PEP)**

Which may provide some protection or may modify the clinical course of the illness. Non-immune healthcare workers should be excluded from duty from day 5 after first exposure thru day 21 after last exposure, regardless of post-exposure immunoprophylaxis

### **If susceptible, vaccinate all exposed, 6 months of age and older, with MMR vaccine within 72 hours of exposure**

For infants aged 6-11 months, MMR vaccine can be given in place of IG if administered within 72 hours of exposure. Infants vaccinated before their first birthday must be revaccinated at 12-15 mos of age and again when they are 4-6 years of age)

### **If unable to prophylax with MMR vaccine (see vaccine insert sheet for complete details) give IG within 6 days of exposure**

The recommended dose is 0.25 mL/kg body weight, with a maximum of 15 mL intramuscularly (IM). The recommended dose of IG for immunocompromised persons is 0.5mL/kg of body weight (maximum 15 mL) IM. Pregnant women without evidence of measles immunity and severely immunocompromised individuals should be given IG intravenously (IGIV), the recommended dose is 400 mg/kg

Reports Required **Immediate telephone reports of cases and suspect cases are required within 24 hours**  
**Contact: Maricopa County Department of Public Health, Communicable Disease Epidemiology- 602-506-6767 during normal business hours or 602-747-7111 for afterhours, weekends and holidays**

## **Practitioner Resources**

<http://www.maricopa.gov/publichealth/Programs/Measles/default.aspx>

<http://www.azdhs.gov/measles/>

[http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6204a1.htm?s\\_cid=rr6204a1\\_e](http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6204a1.htm?s_cid=rr6204a1_e)

<http://www.cdc.gov/vaccines/pubs/pinkbook/meas.html>