

# MEASLES

## TRANSMISSION

### Source:

Humans only

### Transmission:

Airborne: by droplet spread

Direct contact: with nasal or throat secretion

Fomites: article freshly soiled with nasal or throat secretion

### Attack rate:

90%

Household = 95%

### Incubation Period

8-12 (7-21) days

### Prodrome: 2-4 days

Fever (103°F-105°F), cough, coryza, conjunctivitis, Koplik spots

### Eruptive phase: ~1 week

Rash: begins on face and neck, maculopapular, becomes confluent

### Communicability:

-4 days through 4 days after rash onset

### Exclusions:

Children in school: rash onset + 4 days

HCW: rash onset + 4 days

Exposed HCW: Exp + 5 days to + 21 days

### Complication:

Common: diarrhea, otitis media, pneumonia, bronchitis  
Less Common: encephalitis, seizures, death

IgM detectable from rash to 1-2 months

IgG detectable 7-10 days after rash and stays for the rest of life

## DIAGNOSIS

### Clinical Case Definition

Illness characterized by:

- generalized maculopapular rash lasting  $\geq 3$  days; and
- temperature  $\geq 101^\circ\text{F}$  ( $38.3^\circ\text{C}$ ); and
- cough, coryza, or conjunctivitis

### Laboratory Criteria for Diagnosis

- Isolation of measles virus from a clinical specimen; or
- detection of measles virus-specific nucleic acid using PCR; or
- IgG seroconversion or a significant rise in measles IgG antibody; or
- a positive serologic test for measles IgM antibody.

Confirmed: Meets clinical case definition and laboratory criteria **OR** meets clinical case definition and is epidemiologically linked to a laboratory-confirmed case.

Probable: Meets clinical case definition and has no measles-specific laboratory testing or epidemiologic linkage to a confirmed case.

International Importation: Onset of rash within 21 days of entering the US and no link to local transmission.

Indigenous Case: Case that cannot proven to be imported.

Out-of-State Importation: Out-of-state for exposure period or has an epidemiologic linkage to an out-of-state case.

Serologic testing is not a good diagnostic tool among immunized persons:

- Detectable IgG expected.
- IgM may last long after immunization, or may be transient/not detected in true cases.

## TREATMENT, PROPHYLAXIS

### Treatment:

- Supportive
- Vitamin A orally (200,000 IU for children  $\geq 1$  year of age, 100,000 IU for children 6-11 months old, and 50,000 IU for infants  $< 6$  months old)

### Prophylaxis of the exposed:

- Vaccination within 72 hours of exposure
- Immunoglobulin within 6 days of exposure

### Indications:

- Household contacts
- Healthcare facility contacts
- Institutional contacts (i.e. child care centers and schools)

### Routine Childhood Vaccine

2 doses of live attenuated vaccine (at least 1 month apart)

### Recommended age:

- 1<sup>st</sup> dose at 12-15 months
- 2<sup>nd</sup> dose at 4-6 years.

## Airborne precautions

## CONTROL

- Report to OPH within 24 hours.
- Report to Immunization Program
- Children should be kept out of school for 4 days after rash appears
- Strict segregation of children if measles occurs in an institution
- Asses vaccination status and vaccinate exposed, susceptible individuals
- Institutional outbreak: vaccine or immunoglobulin to new admissions.
- Healthcare facility: HCWs in contact with cases should be immunized.

Live vaccine within 72 hours, Immunoglobulin if live vaccine is Contraindicated:

- Children  $< 1$ -year age
- Pregnant women
- Immunocompromised persons

### Measles no longer in the USA, cases linked to importation

#### Confirm reports of cases ASAP:

- $< 5$  days post rash onset: PCR
- 5-14 days post rash onset: PCR and serology
- $> 14$  days post rash onset: serology