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Indiana State Department of Health
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MEASLES DIAGNOSIS AND RECOMMENDED CONTROL PROCEDURES

Prodrome:

Typically starts 3-4 days (range 1-7) days before rash onset. Fever- reaching at least 101°F by day of rash onset.

- Conjunctivitis - photophobia, watery eyes, and/or redness (evert lower eyelids to see palpebral conjunctivae).
- Cough
- Coryza
- Koplik's spots - bluish-white dots on a reddish base on buccal mucosa beside molars (sometimes over whole soft palate). Present 2 days before to 2 days after rash onset.
- Cases usually very sick from 2 days before to at least 2 days after rash onset.

Rash:

- Distribution and progression - starts at hairline and extends to face and neck on day 1, spreads to trunk on day 2, and extremities on day 3. Usually spares palms and soles. Starts to fade on face on day 4, then on trunk and extremities. Usually lasts 4-7 days.
- Character - morbilliform, erythematous, maculopapular, becoming confluent in blotches first on face and then on trunk but not on extremities. Bright red, often slightly raised and "velvety" to touch on day 1-2. Begins to fade on day 3-4, may turn brownish.

Chronology Diagram

Exposure	**Fever, cough, conjunctivitis, coryza onset**	**Rash onset**	**Rash fades**
11 to17 days prior to rash onset	2 to 4 days prior to rash onset	Day 0	4 to7 days after rash onset

Minimal clinical criteria:

- Generalized rash lasting 3 days.
- Temperature of 101° F (38.3°C) --skin should feel "hot" to touch if temperature not measured.
- At least one of the following: cough, coryza, or conjunctivitis.
- **Frequency:** The vast majority of cases are classical and meet the minimum clinical criteria.

Differential Diagnosis: Includes, but is not limited to, rubella, fifth disease (parvovirus B19), enterovirus or adenovirus infection, mononucleosis, scarlet fever, roseola, Kawasaki's disease, and drug reaction.

Incubation Period: About 10 days, but may be 7-18 days from exposure to onset of fever, usually about 14 days until rash appears.

Period of Communicability: From one day before beginning of the prodromal period (usually about 4 days before rash onset) to 4 days after rash appearance.

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SEROLOGIC DIAGNOSIS

Measles IgM antibody: Best time to obtain blood specimen is 3-14 days after rash onset. Antibodies may be present at rash onset and last up to 6 weeks. Presence of measles IgM antibody in any one serum specimen confirms diagnosis. Caution: False-positive results do occur in some laboratories using commercial test kits. **Specimens should be sent to the Indiana State Health Dept. Laboratory.**

Measles IgG: Obtain acute blood specimen within 7 days after rash onset and convalescent specimen 10-14 days later. Significant rise in antibody concentration (check for the testing laboratory's definition of a significant rise) between the acute and convalescent specimens confirms the diagnosis.

Note: Recent measles immunization produces essentially the same IgM and IgG antibody responses as does natural measles infection.

ACTION

1. **REMEMBER - Report all suspected cases of measles to your local health department immediately.**

2. Isolate suspected cases - health care workers with known immunity to measles should be the only staff who have contact with patients suspected of having measles.

3. Susceptible persons (patients or staff) should not enter a room where a person with measles was examined, for 2 hours following their departure.

4. If you have questions please call the Indiana State Department of Health at 1-800-701-0704 during normal working hours (8:15am- 4:45pm) or 317-233-1325 after working hours or on weekends.

Updated April, 2008