



INYO COUNTY PUBLIC HEALTH BRIEF

A Division of Health & Human Services
Richard O. Johnson, M.D., MPH
Public Health Officer, Inyo County
760-914-0496
drrickjohn@gmail.com



Public Health
Prevent. Promote. Protect.

HEALTH ADVISORY – MAY 2011

Eleven Measles Cases in California in 2011 Look for Signs of this Highly Contagious Disease

Since January 2011, eleven cases of measles have been reported in California and a nationwide increase in the numbers of reported measles cases has also been noted this year. As in recent years, nearly all of the cases are from Europe, or are known to have traveled recently to Europe or Asia, or to have been in contact with international travelers (including via transit through U.S. international airports); some of the cases have been intentionally unvaccinated children. With the imminent beginning of the summer travel season, and an expected influx of tourists from Europe and Asia to the Eastern Sierra, this information is timely.

The last large outbreak of measles in the U.S. occurred during 1989-1991, with 17,000 cases of measles and 70 deaths in California. Efforts to increase immunization rates in the 1990s were successful and endemic transmission of measles in the U.S. was eliminated in 2000. In contrast, measles is now widespread in Europe because immunization rates have declined below the 90-95% rate needed to interrupt transmission. There are currently measles outbreaks in many European countries, including a large outbreak in France. Over 9,000 measles cases were reported in France between October 1, 2010 and the end of March 2011; most cases have been teenagers. In 2010, there were two deaths (one from encephalitis and one from pneumonia) and eight patients with neurological complications. In 2011, there have been two deaths due to pneumonia and 13 cases with neurological complications (12 cases of encephalitis and one case of myelitis and Guillain-Barre syndrome). Measles is currently circulating in most regions of the world outside of North and South America.

Immunize them before they go

Unvaccinated Californians who are traveling to countries where measles is circulating should receive MMR vaccine before they go. Infants traveling to these countries can be vaccinated as young as six months of age (though they should also have the two standard doses of MMR after their first birthday).

Remember the diagnosis

The recent cases in California highlight the need for healthcare professionals to be vigilant about measles. ***Your expert eye and diagnostic skills can make a difference in stopping the spread of measles in our community:***

- Consider measles in patients of any age who have ***a fever AND a rash***. Fever can spike as high as 105°F. Measles rashes are red, blotchy and maculopapular and typically start on the hairline and face and then spread downwards to the rest of the body.
- Obtain a thorough history on such patients, including:
 - travel outside of North or South America or contact with international travelers (including transit through an international airport) in the prior three weeks; and

- prior immunization for measles.
- If you suspect your patient has measles, isolate (see next section) the patient immediately and alert us as soon as possible. The risk of measles transmission to others can be reduced if control measures are implemented.
- Collect specimens for measles testing:
 - Draw 1-2 ml blood in a red-top tube; spin down serum if possible. NOTE: capillary blood (approximately 3 capillary tubes to yield 100 µl of serum) may be collected in situations where venipuncture is not preferred, such as for children <1 year of age.
 - Obtain a throat or nasopharyngeal swab; use a viral culturette and place into viral transport media.
 - Collect 10-40 ml of urine in a sterile 50 ml centrifuge tube or urine specimen container.
 - Please arrange for measles testing by contacting Tamara Cohn at 760-873-7868, who will make arrangements with the San Bernardino Public Health Laboratory for testing.

If measles is suspected:

1. Mask suspect measles patients immediately. If a surgical mask cannot be tolerated, other practical means of source containment should be implemented (e.g., place a blanket loosely over the heads of infants and young children suspected to have measles when they are in the waiting room or other common areas).
2. Do not allow suspect measles patients to remain in the waiting area or other common areas; place patient in a private room with the door closed. For additional infection control information, please see the CDC “Guideline for Isolation Precautions” at: <http://www.cdc.gov/hicpac/2007IP/2007isolationPrecautions.html>
3. If possible, allow only healthcare personnel with documentation of 2 doses of live measles vaccine or laboratory evidence of immunity (measles IgG positive) to enter the patient’s room.
4. Regardless of immune status, all healthcare personnel entering the patient room should use respiratory protection at least as effective as an N95 respirator.
5. If possible, do not allow susceptible visitors in the patient room.
6. Do not use the examination room for at least two hours after the possibly infectious patient leaves.
7. If possible, schedule suspect measles patients at the end of the day.
8. Notify any location where the patient is being referred for additional clinical evaluation or laboratory testing about the patient’s suspect measles status and do not refer suspect measles patients to other locations unless appropriate infection control measures can be implemented at those locations.
9. Instruct suspect measles patients and exposed persons to inform all healthcare providers of the possibility of measles prior to entering a healthcare facility so that appropriate infection control precautions can be implemented.
10. Make note of the staff and other patients who were in the area during the time the suspect measles patient was in the facility and for two hours after they left. If measles is confirmed in the suspect case, exposed people will need to be assessed for measles immunity.

Quick Facts (you learned in med or nursing school and promptly forgot after the test!)

Measles infectious period

From four days before rash onset through four days after rash onset (day of rash onset is day 0).

Measles exposure

Sharing the same airspace with a person infectious with measles (during the 4 days prior through the 4 days after their rash onset), e.g., same classroom, home, clinic waiting room, airplane etc., or were in these areas up to 2 hours after the infectious person was present.

No minimum time period has been established for exposure, but it is presumed that longer exposures are more likely to result in measles transmission than brief, transient exposures.

Measles incubation period

Prodromal symptoms typically begin 8-12 days after exposure (day 0) and rash onset is typically 14 days (range 7-21 days) after exposure.

Measles clinical case definition

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

The course of measles infection

Measles typically begins with a mild to moderate fever accompanied by cough, coryza, and conjunctivitis. Two to three days later, Koplik's spots, a characteristic sign of measles, may appear. At this time the fever spikes, often as high as $104\text{-}105^\circ\text{F}$. At the same time, a red blotchy maculopapular rash appears, usually first on the face, along the hairline and behind the ears.

This slightly itchy rash rapidly spreads downward to the chest and back and, finally, to the thighs and feet. In approximately one week, the rash fades in the same sequence that appeared.

Measles symptoms

- Fever
- Dry cough
- Runny nose
- Inflamed eyes (conjunctivitis)
- Sensitivity to light
- Koplik's spots (see illustration and description on next page)
- An erythematous maculopapular rash - large, flat blotches that often flow into one another

Additional note for healthcare facilities, including clinics:

The cost of a recent measles outbreak in Tucson was almost \$800,000! Furloughs for health care personnel accounted for over half of that cost.

Lessons learned:

1. Measles immunity records for all health care personnel must be rapidly retrievable.
2. Consider measles as a diagnosis, especially among patients presenting with fever, rash, and a recent history of international travel or contact with someone with a clinically consistent rash illness
3. Institute immediate airborne isolation of patients with suspected and confirmed measles.

