



February 5, 2015

To: Jefferson County Health Care Providers

From: Tom Locke, MD, MPH, Jefferson County Health Officer

Re: **Measles Case Diagnosed in Port Angeles**

**Situation Report:** Measles has been diagnosed in a 52 y/o male admitted to Olympic Medical Center on Feb. 1, 2015. Date of rash onset was 1/30/15 and the period of communicability began on 1/26/15 and extended to the time of hospitalization. Measles is typically contagious 4 days before and 4 days after rash onset. Clallam County Health and Human Services, Olympic Medical Center, and the WA State Dept. of Health are actively involved in identifying exposed contacts, evaluating their immune status, and instituting control measures.

**Measles Basics:** Measles is among the most contagious viral infections known with attack rates exceeding 90% in susceptible populations. Primary exposure is by the airborne route. Incubation period ranges from 7-18 days (average 10). The initial prodrome is characterized by fever, malaise, conjunctivitis, coryza, cough, and photophobia. Rash generally occurs 2-4 days following onset of the prodrome. The rash is maculopapular, typically begins on the head, spreads to the arms and legs, and is usually confluent. Diarrhea occurs in 8% of cases. Complications include otitis media (7%), pneumonia (6%), and encephalitis (0.1%). Case fatality rate is 1-3 per 1,000 cases in the U.S. and up to 30% in the developing world.

**Determination of Immunity:** Determination of immunity is a crucial first step in evaluating measles risk. Two different immunity standards are used: one for the general population and another for health care workers. For the general population birth before 1957, documentation of health care provider-diagnosed measles, a written record of age-appropriate vaccination, or a serological test of immunity constitutes proof of immunity. For health care workers year of birth is no longer a factor. Health care workers born before 1957 should have record of one MMR vaccination or a positive IgG antibody titer. Those born after January 1, 1957 should have a record of two MMR vaccinations or a positive IgG antibody titer.

**Control Measures for Measles Outbreaks:** Immunization with MMR vaccine is beneficial in preventing infection in susceptible contacts if given within 72 hours of exposure. After 72 hours it is unlikely to prevent measles infection and has the potential to complicate post-exposure evaluation. Some vaccinated adults will develop a fever and a rash. The attenuated measles strain used in the vaccine is closely related to the wild-type virus it is designed to protect against. Vaccine virus will induce an IgM and IgG immune response and will test positive on urine PCR testing. Special genotyping is necessary to differentiate the two types. Exposed, susceptible contacts that cannot be immunized within 72 hours should be observed for 21 days following last exposure before being immunized. The most effective control measures for susceptible individuals exposed to measles who cannot be vaccinated within 72 hours are quarantine during the incubation period and isolation if illness occurs. Quarantine begins 7 days after first exposure and continues until 21 days have elapsed since last exposure. If measles occurs, isolation extends until 4 days after rash onset. High dose gamma globulin (IM or IV) can be used up to 6 days post exposure for susceptible pregnant women, infants under 1 year of age, and the immunosuppressed.

**Active Surveillance:** Measles immunity is widespread in the community but far from universal. A significant number of parents seek exemptions for school entry vaccination mandates. Some people who have been previously immunized will have an incomplete or absent immune response to the vaccine. In rare cases, individuals who have had clinical measles infection in childhood will have their immunity wane as elders.

**When measles is detected in a community it is imperative that all health care providers be on alert for new cases of measles.** The following protocol should be used to evaluate patients meeting the measles clinical case definition (fever above 101 degrees F., prodromal symptoms, and generalized maculopapular rash).

### **Primary Care Evaluation of Possible Measles Cases:**

- Ensure all patients are up to date on measles, mumps, rubella (MMR) vaccine.
- Consider measles in patients with compatible symptoms, including:
  - ✓ Prodrome of fever, cough, coryza and conjunctivitis for 2-4 days
  - ✓ Generalized maculopapular rash that usually begins on the face
  - ✓ Koplik spots may appear on buccal mucosa 1-2 days prior to rash
- Ask patients about recent travel internationally or to domestic venues frequented by international travelers, as well as a history of measles exposures in their communities.
- Collect specimens on patients with suspected measles
  - ✓ Serum for measles IgM
  - ✓ Specimens for viral culture: nasopharyngeal swab, urine
  - ✓ Call Jefferson County Public Health (JCPH) at 385-9400 to expedite testing through the State Public Health Lab, **do not use commercial laboratory**
- Instruct reception staff to identify patients presenting with symptoms of possible measles.
  - ✓ Promptly isolate patients with suspected measles. Patients should wear a mask covering the nose and mouth and should be kept away from other patients.
  - ✓ Room patient immediately and close the door.
  - ✓ Only staff with documented immunity to measles should be allowed to enter the patient's room.
  - ✓ After the patient is discharged, do not use room for 2 hours. Environmental surfaces should be cleaned with a sanitizing wipe
- Report suspected cases of measles to JCPH immediately before discharging or transferring patient.

### **Other Resources:**

A comprehensive manual of measles control protocols is available at:

[www.doh.wa.gov/Portals/1/Documents/5100/420-063-Guideline-Measles.pdf](http://www.doh.wa.gov/Portals/1/Documents/5100/420-063-Guideline-Measles.pdf)

Excellent materials are also available for patients and health care providers at:

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