

## Alaska Public Health Alert

### Measles Case in Cruise Ship Passenger — What Alaska Providers Should Know

AKPHAN August 14, 2018

*All suspected or confirmed measles cases must be reported immediately to the Alaska Section of Epidemiology at (907) 269-8000 or 800-478-0084 (after-hours)*

#### Case Report

On the afternoon of August 6<sup>th</sup>, a teenager visiting with her parents from overseas boarded a cruise ship in Vancouver (British Columbia) that was bound for Alaska. Approximately one week prior to boarding the cruise ship, the patient began experiencing cold-like symptoms while travelling in Thailand, and four days prior to boarding she woke up with a rash (facial), red eyes, and feverishness. Within several hours of boarding the ship, the child was put in medical isolation due to persistence of symptoms and the concern for possible measles. Per the parents, the child had never received the measles, mumps, and rubella (MMR) vaccine. The patient remained in medical isolation until August 8<sup>th</sup> when she was transported to PeaceHealth Ketchikan Medical Center. The patient was discharged from the hospital on August 10<sup>th</sup>. Later that day, the patient was confirmed by polymerase chain reaction (PCR) testing to have been infected with the measles virus.

Measles patients are generally considered to be contagious starting four days before rash onset and ending four days after rash onset. Non-immune persons who are in close proximity to an infected person during this timeframe are at risk of developing measles; however, the risk of transmission is considered to be very low by the fourth day after rash onset.

Although this child was at the tail end of infectiousness when she boarded the cruise ship (day four after rash onset), out of an abundance of caution, the Centers for Disease Control and Prevention has advised the cruise ship to notify all passengers and crew members who might have been exposed to the patient on August 6<sup>th</sup> to be alert for potential signs and symptoms of measles and to seek medical consultation if symptoms arise.

The cruise ship passengers disembarked in Seward on the morning of August 13<sup>th</sup>, and many will be travelling throughout Alaska for a period of time before returning home. While the risk of secondary cases among these passengers is considered to be very low, it is important for healthcare providers to be aware of the possibility of secondary transmission. Providers should consider measles in their differential diagnosis for any cruise ship passenger who may be susceptible (see below) and presents with a clinically compatible illness. Based on the 7–21 day incubation period for measles, the potential dates of symptom onset for exposed cruise ship passengers range from August 13<sup>th</sup> through August 27<sup>th</sup>.

#### Measles Basics

Measles is a highly infectious viral respiratory disease that spreads via the airborne route and through direct contact with respiratory secretions. Measles typically starts with a fever, runny nose, cough, and red eyes. Two or three days after symptoms begin, tiny white spots (Koplik spots) may appear inside the mouth. Three to five days after symptoms begin, a rash breaks out. It usually begins as flat red spots that appear on the face at the hairline and spread downward to the neck, trunk, arms, legs, and feet. Small raised bumps may also appear on top of the flat red spots. The spots may become joined together as they spread from the head to the rest of the body. When the rash appears, a person's fever may

spike to more than 104° Fahrenheit. After a few days, the fever subsides and the rash fades. About 30% of people who get measles will develop one or more complications including pneumonia, ear infections, or diarrhea. More serious complications, including death, can occur. Complications are more common in young children, adults, and pregnant women.

*Incubation period:* Symptoms typically start to appear 8–12 days (range: 7–21 days) after exposure, with rash onset typically occurring around 14 days after exposure.

*Infectious period:* 4 days before rash onset through 4 days after rash onset

- Clinicians should advise persons who might have measles to call ahead before arriving at the clinic or emergency department and arrange a time and place to meet with medical staff that will minimize the risk of exposing others.
- Clinicians should ensure that persons with suspected measles should avoid exposing other people during the entire infectious period.

### **Laboratory Diagnosis**

- *Contact SOE immediately to facilitate testing: 907-269-8000, or 800-478-0084 afterhours.*
- Obtain a throat or nasopharyngeal swab; use a viral culturette and place into viral transport media (other media types can inhibit viral growth).
- Draw 7–10 mL of blood in a red-top or serum separator tube; spin down serum if possible.
  - Capillary blood (finger or heel stick) can be used for pediatric patients, if necessary (e.g., in infants); approximately 3–5 capillary tubes are needed to yield 100 µL of serum.
- Collect 20–100 mL of urine in a clean/sterile, leak-proof container.
- (See Alaska Section of Laboratories Test Directory, Rubeola (Measles) on page 56: <http://dhss.alaska.gov/dph/Labs/Documents/LaboratoryTests.pdf>).

### **Vaccination Recommendations**

- CDC recommends routine vaccination with a 2-dose series of MMR, the first dose at 12–15 months and the second dose at 4–6 years.
- One dose of MMR vaccine is approximately 93% effective for the prevention of measles; two doses are approximately 97% effective.
- Accepted presumptive evidence of immunity against measles includes one of the following:
  - Written documentation of adequate vaccination
    - One or more valid doses of a measles-containing vaccine for pre-school age children and adults not at high risk
    - Two valid doses of measles-containing vaccine for school-age children and adults at high risk, including college students, healthcare personnel, and international travelers; or
  - Laboratory confirmation of measles; or
  - Laboratory evidence of immunity\*; or
  - Birth in the United States before 1957
    - Adults born during or after 1957 who do not have evidence of immunity against measles should get at least one dose of MMR vaccine.

\*Serologic testing for immunity to measles is not necessary for persons documented to be appropriately vaccinated or who have other acceptable evidence of prior infection (see CDC Pink Book: <https://www.cdc.gov/vaccines/pubs/pinkbook/meas.html#diagnosis>).

### **Surveillance and Reporting**

- *Healthcare providers should report suspected measles cases immediately by calling the State of Alaska, Section of Epidemiology at (907) 269-8000 or (800) 478-0084 after hours.*
- Suspected cases should be promptly isolated.

### **Resources**

- CDC Measles-Healthcare Professionals, <https://www.cdc.gov/measles/hcp/index.html>
- IAC Ask the Experts-MMR, [http://immunize.org/askexperts/experts\\_mmr.asp](http://immunize.org/askexperts/experts_mmr.asp)
- MMWR, Prevention of Measles, Rubella, Congenital Rubella Syndrome, and Mumps, 2013, <https://www.cdc.gov/mmwr/preview/mmwrhtml/rr6204a1.htm>
- Section of Epidemiology Measles page, <http://dhss.alaska.gov/dph/Epi/id/Pages/measles/default.aspx>