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CDC HEALTH ADVISORY

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U.S. Multi-state Measles Outbreak, December 2014-January 2015

Summary

The Centers for Disease Control and Prevention (CDC) and State Health Departments are investigating a multi-state outbreak of measles associated with travel to Disneyland Resort Theme Parks (which includes Disneyland and Disney California Adventure). The purpose of this HAN Advisory is to notify public health departments and healthcare facilities about this measles outbreak and to provide guidance to healthcare providers. Healthcare providers should ensure that all of their patients are current on MMR (measles, mumps, and rubella) vaccine. They should consider measles in the differential diagnosis of patients with fever and rash and ask patients about recent international travel or travel to domestic venues frequented by international travelers. They should also ask patients about their history of measles exposures in their community. Please disseminate this information to healthcare providers in hospitals and emergency rooms, to primary care providers, and to microbiology laboratories.

Background

Measles is a highly contagious, acute viral illness. It begins with a prodrome of fever, cough, coryza (runny nose), conjunctivitis (pink eye), lasting 2-4 days prior to rash onset. Measles can cause severe health complications, including pneumonia, encephalitis, and death. Measles is transmitted by contact with an infected person through coughing and sneezing; infected people are contagious from 4 days before their rash starts through 4 days afterwards. After an infected person leaves a location, the virus remains viable for up to 2 hours on surfaces and in the air.

The United States is experiencing a large multi-state measles outbreak that started in California in December 2014 and has spread to six additional states and Mexico. The initial confirmed case-patients reported visiting Disneyland Resort Theme Parks in Orange County, CA, from December 17 through December 20, 2014. From December 28, 2014, through January 21, 2015, 51 confirmed cases of measles linked to this outbreak have been reported to CDC, 42 from California and 9 from six other states (3 in UT, 2 in WA, 1 in OR, 1 in CO, 1 in NE, and 1 in AZ). In addition to the U.S. cases, one case was reported from Mexico in an unvaccinated child who visited Disneyland Resort Theme Parks on December 17 and December 20, 2014. At this time, no source case for the outbreak has been identified, but it is likely that a traveler (or more than one traveler) who was infected with measles overseas visited one or both of the Disney parks in December during their infectious period.

For cases with age reported, the age of case-patients range from 10 months to 57 years (median = 16.5 years). To date, 8 (15%) case-patients were hospitalized. Of the 52 outbreak-associated cases, 28 (55%) were unvaccinated, 17 (31%) had unknown vaccination status, and 6 (12%) were vaccinated. Of the 6 cases vaccinated, 2 had received 1 dose and 4 had received 2 or more doses. Among the 28 unvaccinated cases, 5 were under age for vaccination. Measles genotype information was available from 9 measles cases; all were genotype B3 and all sequences linked to this outbreak are identical. The sequences are also identical to the genotype B3 virus that caused a large outbreak in the Philippines in 2014. During the last 6 months, identical genotype B3 viruses were also detected in at least 14 countries and at least 6 U.S. states, not including those linked to the current outbreak.

Measles was declared eliminated (i.e., interruption of year-round endemic transmission) in the United States in 2000, because of high population immunity achieved by high 2-dose measles vaccine coverage

and a highly effective measles vaccine. However, measles is still endemic in many parts of the world, and outbreaks can occur in the U.S. when unvaccinated groups are exposed to imported measles virus. In 2014, nearly half of importations in the U.S. were linked to travel to the Philippines during the large measles outbreak in that country. Disney and other theme parks are international attractions, and visitors come from many parts of the world, including locations where measles is endemic. The current multi-state outbreak underscores the ongoing risk of importation of measles, the need for high measles vaccine coverage, and the importance of a prompt and appropriate public health response to measles cases and outbreaks.

Because of the success of the measles vaccine program, most young physicians have never seen a case of measles and may not take a detailed history of travel or potential exposure and initially may not consider the diagnosis in a clinically compatible case.

Recommendations for Health Care Providers

- Ensure all patients are up to date on MMR vaccine* and other vaccines.
- For those who travel abroad, CDC recommends that all U.S. residents older than 6 months be protected from measles and receive MMR vaccine, if needed, prior to departure.
 - Infants 6 through 11 months old should receive 1 dose of MMR vaccine before departure.†
 - Children 12 months of age or older should have documentation of 2 doses of MMR vaccine (separated by at least 28 days).
 - Teenagers and adults without evidence of measles immunity** should have documentation of 2 appropriately spaced doses of MMR vaccine.
- Consider measles as a diagnosis in anyone with a febrile rash illness and clinically compatible symptoms (cough, coryza, and/or conjunctivitis) who has recently traveled abroad or who has had contact with someone with a febrile rash illness. Immunocompromised patients may not exhibit rash or may exhibit an atypical rash. The incubation period for measles from exposure to fever is usually about 10 days (range, 7 to 12 days) and from exposure to rash onset is usually 14 days (range, 7 to 21 days).
- Isolate suspect measles case-patients and immediately report cases to local health departments to ensure a prompt public health response.
- Obtain specimens for testing, including viral specimens for confirmation and genotyping. Contact the local health department for assistance with submitting specimens for testing.

* Children 1 through 12 years of age may receive MMRV vaccine for protection against measles, mumps, rubella, and varicella.

† Infants who receive a dose of MMR vaccine before their first birthday should receive 2 more doses of MMR vaccine, the first of which should be administered when the child is 12 through 15 months of age and the second at least 28 days later.

** One of the following is considered evidence of measles immunity for international travelers: 1) birth before 1957, 2) documented administration of 2 doses of live measles virus vaccine (MMR, MMRV, or measles vaccines), 3) laboratory (serologic) proof of immunity or laboratory confirmation of disease.

For more information:

- CDC. Measles—United States, January 1–May 23, 2014. *MMWR*. 2014;63:496-499
<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6322a4.htm>

- CDC's Measles (Rubeola) website.
<http://www.cdc.gov/measles/index.html>
- CDC's Measles Vaccination website.
<http://www.cdc.gov/measles/vaccination.html>
- CDC. Notes from the Field: Measles Transmission at a Domestic Terminal Gate in an International Airport — United States, January 2014. *MMWR*. 2014; 63):1211-1211
<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6350a9.htm>
- Medscape Today: CDC Expert Commentary: Measles: What You Might Not Know Recognizing, diagnosing, and preventing measles (running time: 5:20 mins).
<http://www.medscape.com/viewarticle/741206>
- CDC. Prevention of Measles, Rubella, Congenital Rubella Syndrome, and Mumps, 2013: Summary Recommendations of the Advisory Committee on Immunization Practices (ACIP)
<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6204a1.htm>.
- CDC. Manual for the Surveillance of Vaccine-Preventable Diseases; Chapter 7: Measles
<http://www.cdc.gov/vaccines/pubs/surv-manual/chpt07-measles.html>

Questions can be directed to the Missouri Department of Health and Senior Services' (DHSS') Bureau of Communicable Disease Control and Prevention at 573/751-6113 or 800/392-0272 (24/7).

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