

## Possible Measles Exposures in Southern Nevada

### Summary

The Southern Nevada Health District (SNHD) has been notified of a person who was infectious with measles who spent two nights in Las Vegas on August 9 & 10, 2013, arriving by car. Although the risk to the overall population is low, **the health district is encouraging physicians to include measles in their differential diagnoses through August, 2013 for unvaccinated Clark County, NV patients presenting with maculopapular rashes and fevers.** All suspected measles cases should be immediately reported to the SNHD Office of Epidemiology at 759-1300, option #2.

### Current Situation

SNHD has been notified of a measles case in a woman who had visited Southern Nevada during her infectious period. She had not been previously immunized and acquired the disease before arriving in the United States. Travelling by car, she arrived in Las Vegas on August 9, 2013 and left on August 11, 2013. While in Las Vegas, the woman visited multiple resorts and dined at several restaurants. However, she could not provide details on her exact whereabouts. She also attended the Criss Angel magic show on the evening of August 10, 2013. Her prodromal symptoms began on August 9 with fever, chills and sore throat. Her rash developed on August 13, she sought medical care in another state and was laboratory-confirmed as being infected with measles.

### Risk of Disease Transmission

Because of the large number of tourists and residents with whom she may have had contact, it is impossible to determine who might have been exposed to measles and to what degree. There is a high degree of immunity in the U.S. population, due to high immunization rates nationwide and the large number of people who were naturally infected with measles before vaccine use became widespread in the late 1960s. *While the risk to the overall population is low, unvaccinated individuals are at highest risk for disease.*

### Reporting

All suspected cases of measles should be immediately reported to the SNHD Office of Epidemiology (OOE) by telephone. Health district staff are available to take reports and assist medical providers 24 hours a day at 759-1300, option #2.

### Epidemiology of Measles

Childhood vaccination with measles-containing vaccines has resulted in the interruption of indigenous transmission of measles in the United States. Once a common childhood disease, the identification of a case of measles is a rare occurrence, but it usually requires immediate public health intervention. According to the CDC, the United States sees an average of 60 cases of measles a year. Recent national statistics indicate that most confirmed measles cases are import-associated. *Source: CDC*

### Measles Symptoms

The incubation period for measles averages 10-12 days. The prodromal symptoms of a high fever (103° F - 105°F), cough, coryza, and conjunctivitis last 2-4 days. Koplik spots, lesions that appear as small blue-white spots on the bright red background of the buccal mucosa, appear 1-2 days prior to the rash onset to 1-2 days after the rash onset. Next, a discreet, maculopapular rash begins at the hairline and, over the course of 3 days, progresses generally downward and outward toward the hands and feet.

Measles presenting in an immunocompromised person may be severe with prolonged course, often occurring without the typical rash. This is reported almost exclusively in persons with T-cell deficiencies.

A variant of the disease called "atypical measles" only occurs in persons who have received the inactivated measles vaccine, which was available from 1963 to 1967. An estimated 600,000 to 900,000 persons received this vaccine. The vaccine sensitized the recipient to the virus antigens without providing protection. It is recommended that persons who have received the killed vaccine be revaccinated. Persons who received the vaccine before 1968 should be re

vaccinated if they received an unknown type of vaccine, as it may have been the inactivated vaccine.

**Transmission**

Measles is transmitted person-to-person via large respiratory droplets. Airborne transmission via aerosolized droplet nuclei has been documented in closed areas for up to two hours after a person with measles has occupied the area. A person with measles is contagious from four days before to four days after rash onset. The disease is highly communicable, with greater than a 90% secondary attack rate among susceptible persons.

**Diagnosis and Testing**

**Measles should be included in the differential diagnoses for *unvaccinated* Clark County, NV patients presenting through August, 2013 with maculopapular rashes and fevers.** Vaccinated individuals are unlikely to develop the disease.

The diagnosis of acute measles infection can be made by detecting IgM antibody to measles in a single serum specimen. Enzyme immunoassay (EIA), Enzyme linked immunosorbent assay (ELISA) or Immunofluorescent antibody (IFA) tests for measles IgM antibody are available from multiple clinical laboratories (Table). It is recommended that serologic tests should be collected 72 hours *after rash onset* in order to prevent initial false negative test results. If false negative or false positive test results are suspected, contact the SNHD OOE for assistance with additional confirmatory laboratory testing.

**Post-Exposure Prophylaxis and Vaccination**

In this particular situation, the case was identified too late for post-exposure prophylaxis to be effective. When exposures are identified promptly, live measles vaccine can prevent disease if given within 72 hours of exposure and immune globulin can prevent or modify disease if given within 6 days of exposure. However, vaccination, which provides permanent protection, is still recommended for unvaccinated persons.

The measles vaccine is safe, and highly effective in preventing measles. Vaccination is recommended for all adults born in 1957 or later, who do not have a medical condition, and do not have documentation of receiving a measles-containing vaccine. With the exception of persons who work in a medical facility,

birth before 1957 can be considered acceptable evidence of immunity. Over 99% of people develop immunity after completing the two-dose schedule of vaccine, which must be given at least 28 days apart. Children should be vaccinated according to the Center for Disease Control and Prevention schedule which can be found at <http://www.cdc.gov/nip/recs/child-schedule.htm>

The Southern Nevada Health District provides measles vaccine to the public at a number of locations throughout Southern Nevada. More information can be found on the SNHD website at <http://www.snhd.info>, or by calling (702) 759-0850.

Staff are also available to speak to the public about measles Monday through Friday, 8:00 am through 4:30 pm, at 759-1300, option #4.

**References**

Measles - United States, 2011. MMWR. 61(15);253-257  
 Heymann, DL. Control of Communicable Disease Manual, 19<sup>th</sup> Edition. American Public Health Association. p 402-408.

**Table Lab Testing for Measles**

Lab: Test (Source)	Test Code
<b>Quest</b> Measles (Rubeola) antibody, IgM, IFA	34256
<b>LabCorp</b> Measles (Rubeola) antibody, IgM, EIA	160218
<b>Clinical Pathologies Laboratories (CPL)</b> Measles (Rubeola) antibody, IgM, ELISA	4603
<b>ARUP</b> Measles (Rubeola) antibody, IgM, ELISA	0099597

Reference: VPD Surveillance Manual, 5<sup>th</sup> Edition, 2012  
 Laboratory Support for the Surveillance of Vaccine Preventable Diseases: Chapter 22-15