Division of Public and Behavioral Health

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Topic: Guidance on Testing for Measles

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To: All Providers and Medical Facilities

Current Situation

Since early January, 27 Nevada residents have been evaluated for measles; only four cases have been laboratory confirmed so far. Measles is a highly infectious airborne virus that spreads through droplets dispersed during breathing, speaking, coughing or sneezing. These droplets remain suspended in the air for up to two hours and can easily reach and infect susceptible unimmunized individuals and to lesser extent under-immunized individuals (those who received only one dose of the mumps, measles and rubella (MMR) vaccine). About 99% of those properly immunized against measles (received two doses of the MMR vaccine) are protected against the infection.

Measles Clinical Description for Public Health Surveillance

Measles is an acute febrile illness that is characterized by
- Generalized, maculopapular rash lasting ≥3 days; and
- Temperature ≥101°F and
- Cough, Coryza, or Conjunctivitis

Differential diagnoses for measles includes drug reactions, generalized dermatitis and allergies, varicella, hand-foot-and-mouth disease, Fifth Disease caused by parvovirus B-19, and several other rash associated conditions.

According to CDC, a measles case can be confirmed by one or more of the following four laboratory criteria*

1. A positive serologic test for measles immunoglobulin M antibody (IgM)**. The detection of IgM antibodies in a serum sample collected on day 4 to day 10 after the rash onset can provide presumptive evidence of a current or recent measles virus infection. For additional information including sample collection and handling please check the CDC website http://www.cdc.gov/measles/lab-tools/serology.html

2. A significant increase (at least fourfold) in the measles immunoglobulin G antibody (IgG)** titer between the acute and the convalescent levels. This criterion requires testing the patient two times.

3. Isolation of the measles virus from throat or nose swabs (throat swabs are preferable), nasal aspirates, throat washes, or urine, typically by detecting the viral RNA through a reverse transcription polymerase reaction (RT-PCR) testing. Specimens for PCR testing should be collected within 7 days of the rash onset.***.

4. Viral cultures require relatively long time to process however genotyping the virus can help public health investigators determine linkages between cases.

* It is important to recognize that measles laboratory tests can result in false negative results especially if specimens are collected less than 3 days before or more than 4 weeks after the rash onset.

** Currently the Nevada State Public Health Laboratory (NSPHL) is not performing Measles Serologic testing.

Such tests can be performed at several commercial and local laboratories around the state.

*** NSPHL is currently equipped to perform this test. However, urine specimens cannot be processed at this time

Measles is a reportable condition in Nevada per NAC 441A.610. Please report all measles cases to the state/local health authority. Clark County: Southern Nevada Health District, 702.759.1300 I Washoe County: Washoe County Health District, 775.328.2447 I Carson City, Douglas, and Lyon Counties: Carson City Health and Human Services, 775.887.2190 I other counties: Rural Community Health Services, 775.687.5162 (business hours) or 775.434.4358 (after hours) I State of Nevada Epidemiology Duty Officer (24 hours): 775.400.0333 Medical Officer

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