Technical Bulletin
Division of Public and Behavioral Health

Date: January 27, 2015
Topic: Measles – Provider Update
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To: All Providers and Medical Facilities

Background:
Before the implementation of the measles vaccine, measles caused significant morbidity, mortality and disability in in the United States (US). In the decade before the widespread vaccination campaigns, an estimated 3 to 4 million Americans contracted measles resulting in 48,000 hospitalizations, 400-500 deaths and 4,000 disabled patients especially after developing measles encephalitis. Following the introduction of measles vaccine, cases of measles declined dramatically in the US and worldwide. And, due to a sustained high 2-dose measles-mumps-rubella (MMR) vaccine coverage in children, measles was declared at the beginning of the century as an eliminated disease in the US where no measles transmission occurred for 12 consecutive months. However, measles continued to be common or even endemic in many other regions of the world, including Western Europe.

After a significant period of success in controlling this serious infection, measles started gradually to re-emerge in the US reaching a record number of 644 cases in 2014. This was the largest number of cases reported in the US since the measles' elimination.

Current Situation
During the first three weeks of this year, 68 measles patients from 11 states were reported to the Centers for Disease Control and Prevention (CDC). Most of these cases are part of the large, ongoing multistate measles outbreak that initially started in California, and currently one Nevada resident is being evaluated for measles. During the 15-year period from 2000 to 2014 Nevada reported 14 cases of measles to CDC; almost all of them were contracted outside the US.

Measles Signs and Symptoms
The incubation period for measles ranges from 7 to 21 days. Measles is a highly infectious airborne acute viral respiratory illness characterized by a prodrome of the following:

- Fever up to 105°F
- Malaise
- Cough
- Coryza
- Conjunctivitis
- Towards the end of the prodrome a pathognomonic enanthema (Koplik Spots) may appear as white spots, often on a reddened background inside the cheeks.
- Three to five days after the first symptoms a rash - that spreads from the head to the trunk and lower extremities - appears. This maculopapular rash can also affect the palms of hands and the soles of feet. However, it is important to note that immunocompromised patients may not develop the rash.

Common Complications
Even in previously healthy children, measles can cause serious illnesses requiring hospitalization. Common complications from measles may include the following:

- Otitis media
- Bronchopneumonia
- Laryngitis, tracheitis and bronchitis
- Diarrhea

One per 1,000 measles cases develops acute encephalitis, and about two per 1,000 children who become infected with measles dies from respiratory and neurologic complications. Subacute sclerosing panencephalitis is a rare, but fatal degenerative disease of the

central nervous system characterized by behavioral and intellectual deterioration and seizures rarely develops 7 to 10 years after measles infection.

Measles Transmission
Measles patients start spreading the virus 4 days before the beginning of the rash and continue to be infectious until 4 days after the rash erupts. Daycare center and school-age children especially those in facilities with low vaccination rates are at increasing risk for contracting measles.

Prevention and Control
Measles is a vaccine-preventable infection and can be prevented, controlled and even eliminated again in the US through the proper use of the safe and highly effective vaccine.

Healthcare providers should consider measles in patients who present with febrile rash illness and clinically compatible measles symptoms especially among susceptible individuals such as:

- Patients who have not been vaccinated
- Contacts to a measles patient especially during the infectious period
- Patients who reside in or recently visited a state/community where measles is currently occurring in the US
- Patients who recently traveled abroad or were visited by someone who recently arrived from another country

It is essential to obtain specimens for testing from patients with suspected measles, including viral specimens for genotyping, which can help determine the source of the virus.

It is extremely important for Nevada healthcare providers to promptly recognize, and properly isolate measles patients in order to avoid the ongoing disease transmission. Delayed recognition and reporting of measles can hinder the implementation of critical immediate measures to stop measles from spreading. Additionally, please immediately report measles cases to the state/local health authority.

For additional information on measles please visit the CDC Website http://www.cdc.gov/measles/index.html

For information on reporting cases of measles, please refer to NAC 441A.610 or contact the local health authority in your county: **Clark County**: Southern Nevada Health District, 702.759.1300 I **Washoe County**: Washoe County Health District, 775.328.2447 **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

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