MEASLES IN NEVADA, 2003-2012

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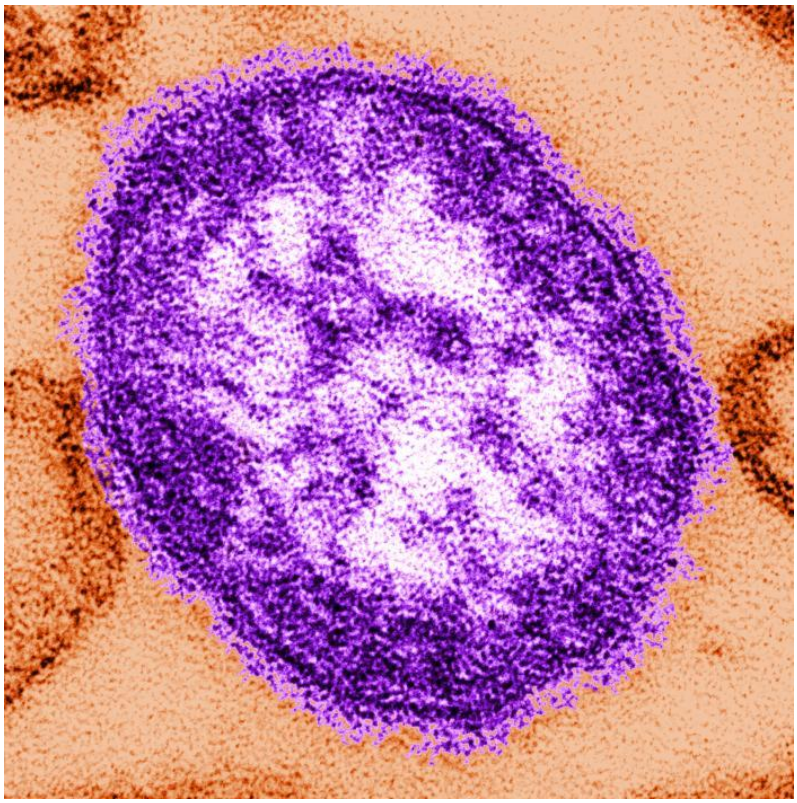

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Purpose

The purpose of this report is to provide a general overview of the incidence and recent trends of measles among Nevada residents. The report also includes Healthy People 2010 objectives, Healthy People 2020 objectives, and Nevada data collected from cases of measles from 2003 to 2012. Measles is listed as one of Nevada's reportable diseases pursuant to NRS 441A (1), and reporting is further regulated by NAC 441A.610 (2).

Measles

Measles, also called rubeola (not to be confused with rubella, German measles), is a highly contagious respiratory disease caused by the measles virus. The measles virus lives in mucus in the nose and throat of infected individuals. Measles is transmitted between humans. When an infected individual coughs or sneezes, droplets containing the virus are widely dispersed in the vicinity. Other persons may become infected as they breathe in these droplets or if they put their fingers in their mouth or nose after touching an infected surface. Measles can persist on a surface for up to 2 hours. Based on the well-established epidemiology of measles, for every infected person, 90% of those who come into contact with the individual and are not immune become infected (3).

Symptoms of measles appear 7-14 days after infection. A typical case begins with a fever, cough, runny nose, red watery eyes, and sore throat. Two to three days later, Koplik's spots (tiny white spots with bluish-white centers) appear in the mouth. Three to five days after the start of symptoms, a red or reddish-brown rash appears, usually beginning on the face at the hairline and spreading down to the neck, trunk, arms, legs, and feet. At the time the rash appears, the fever may spike to more than 104°F. After a few days, the fever often subsides and the rash fades. An infected individual is usually contagious from 4 days before to 4 days after the rash appears. Measles is diagnosed by clinical presentation, travel and exposure history, and serum sample, throat swab, or urine sample for laboratory testing. There is no specific antiviral treatment for measles, but medical care can help relieve symptoms and address complications such as bacterial infections (3).

Approximately 30% of measles cases develop one or more complications; complications are more common among children under 5 years of age, adults over 20 years of age, pregnant women, and immunocompromised individuals. 10% of children with measles develop an ear infection, 5% develop pneumonia, and 8% report diarrhea. About 1 in 1,000 children with measles develop encephalitis, an inflammation of the brain that can lead to convulsions and result in deafness or mental retardation. Sub-acute sclerosing panencephalitis (SSPE) is rare but generally develops 7 to 10 years after measles infection and is a fatal degenerative disease of the central nervous system characterized by behavioral and intellectual deterioration and seizures. Out of every 1,000 children who are infected with measles, 1 or 2 cases are fatal. Pneumonia is the complication that is most often the cause of death in younger children, and measles is the leading cause of blindness among African children. Measles in pregnant women may result in miscarriage or premature birth. Worldwide, it is estimated there are 20 million cases of measles and 164,000 deaths due to measles each year. In developing countries, measles has been known to kill as many as 1 out of 4 (3).

Measles can be prevented by vaccination. Measles vaccination is contained in the MMR (measles, mumps, and rubella) and MMRV (measles-mumps-rubella-varicella) vaccines. Prior to the start of the measles vaccination program in 1963, almost all children in the United States became infected with measles before the age of 15 years as well as 3 to 4 million adults each year, resulting in 400 to 500 deaths, 48,000 hospitalizations, and 1,000 people developing chronic disability due to measles encephalitis. Nationally, the vaccine has reduced measles incidence by more than 99%, and in 2000, measles was declared eliminated from the United States, meaning the disease was no longer native to the US. Though considered eliminated in the US, measles has not yet been eradicated worldwide; therefore, unvaccinated individuals in the US are still at risk of becoming infected because unvaccinated Americans or foreign visitors may acquire the disease abroad and bring it back

with them. This year, the US is experiencing a record number of cases compared to previous years. From January 1 to June 13, 2014, 477 cases were reported with 16 outbreaks in 20 states. Already this is higher than the totals for each year between 2000 and 2013, which ranged from 37 to 220 cases. The Centers for Disease Control and Prevention (CDC) believes the increase of cases in 2014 is due to a large, ongoing measles outbreak in the Philippines; many of the cases in the US in 2014 have been associated with cases from the Philippines. It is, therefore, important for persons to become vaccinated to help control outbreaks and prevent the further spread of measles. The majority of people who become infected were unvaccinated, and once measles reaches a community, it spreads easily among the unvaccinated (3).

From 2003 to 2012, there were 4 cases of measles among Nevada residents: One reported case in each of the following years: 2008, 2009, 2010, and 2011. All cases were reported in Clark County, and 3 of the cases were in children 5 years of age or younger. Of the 20 states with reported cases in 2014, 3 states (California, Oregon, and Utah) neighbor Nevada (3); vaccination and early detection of cases among Nevada residents is therefore important to respond to measles cases and outbreaks within the state.

Technical Notes

All Nevada data from 2003 to 2012 came from reported measles infections among Nevada residents (4, 5). The CDC and the Council of State and Territorial Epidemiologists case definition of measles encompasses all cases classified as probable and confirmed; all cases of measles used for this report follow this definition (6). Due to low case counts, rates were not calculated for this report.

Sources

1. Nevada Revised Statute (NRS) 441A. https://leg.state.nv.us/NRS/NRS-441A.html
2. Nevada Administrative Code (NAC) 441A.610. http://www.leg.state.nv.us/nac/NAC-441A.html#NAC441ASec610
3. Centers for Disease Control and Prevention. (2014). Measles (Rubeola). National Center for Immunization and Respiratory Diseases (NCIRD), Division of Viral Diseases. Retrieved 2014-06-11. http://www.cdc.gov/measles/index.html
4. NBS. NEDSS . All counties except Clark. 2005 to 2012.
5. NETSS. All counties from 2000 to 2004 and Clark. 2005 to 2012.
6. Centers for Disease Control and Prevention. (2014). Measles (Rubeola). National Notifiable Diseases Surveillance System. Retrieved 2014-06-11. http://wwwn.cdc.gov/NNDSS/script/casedef.aspx?CondYrID=908&DatePub=1/1/2013%2012:00:00%20AM

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