



## Mumps Looming on the Horizon?



On Wednesday, Dr. Julie Gerberding, Director of the Centers for Disease Control and Prevention (CDC), stated that over 1150 cases of mumps have been reported from eight states so far this year – and suspected mumps cases are under investigation in seven more states. Dr.

Gerberding said, “We are

not going to be surprised if there are more cases in more states just given the nature of mumps and the way this outbreak is progressing.”

Iowa, the state at the center of the epidemic, has reported 815 cases; and Nebraska has reported 110 cases. Mumps cases have also been confirmed in Kansas, Illinois, Indiana, Michigan, Missouri, Wisconsin and Minnesota. The current epidemic is the nation's biggest mumps outbreak since Kansas reported 269 cases in 1988-89.

### Pathogenesis

Mumps is an acute viral illness caused by a paramyxovirus and spreads via airborne transmission or direct contact with infected droplet nuclei or saliva. The incubation period is 14-18 days (range: 14-25 days). The virus replicates in the nasopharynx and regional lymph nodes.

Within 12-25 days post-exposure, a viremia occurs and lasts from 3-5 days. During the viremia, the virus may spread to multiple tissues, including the meninges, and glands such as the salivary, pancreas, testes and ovaries. Inflammation in infected tissues leads to characteristic symptoms of parotitis and aseptic meningitis.<sup>1</sup>

### Clinical Features

Up to 20% of mumps infections are asymptomatic. An additional 40-50% may have only respiratory or nonspecific “flu-like” symptoms – myalgia, anorexia, malaise, headache and low-grade fever.

Parotitis is the most common manifestation and occurs in 30-40% of cases. Parotitis may be unilateral or bilateral and affect any combination of single or multiple salivary glands. Parotitis tends to occur within the first two days and may initially be noticed as an earache and tenderness on palpation of the angle of the jaw. Symptoms tend to decrease after one week and usually resolve after 10 days.<sup>1</sup>

### Complications of Mumps

CNS Involvement	15% of clinical cases
Orchitis	20-50% of post-pubertal males
Oophoritis	5% of post-pubertal females
Pancreatitis	2-4%
Deafness	1/20,000
Death	1-3/10,000

Dr. Gerberding cautioned, “So, although these complications are very rare, occasionally they are serious.” There have been at least 20 hospitalizations associated with the current epidemic, but so far no deaths.

### Case Confirmation

**Clinical Case Definition:** An illness with acute onset of unilateral or bilateral tender, self-limited swelling of the parotid or other salivary gland lasting 2 or more days, and without other apparent cause.

**Confirmed Case Definition:** 1) A case that is laboratory confirmed, or 2) Meets the clinical case definition and is epi-linked to a confirmed or probable case.

#### Definition of Laboratory Confirmed:

CDC highly recommends collection of specimens for both serology and virus detection as soon as possible after symptom onset.

- 1) Serology: The EIA for IgM and IgG is widely available commercially and is more sensitive than other tests. IgM usually becomes detectable during the first few days of illness and reaches a peak about a week after onset. Confirmation by IgG testing requires a 4-fold rise in titer between an acute and a convalescent specimen drawn 2-5 weeks apart.<sup>2</sup>
- 2) Virus Isolation or RT-PCR from saliva (preferred) and/or urine.

## Risk Factors

Dr. Gerberding states, "The best protection against mumps is the vaccine. The problem here is with the lack of complete coverage of the vaccine ... Our vaccine program for mumps began in 1967, but just by nature, there is a group of students, roughly college-age students, who may be less likely to have received both doses of the mumps vaccine and are incompletely vaccinated. Therefore, they are susceptible when infection is introduced, and they have a very high chance of getting mumps under those environments."

She continued, "About 10 percent of people who get both doses of the vaccine still remain [susceptible] to mumps. So if you are in a community of 10,000 people and 10 percent of the people who got both doses of the vaccine are susceptible, once you get a little outbreak going in that community, that means that up to 1,000 people in the community would actually come down with mumps even though they were properly immunized with what we know is a very good vaccine."

Dr. Gerberding states emphatically that all health care workers, students and institutionalized persons should receive 2 doses of MMR. Persons born before 1957 are presumed immune to mumps due to natural exposure to the disease in the pre-vaccine era.

## Recommendations

There have been four cases of mumps diagnosed in Washoe County since 1998. But with the looming possibility the current epidemic could advance to Nevada, the District Health Department urges physicians to do the following:

- Consider mumps in patients with a compatible clinical presentation and a social/demographic profile consistent with persons most at risk in the current U.S. epidemic – even if they have had two doses of MMR. Of special concern may be recent travelers to affected states or students returning home from Midwestern schools after the spring term ends.
- Collect appropriate specimens and order tests for laboratory confirmation of suspected mumps cases.
- Report mumps cases and suspected cases to the District Health Department Communicable Disease Control Program at 328-2447.

## Local News Coverage

In recent contacts with local news media, the District Health Department has emphasized the following:

- Washoe County residents should contact their immunization provider if they need to confirm their vaccination status.
- If immunization against mumps is needed, Washoe County residents should contact their primary healthcare provider. Persons without a primary healthcare provider can be immunized against mumps at the following:

### Washoe County District Health Department

1001 East Ninth Street, Bldg. B, Reno  
Mondays, Wednesdays & Fridays. 8 a.m. to 4:30 p.m. Walk-in clinic only. 328-2472.

### Health Access Washoe County (HAWC)

1055 South Wells Avenue,  
Reno

Call for an appointment.  
329-6300.

### Orvis Nursing Clinic

401 West Second Street,  
#100, Reno

Call for an appointment.  
327-5000.

### Saint Mary's

### Immunization Program

645 North Arlington  
Avenue, #265, Reno

Call for an appointment. 770-7100.



## Resources

For more information and assistance, please call the District Health Department Communicable Disease Control Program at 328-2447. For information on immunization, please call the Immunization Program at 328-2440 or visit <http://www.washoecounty.us/health>.

For detailed information about mumps, diagnostic tests and updates on the current epidemic, please visit <http://www.cdc.gov/nip/diseases/mumps>.

### References:

<sup>1</sup>CDC. Epidemiology & Prevention of Vaccine-Preventable Diseases. Atkinson W, Hamborsky J, McIntyre L, Wolfe S, eds. 8<sup>th</sup> ed. Washington DC: Public Health Foundation, 2005.

<sup>2</sup><http://www.cdc.gov/nip/diseases/mumps>.