



CAHAN San Diego

California HEALTH ALERT NETWORK

Date: March 11, 2016
To: CAHAN San Diego Participants
From: Public Health Services, Epidemiology Program

Mumps in Colleges and Universities

This health advisory notifies CAHAN participants that two mumps cases were recently reported at the University of San Diego (USD) and that a number of colleges and universities across the United States are currently experiencing mumps outbreaks. Information is also provided on the clinical presentation, laboratory testing, and reporting of mumps.

Background

In late February, a fully immunized undergraduate student at USD was confirmed with mumps after presenting initially with parotitis (swelling of the salivary glands) followed two days later by orchitis (testicular swelling). He had no known mumps exposures or travel history. An unimmunized close contact of the index case developed parotitis and was reported this week as a probable mumps case.

The school community has been notified about the cases and those who are under immunized (no or one MMR documented) are being encouraged to get vaccinated now. In order to increase protection for potential future exposures, a [third MMR booster](#) is being recommended for undergraduate students and immunization clinics on the campus are planned for next week. Individuals exposed to the most recent case may present with mumps symptoms through April 4, however if new cases occur, individuals exposed to them may present later.

Only one to three cases of mumps are reported in San Diego each year, usually associated with overseas travel. However, several universities and colleges across the country are currently experiencing mumps outbreaks including institutions in [Indiana](#), [Iowa](#), [Kentucky](#), [New Hampshire](#), [North Carolina](#), and [Massachusetts](#). Over 500 mumps cases have been reported in an ongoing outbreak involving several schools in [Illinois](#). The beginning of the Spring Break season may have an impact on further and wider transmission.

Mumps Epidemiology and Clinical Symptoms

Mumps virus is spread through infected respiratory tract secretions. It can be spread within three to six feet when an infected person coughs or sneezes, or with direct contact with infected secretions (e.g., sharing water bottles). The incubation period is typically 16 to 18 days but can range from 12 to 25 days. The disease is seasonal, with more cases noted in the late winter and early spring.

Parotitis is the most common symptom (30-65%), but non-specific symptoms such as myalgia, anorexia, malaise, headache, and low-grade fever may precede the parotitis by several days. In the prevaccine era, 15-30% of infections were asymptomatic. Mumps is usually a mild illness, but there can be complications. Orchitis is a common complication and may occur in as many as 50% of postpubertal males.

Central nervous system (CNS) involvement is also common, but fewer than 10% have symptoms of CNS infection. Other rare complications include arthritis, mastitis, glomerulonephritis, myocarditis, endocardial fibroelastosis, thrombocytopenia, cerebellar ataxia, transverse myelitis, ascending polyradiculitis, pancreatitis, oophoritis, and hearing impairment.

People are considered infectious from two days before symptoms begin until five days after the onset of parotid swelling. Therefore, those suspected of mumps should be isolated and should refrain from public activities for five days after the onset of swelling.

[Mumps vaccine](#) is highly effective in preventing mumps. One dose is 78% effective, and two doses are 88% effective. Protection appears to be long lasting; however immunity may wane and mumps cases do occur in vaccinated individuals. Individuals with one dose of MMR should receive a second dose of MMR, and those with two doses of MMR may benefit from a [third booster shot during outbreaks](#). Neither mumps vaccine nor immune globulin (IG) is effective for mumps post exposure prophylaxis; a third MMR booster is intended to protect from future exposures during an outbreak.

More information is available at the Centers for Disease Control and Prevention (CDC) [mumps website](#) and the California Department of Public Health (CDPH) [mumps website](#).

Diagnosis

Mumps virus is the only cause of epidemic parotitis. Parotitis – especially sporadic cases – [may be due to viruses other than mumps](#): Epstein-Barr virus, human herpesvirus B6, cytomegalovirus, parainfluenza virus types 1 and 3, influenza A virus, coxsackieviruses and other enteroviruses, lymphocytic choriomeningitis virus, and human immunodeficiency virus. Bacterial causes of parotitis include *Staphylococcus aureus* and nontuberculous *Mycobacterium*.

The preferred method for confirming acute mumps infection is detection of virus from a buccal specimen by PCR. Collection of a buccal specimen within 1 to 3 days of parotitis onset is optimal; however, virus may be detected for up to 9 days after parotitis onset. The parotid gland area (the space between the cheek and the teeth just below the ear) should be massaged for about 30 seconds prior to obtaining the specimen. Detailed specimen collection guidance is available at the [CDPH mumps website](#).

Acute mumps infection may also be laboratory confirmed by the presence of serum mumps IgM, a significant rise in IgG antibody titer in acute- and convalescent-phase serum specimens, or positive mumps virus culture. However, mumps IgM response may be attenuated or absent in vaccinated persons, making serologic confirmation difficult. In addition, studies have shown that individuals with detectable mumps IgG titers have still developed mumps infection. Serum for IgM testing should not be obtained earlier than three days after the onset of parotitis.

Actions Requested of Healthcare Providers:

- **Consider a diagnosis of mumps** in anyone (especially college students and international travelers) presenting with typical symptoms of mumps, regardless of vaccination history.
- **Use droplet and standard precautions** when caring for suspect or confirmed cases and verify that healthcare workers likely to encounter these patients are up-to-date on immunizations or have documented immunity.
- **Obtain appropriate clinical specimens.** For acutely ill patients who have been previously vaccinated, or who are part of an outbreak, a buccal swab for PCR testing is preferred.
- **Isolate suspect and confirmed mumps cases** and instruct them not return to school, work, or other public places until five days after the onset of parotitis. Exposed healthcare providers, without presumptive evidence of immunity, will need to be excluded from work.
- **Report suspected cases before obtaining confirmatory lab results** by calling the Epidemiology Program at **619-692-8499** during business hours Monday through Friday, or **858-565-5255** after-hours on evenings & weekends.
- **Vaccinate** patients with MMR according to the CDC recommended schedules [for children](#) and [adults](#), including “catch-up” vaccination for those who are not up-to-date. Provide a third booster MMR when indicated for those who are in an outbreak setting, such as USD.

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