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## An Imported Case of Mumps — Alaska, 2014

### Introduction

Mumps is an acute viral illness caused by a paramyxovirus. The classic primary symptom of mumps is acute onset of tender, self-limited swelling of the parotid or other salivary glands (unilateral or bilateral), lasting at least 2 days.<sup>1,2</sup> The incubation period ranges from 12–25 days (typically 16–18 days). Nonspecific prodromal symptoms such as low-grade fever, myalgia, anorexia, malaise, and headache may precede parotitis; however, mumps may also present with nonspecific respiratory symptoms or as a subclinical infection. Pre-vaccine era complications included aseptic meningitis, encephalitis, deafness, and orchitis. In the post-vaccine era, severe complications are rare, but appear to occur more frequently among affected adults than children. The period of maximal communicability is 3 days before and after onset of parotitis; however, mumps virus has been isolated from 7 days prior to, and up to 14 days after onset of parotitis. Not all cases of parotitis are due to mumps infection; sporadic parotitis can be caused by parainfluenza virus, Epstein Barr virus, influenza A virus, Coxsackie A virus, echovirus, human immunodeficiency virus, or non-infectious causes.

Mumps vaccine was licensed in the United States in 1967.<sup>1,2</sup> In 1977, the Advisory Committee on Immunization Practices (ACIP) recommended one dose of mumps vaccine for all children older than 12 months. Following routine mumps vaccine use, the number of reported mumps cases decreased from >150,000 cases in 1968 to <3,000 cases in 1985. In 1989, outbreaks of mumps led the ACIP to recommend two doses of measles, mumps, and rubella virus (MMR) vaccine. In 2006, ACIP expanded these recommendations to include all school-aged children, students at post-high school educational institutions, health care personnel, and international travelers.<sup>1</sup> Although two doses of MMR vaccine is estimated to be 88% (range: 66–95%) effective in preventing mumps, cases can still occur in vaccinated persons—especially in crowded conditions.<sup>3</sup> Presumptive evidence of immunity to mumps includes documentation of age-appropriate mumps-containing vaccine, laboratory evidence of immunity, birth before 1957, or documentation of physician-diagnosed mumps.<sup>1</sup>

Mumps is no longer common in the United States, with an average of <500 cases reported annually; however, there have been several recently reported outbreaks, including outbreaks in at least four universities this year, resulting in 938 cases reported nationally during January 1 through July 26, 2014.<sup>3</sup> The last reported outbreak in Alaska was in 1995.<sup>4</sup> This *Bulletin* describes a recent case of imported mumps in Alaska, and summarizes changes to routine testing procedures.

### Case Report

On July 11, 2014, a 50-year-old female presented with left-sided parotitis, headache, jaw pain, and trismus following a few days' history of neck and back pain. During June 6–26, the patient was escorting a group of school-aged children to Japan. She stayed with a host family who reported that their daughter received a mumps diagnosis on June 21. The patient thought she had received MMR vaccinations as a child, but records were unavailable. Her health care provider contacted the Alaska Section of Epidemiology (SOE) and obtained buccal swab and serum samples for mumps testing. Mumps polymerase chain reaction (PCR) was positive and mumps immunoglobulin G (IgG) was negative. On July 18, the patient reported that symptoms were abating. All of the students traveling with this patient, as well as her household members, were up to date on their vaccinations and no evidence of secondary spread was identified.

### Laboratory Testing

Mumps can be confirmed by any of the following tests:

- isolating the virus using real-time PCR testing or standard viral culture from buccal or oral swab specimens;
- detecting mumps-specific serum IgM antibodies; or
- demonstrating a significant increase between acute and convalescent titers in mumps-specific serum IgG antibody titers using an enzyme immunoassay (EIA) test.<sup>1</sup>

In Alaska, clinical specimens can be routed to the Alaska State Virology Laboratory (ASVL) for testing. ASVL performs mumps IgG antibody EIA testing on acute and convalescent samples in-house, and routes specimens to a CDC contract laboratory for PCR testing. Viral culture is no longer routinely performed.<sup>5</sup> In persons who have received mumps vaccine, confirmation of mumps infection can be challenging because the duration of the IgM response and shedding is reduced, and IgG titers might already be elevated.<sup>3</sup>

### Discussion

Rapid reporting of mumps cases to public health authorities is critical to prevent community spread, as outbreaks continue to occur in the United States despite high vaccine coverage levels—especially on college campuses and in communities with low vaccination rates. Additionally, as this report demonstrates, mumps cases continue to be imported into the United States from other regions of the world. Although mumps vaccine is widely administered in most countries, the risk of exposure to mumps among travelers can be high in many countries. As such, Alaska health care providers should assure that all of their patients are age-appropriately vaccinated against mumps.

### Recommendations

1. Health care providers should promptly notify SOE of any suspected or confirmed cases of mumps by calling 907-269-8000 during work hours, or 800-478-0084 after hours. SOE staff will assist with referral for testing.
2. A buccal or oral swab specimen in universal transport medium and a serum specimen should be collected from all patients with suspected mumps, and submitted to ASVL.
3. Suspected or confirmed cases of mumps should be managed with both standard and droplet precautions and isolated for 5 days after the onset of parotitis.<sup>6</sup>
4. Children should be immunized against mumps with a 2-dose series of MMR. See the childhood vaccine schedule at: <http://www.epi.alaska.gov/id/iz/schedule/birth18.htm>
5. Adults born on or after 1957 are recommended to have at least 1 dose of MMR vaccine. Students in post-high school educational institutions and health care providers should receive 2 doses of MMR. See the recommended routine adult immunization schedule available at: <http://www.epi.alaska.gov/id/iz/schedule/adult.htm>
6. International travelers should confirm, prior to travel, that they are appropriately vaccinated against mumps.

### References

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