



BOSTON PUBLIC HEALTH COMMISSION
Communicable Disease Control Division
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Health Alert: Suspect Mumps in College Students

Summary: On April 15, 2009 the Boston Public Health Commission (BPHC) was notified of four cases of suspect mumps. All suspect cases are students at Northeastern University, and two reported recent travel to Ireland. All cases of confirmed or suspect mumps diagnosed in Boston should be reported immediately to the Boston Public Health Commission at (617) 534-5611.

BACKGROUND

On April 15, 2009, the Boston Public Health Commission was notified of four Northeastern University students who had received medical attention for unilateral parotid gland swelling. All four students are US born, and have documentation of receipt of two doses of mumps containing vaccine. However, two of the students reported recent travel to Ireland where a mumps outbreak is ongoing. Symptom onsets in the suspect cases ranged from 3/24/2009-4/14/2009.

SYMPTOMS AND DIAGNOSIS

Mumps is caused by a paramyxovirus which is spread through infected respiratory tract secretions. Mumps infection control requires droplet precautions. The incubation period is usually 16 to 18 days, but can range from 12 to 25 days. People are considered infectious from three days before until five days after the onset of parotid swelling, however virus has been isolated from saliva up to seven days prior to symptom onset.

The classic symptom of mumps is parotitis (usually bilateral), but nonspecific symptoms such as myalgia, anorexia, malaise, headache, and low-grade fever may precede the parotitis by several days. As many as 20% of infections are asymptomatic and nearly 50% are associated with non-specific or primarily respiratory symptoms, with or without parotitis.

Complications of mumps in children may include sensorineural hearing loss (estimated at 5 per 100,000 cases) and encephalitis (estimated to occur in <2 per 100,000 cases). Mumps meningoencephalitis occurs more frequently in adults. Orchitis occurs in up to 38% of post pubertal males, but rarely causes sterility. Mastitis is reported in 31% of females over the age of 15 years. Oophoritis and pancreatitis rarely occur.

Diagnostic tests for mumps include viral isolation from a buccal swab, urine, or spinal fluid; a significant increase between acute and convalescent titers in serum immunoglobulin (IgG); or a single positive mumps IgM antibody test. Buccal swabs should be obtained within 9 days of onset of symptoms (ideally within 5 days). 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. A urine sample can be collected up to 15 days after onset of symptoms. Serum for IgM testing should be obtained no sooner than three days after the onset of parotitis. This test remains positive for about one month, but may be **negative** in up to 50-60% of acute samples among patients who have been previously immunized. Therefore a negative IgM in a vaccinated person does not rule out disease.

RECOMMENDATIONS

A diagnosis of mumps should be suspected in anyone presenting with typical symptoms. Health care providers are encouraged to collect serum and urine specimens and a buccal swab for submission to the William A. Hinton State Laboratory Institute for mumps testing. Droplet and standard precautions should be followed when caring for suspect or confirmed cases. Any suspect case identified in Boston must be reported promptly to BPHC at phone number 617-534-5611. BPHC can assist providers in arranging diagnostic testing.

Mumps vaccine is routinely given as part of the MMR vaccine to all children at 12 to 15 months of age, with a second dose given at 4 to 6 years of age. Antibody to mumps develops in about 80% of all susceptible people after a single dose, and protection appears to be long lasting. Administration of MMR is not harmful if given to a person already immune to one or more of the viruses in the vaccine. Serious adverse reactions following MMR administration are rare.

BPHC recommends that health care facilities in Boston begin to determine the mumps immunity status of health care workers and offer vaccination with a mumps-containing vaccine to those without either serologic proof of immunity or documentation of two doses of a mumps-containing vaccine.

Health care providers should consider offering MMR vaccine to anyone without evidence of immunity, as indicated by either 1) laboratory evidence of prior mumps infection, 2) birth before 1957 or 3) at least one dose of a mumps containing vaccine. A second dose of a mumps containing vaccine should be provided to school-aged children, students at post-high school educational institutions, and persons in other groups considered to be at high risk of exposure.

REPORTING

Any suspected or confirmed cases of mumps diagnosed in Boston should be reported to the Boston Public Health Commission. Reporting forms and additional information for health care providers and for laboratories (including fact sheets) are available at: www.bphc.org/cdc