



Department of Health

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TO: Hospitals, Local Health Departments (LHDs), Providers, Universities

FROM: New York State Department of Health (NYSDOH), Bureau of Immunization

**HEALTH ADVISORY: MUMPS OUTBREAK – NASSAU COUNTY
MUMPS DIAGNOSIS, TESTING AND REPORTING**

Please distribute to the Infection Control Department, Emergency Department, Employee Health Service, Infectious Disease Department, Director of Nursing, Medical Director, Laboratory Service, University Health Services and all patient care areas.

SUMMARY

- The Long Beach area of Nassau County is currently experiencing a mumps outbreak. As of 09/07/16, 30 confirmed and 17 probable cases have been diagnosed. Multiple suspect cases are under investigation. The majority of cases were fully vaccinated with two doses of MMR vaccine. The median age of case patients is 25 years. Many of the patients are college age and are expected to return to universities in New York State and other states across the US. Symptom onsets have ranged from June 9, 2016 to August 26, 2016 with symptoms including jaw tenderness, malaise, anorexia, headache, low grade fever, and parotitis.

NYSDOH is requesting that all medical providers consider and test for mumps in patients with symptoms that are clinically consistent with mumps without an alternative diagnosis, regardless of a patient's vaccination status. Please refer to the NYSDOH Vaccine Preventable Disease Control Guidelines for more information at: http://www.health.ny.gov/prevention/immunization/providers/outbreak_control_guidelines.htm

- Mumps is becoming increasingly more common on college campuses in the United States. The disease has been reported on multiple college campuses in 2016 including the State University of New York at Buffalo, Indiana University, University of Kentucky, University of San Diego, University of Southern Maine, Saint Anselm College in New Hampshire and Harvard University.
- Siblings and friends of mumps cases returning to school may be up-to-date with two mumps containing vaccines as well as measures to prevent mumps, but they may not recognize their personal risk for infection or the potential for further spread of disease on campus.

- Patients suspected to have mumps should receive isolation for five days after onset of parotitis. **Any suspected case of mumps should be reported promptly to the LHD where the patient resides.** LHDs should notify the NYSDOH Bureau of Immunization to assist in arranging for both viral and serologic testing for laboratory confirmation of disease.
- Patients, who are at risk of being exposed to mumps and who are not fully immunized, should be offered measles, mumps and rubella (MMR) vaccination. If immunization status is not documented, then the patient should be considered susceptible to mumps and should be offered MMR vaccination.

MUMPS EPIDEMIOLOGY

Mumps is an illness characterized by the acute onset of unilateral or bilateral tender, self-limited swelling of the parotid or other salivary glands and lasting two or more days, not explained by another more likely diagnosis. Rare complications of mumps include orchitis, mastitis, oophoritis, deafness, and encephalitis. The infectious period for mumps is from two days before onset of symptoms through five days after symptoms appear. The incubation period for mumps from exposure to onset of illness ranges from 12-25 days.

Mumps is spread via large respiratory droplets. A contact is defined as an individual who had face-to-face contact, within three feet of a presumed mumps case, or an individual who had direct contact with the case's respiratory secretions.

Individuals who are not fully vaccinated against mumps are at the highest risk of infection. Vaccine post-licensure studies have shown that one dose of mumps containing vaccine is 78% effective and two doses are 88% effective. Individuals who receive two doses of MMR vaccine are about nine times less likely to get mumps than unvaccinated people who have the same exposure to mumps virus. Some people who receive two doses of MMR can still get mumps, especially if they have prolonged, close contact with someone who has the disease. Outbreaks have been seen in groups such as schools, colleges and camps. When infected, persons who are vaccinated against mumps have less severe illness than unvaccinated persons.

Please note that there are several other etiologies for parotitis such as parainfluenza virus types 1 and 3, influenza A virus, coxsackie A virus, echovirus, Epstein-Barr virus (EBV), enterovirus, lymphocytic choriomeningitis virus, human immunodeficiency virus, and other non-infectious causes such as drugs, tumors, immunologic diseases, and obstruction of the salivary duct. However, in light of recent outbreaks, it is important to rule out and report suspect mumps cases.

MUMPS DIAGNOSIS

The diagnosis of mumps is usually suspected based on clinical manifestations, in particular the presence of parotitis. Though other viruses can cause parotitis, *in an outbreak setting* the cause is almost always mumps. The best laboratory method for mumps diagnosis is to order a mumps polymerase chain reaction (PCR) test, which should be collected by a swab of the buccal mucosa. If virus isolation is attempted, the specimen should be collected within the first three days of illness. Diagnosis can be supported by finding a positive mumps IgM antibody. In persons who were previously immunized against mumps, a positive IgM may not be seen.

Lab specimens should always be collected and tested to confirm mumps. The local health department should contact the NYSDOH Bureau of Immunization to arrange for appropriate viral and serologic laboratory testing for disease confirmation.

- **PCR testing** from fluid collected and tested from the parotid duct or other affected salivary gland ducts is the preferred method to help establish a mumps diagnosis. **Parotid duct swabs yield the best viral sample.** This is done by massaging the parotid gland for approximately 30 seconds prior to swabbing the parotid duct, so that the specimen contains the secretions from the parotid or other salivary duct glands. Please refer to the CDC link below for specimen collection techniques. Efforts should be made to obtain the specimen using viral medium as soon as possible after onset of parotitis. Clinical specimens should ideally be obtained within three days and not more than eight days after parotitis onset.
- **Serology specimens for mumps IgM** should be collected at the acute presentation. Please note, serum IgM may be negative in up to 50-60% of acute serum samples among patients who have been previously immunized. A diagnosis of mumps in a vaccinated person should not be ruled out on the basis of a negative IgM alone. A repeat specimen can be drawn ≥ 10 days after parotitis onset and may improve the ability to detect IgM in previously vaccinated persons. However, those with a history of mumps vaccination may not have detectable IgM regardless of the timing of specimen collection.

REPORTING

Clinically suspect cases of mumps must be reported to the LHD. Reports should be made at the time of initial clinical suspicion. If you are considering the diagnosis of mumps and are ordering diagnostic testing for mumps, then you should report the case at that time. The LHD will also assist in arranging for appropriate laboratory testing for disease confirmation.

RESOURCES

NYSDOH Outbreak Control for Vaccine Preventable Disease (this includes “When Mumps is Mumps”) http://www.health.ny.gov/prevention/immunization/providers/outbreak_control_guidelines.htm

Centers for Disease Control and Prevention – Clinical Questions and Answers <http://www.cdc.gov/mumps/hcp.html>

Illustration of Parotid Gland and Instructions for Collection of Buccal Fluid <http://www.cdc.gov/mumps/lab/detection-mumps.html>