



<b>DATE:</b>	February 24, 2017
<b>TO:</b>	Health Alert Network
<b>FROM:</b>	Karen M. Murphy, PhD, RN, Secretary of Health
<b>SUBJECT:</b>	<b>Guidance for Clinicians on Mumps Diagnosis, Testing and Reporting</b>
<b>DISTRIBUTION:</b>	Statewide
<b>LOCATION:</b>	Statewide
<b>STREET ADDRESS:</b>	Statewide
<b>COUNTY:</b>	Statewide
<b>MUNICIPALITY:</b>	Statewide
<b>ZIP CODE:</b>	Statewide

**This transmission is a “Health Advisory” provides important information for a specific incident or situation; may not require immediate action.**

**HOSPITALS:** PLEASE SHARE WITH ALL MEDICAL, PEDIATRIC, INFECTION CONTROL, NURSING AND LABORATORY STAFF IN YOUR HOSPITAL

**EMS COUNCILS:** PLEASE DISTRIBUTE AS APPROPRIATE

**FQHCs:** PLEASE DISTRIBUTE AS APPROPRIATE

**LOCAL HEALTH JURISDICTIONS:** PLEASE DISTRIBUTE AS APPROPRIATE

**PROFESSIONAL ORGANIZATIONS:** PLEASE DISTRIBUTE TO YOUR MEMBERSHIP

As on February 20, there has been an appreciable increase in the number of confirmed and probable cases of mumps reported to the Pennsylvania Department of Health (PADOH). Several of the cases have been associated with the Pennsylvania State University. The PADOH is sharing information about mumps with area providers.

The PADOH urges providers to obtain the following specimens from patients who present for care with parotitis (swelling of their salivary glands) for which there is no other likely diagnosis. Specimens should be sent to the PA Bureau of Laboratory (BOL):

- Oral or buccal swab after parotid massage for polymerase chain reaction (PCR) testing
  - Synthetic swabs are preferred (alginate or cotton swabs will be rejected)
  - Use viral transport media ○ Maintain at 4<sup>0</sup> C and ship on cold packs within 24 hours of collection
  
- Urine for polymerase chain reaction testing
  - Not as useful as oral specimens
  - May not be positive until >4 days after symptom onset
  - Collect minimum of 50 mls in sterile container
  - Centrifuge for 15 minutes at 4<sup>0</sup> C

- Re-suspend sediment in viral transport media and ship on cold packs within 24 hours of collection or
- Freeze at -70<sup>0</sup> C and ship on dry ice
- Serum for mumps IgM and IgG testing
  - Acute phase serum as soon as possible; convalescent serum 2-3 weeks later
  - Collect 7–10 ml of blood in a red-top or serum-separator tube (SST). If SST used centrifuge for 10 minutes at 4<sup>0</sup> C before shipment.

and

- Nasopharyngeal swab for polymerase chain reaction testing of respiratory viral pathogens (to include influenza and parainfluenza)
  - Parotitis has sometimes been reported in persons who are infected with influenza (<https://www.cdc.gov/flu/about/season/health-care-providers-parotitis.htm>)

Suspected cases of mumps should be reported to the appropriate local public health jurisdiction and entered into PA-NEDSS. If you do not have a PA-NEDSS account, email [PA-NEDSS@pa.gov](mailto:PA-NEDSS@pa.gov) to set one up. Cases can also be reported by calling the PADOH at 1-877-PA-HEALTH (1-877-724-3258).

#### **MUMPS CLINICAL MANIFESTATIONS AND TRANSMISSION**

Mumps is an acute viral infection characterized by a non-specific prodrome including myalgia, anorexia, malaise, headache and fever, followed by acute onset of unilateral or bilateral tender swelling of parotid or other salivary glands. In unvaccinated populations, an estimated 30-70% of mumps infections are associated with typical acute parotitis. However, 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 infection can include deafness, orchitis, oophoritis or mastitis (inflammation of the testicles, ovaries, or breasts respectively), pancreatitis, meningitis/encephalitis, and spontaneous abortion. With the exception of deafness, these complications are more common among adults than children.

Transmission of mumps virus occurs by direct contact with respiratory droplets, saliva or contact with contaminated fomites. The incubation period is generally 16-18 days (range 12-25 days) from exposure to onset of symptoms. Mumps virus has been isolated from saliva from between two and seven days before symptom onset until nine days after onset of symptoms. Mumps is most infectious from two days before to five days after symptom onset, but asymptomatic people can transmit disease.

#### **MUMPS PREVENTION**

The Advisory Committee on Immunization Practices (ACIP) recommends that:

- (1) all preschool aged children 12 months of age and older receive one dose of measles-mumps-rubella vaccine (MMR);
- (2) all school-aged children receive two doses of MMR; and
- (3) ensure that all adults have evidence of immunity against mumps (5).

As noted below, two doses of mumps vaccine are more effective than a single dose. Consequently, during outbreaks and for at-risk populations, ensuring high vaccination coverage with two doses is encouraged.

## CONTROL OF MUMPS OUTBREAKS

The main strategies for controlling a mumps outbreak are to define the at-risk population and transmission setting, identify and isolate suspected cases, and to rapidly identify and vaccinate susceptible persons or, if a contraindication to MMR vaccine exists, to exclude susceptible persons from the setting to prevent exposure and transmission. Specific strategies are listed below.

1. **Offer MMR vaccine to persons without evidence of immunity.** Evidence of immunity includes physician diagnosis or laboratory evidence of mumps infection, birth before 1957 or one dose of MMR vaccine. For pre-school aged children, the first MMR dose should be administered as close to age 12 months as possible. Although birth before 1957 is usually considered proof of immunity, during an outbreak, vaccination can be considered for this age group if the epidemiology of the outbreak suggests that they are at increased risk of disease. Since two doses of MMR vaccine is more effective than one dose for preventing mumps, **a second dose of MMR vaccine is recommended for the following groups: health care workers, school-aged children, students at post-high school educational institutions and other age groups considered at high risk of exposure.**
2. Surveillance for mumps should be enhanced in all affected areas for persons with parotitis or other salivary gland inflammation. Enhanced surveillance should continue for 50 days (two times the maximum incubation period) after the date of illness onset in the last identified case. CSTE approved case definitions and case classifications for mumps are available at <https://www.cdc.gov/nndss/conditions/mumps/case-definition/2012/>.
3. **Persons with suspected mumps should be tested and reported immediately to local public health officials.** Information on collection and testing of clinical specimens for mumps can be found at <http://www.health.pa.gov/Your-Department-of-Health/Offices%20and%20Bureaus/Laboratories/Documents/Bureau/DOS%20BOL-1-V2.pdf> and <http://www.cdc.gov/mumps/lab/qa-lab-test-infect.html>. Testing is essential as not all cases of parotitis are mumps, although mumps is the only known cause of epidemic parotitis.
  - a. With previous contact with mumps virus either through vaccination (particularly with 2 doses) or natural infection, serum mumps IgM test results may be negative; immunoglobulin G (IgG) test results may be positive at initial blood draw; and viral detection in RT-PCR or culture may have low yield if the buccal swab is collected too long after parotitis onset.
  - b. Therefore, **mumps cases should not be ruled out by negative laboratory results.** Serologic tests should be interpreted with caution, as false positive and false negative results are possible with IgM tests.
4. **Persons suspected of having mumps should be isolated for five days after symptom onset.** In health care settings, the use of **respiratory precautions** is recommended.
5. **Exclusion of persons without evidence of immunity to mumps from institutions such as schools and colleges affected by a mumps outbreak** (and other, unaffected institutions judged by local public health authorities to be at risk for transmission of disease) should be considered.

The period of exclusion for those that remain unvaccinated should be **for at least 25 days after the onset of parotitis in the last person with mumps in the affected institution.**

Categories of Health Alert messages:

**Health Alert:** conveys the highest level of importance; warrants immediate action or attention.

**Health Advisory:** provides important information for a specific incident or situation; may not require immediate action.

**Health Update:** provides updated information regarding an incident or situation; unlikely to require immediate action.

This information is current as of February 24, 2017 but may be modified in the future.
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