

CONTAGIOUS COMMENTS

Department of Epidemiology

MUMPS (Infectious Parotitis)

GENERAL INFORMATION:

The Department of Epidemiology at The Children's Hospital has developed this document to provide TCH institution specific guidelines to help TCH and our community providers provide care for their patients and to prevent the transmission of mumps within the healthcare setting. Our guidelines may be different from recommendations from the Colorado Department of Health and Environment (CDPHE).

The state of Iowa has been experiencing a large outbreak of mumps that began in December 2005. The majority of cases are occurring among persons 18-25 years of age, many of whom are vaccinated. Additional cases of mumps, possibly linked to the Iowa outbreak, are also under investigation in eight neighboring states currently totaling greater than 1000 cases. Thus far, Colorado has not had any confirmed cases related to this outbreak, although several suspect cases are under investigation.

Mumps Clinical Manifestations

- 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
- Complications include deafness, orchitis, oophoritis, or mastitis, pancreatitis, meningitis/encephalitis, and spontaneous abortion.
 - **Parotitis** or swelling of the parotid, sublingual, or submaxillary salivary glands is the classic presentation of mumps.
 - **Respiratory symptoms** occur in approximately 40-50% of mumps infections, particularly in children under 5 years of age.
 - **Orchitis** occurs in 20-30% of affected postpubertal males as a complication of mumps.
 - **Aseptic meningitis** may occur in up to 10% of mumps cases
 - **Pancreatitis**, usually mild, occurs in 4% of cases.
 - **As many as 20% of infections are asymptomatic.**

Transmission

- By direct contact with respiratory droplets, saliva, urine or contact with (freshly) contaminated fomites. (Anyone in direct contact with the patient [touching the patient or the immediate patient environment] without

the use of personal protective equipment would be considered "exposed").

- 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 2 – 7 days before symptom onset until 9 days after onset of symptoms.

INFECTION CONTROL INFORMATION (*What you need to know to protect yourself and to prevent transmission of infection!*):

I. Case Definition:

- A. **Suspect Case:** acute onset of unilateral or bilateral tender swelling of parotid or other salivary glands; also consider patients with orchitis, aseptic meningitis as suspects for isolation and testing purposes.
- B. **Confirmed Case:** positive IgM serology titer for mumps antibody, positive virus culture for mumps virus, or positive RT-PCR for mumps virus.

II. Management of Suspected or Confirmed Cases:

- A. Screen all patients for symptoms before any direct contact.
- B. All caregivers should begin **droplet precautions** immediately for any patient with respiratory symptoms, parotitis (**THINK MUMPS!**), or meningitis symptoms.
- C. Call microbiology (x6703) to notify about specimens being collected. (See Laboratory Tests below.)
- D. Isolation precautions or exclusion from school and other social contacts should be continued for suspect or confirmed cases until mumps is ruled out or until 9 days after onset of symptoms.

III. Management of Exposed individuals:

- A. **Exposure Definition:** No droplet precautions used and direct, face-to-face contact (within 3 feet) for more than 1 minute with a suspect case and/or contact with their secretions or contaminated surfaces.
- B. Call epidemiologist-on-call (ask TCH operator; dial "0") to report a suspected case and any exposures based on the definitions provided.
- C. The department where exposure occurred shall complete the attached exposure worksheet by recording all personnel that have been exposed.
 1. All exposed personnel should be sent to Employee Health Services for a mumps titer (IgG) blood testing.

- a. Those with positive mumps IgG titer will be considered immune. No work restrictions are required.
- b. Those without demonstrated immunity will be given one dose MMR vaccine and work restrictions will be determined.

D. All personnel that meet the exposure criteria will be restricted from working as follows:

1. **From days 5-26 following the exposure OR**
2. **Until proven immune by IgG titer for mumps antibody OR**
3. **Until mumps infection has been ruled out in the suspect case.**
4. **If the employee demonstrates signs/symptoms of illness consistent with mumps infection (including prodrome fever, myalgia, malaise, headache), they will be restricted from duty until mumps is ruled out or after 9 days following onset of symptoms.**

- E. If mumps is reported in Colorado we ask employees who have any symptoms consistent with mumps to stay home, call Employee Health for additional advice regarding possible testing and work restrictions, and contact their primary care provider for evaluation.

IV. Laboratory Tests: * *This information has been updated. Please see the May 2006 Special Edition.*

- A. Persons suspected of having mumps should be tested and reported immediately. Testing is essential as not all cases of parotitis are mumps, although mumps is the only known cause of epidemic parotitis.

B. Specimen Collection to Confirm Mumps Infection (Patient testing)

1. Blood specimen (3 ml of whole blood in red top or serum separator tube) for mumps IgM testing.
2. Urine specimen (2-3 ml) for routine viral culture; note "Rule Out Mumps" on requisition. Refrigerate if transport is longer than 1 hour.
3. Buccal swab specimen for viral culture and PCR. Collect using Dacron swab in 2-3 ml of viral transport medium from collection kit. Obtain kit from TCH Microbiology Laboratory (303-861-6703) or use any liquid viral transport kit. Keep cold/transport cold. To collect specimen, massage the parotid gland area (space between the cheek and teeth just below the ear) for about 30 seconds prior to collection of buccal secretions. The parotid duct drains in this space near the upper rear molar. Place swab in viral transport medium.
4. Send to the attention of "TCH Microbiology Laboratory Supervisor." Note to TCH Specimen Processing: Do not log in. Forward specimens to Microbiology Laboratory.
5. **TCH Personnel Immunity Testing:** Mumps IgG requires 3ml of whole blood in a red top tube. Turnaround time is 2 days.

Note: Buccal swab culture/PCR and IgM serology will be performed at CDC/CDPHE. Turnaround time for

these tests is unknown at this time. Phone TCH Microbiology Laboratory for current information (303-861-6703). Urine culture is performed at TCH – time to final negative result is 2 weeks. Mumps IgG immune screen is sent out – results available in 2-3 days.

WHO TO CALL:

Epidemiology must be notified as soon as any care provider suspects a case of mumps. We may be reached by calling the **TCH operator "0" (303-861-8888 off campus) and asking for the Epidemiologist-On-Call**, 24 hours a day, seven days a week. We will be responsible for notification of the local and state public health departments.

Microbiology lab (x6703) must be notified of specimens being collected to rule-out mumps.

Employee Health Services (EHS) (861-6577) must be notified that exposures have occurred so they may direct immunity testing and work placement.

PREGNANT CAREGIVERS:

- Pregnant caregivers do not need to be restricted from caring for a patient with mumps.
- Adhere to Droplet Precautions and, as always, be vigilant with handwashing.
- Anyone who is pregnant should not receive MMR vaccine.

ADVICE FOR IMMUNOCOMPROMISED or NON-IMMUNE PERSONS:

- Avoid crowded places during outbreak situations.
- Avoid contact with any suspected or confirmed cases of mumps.
- Contact your care provider if you do get exposed to mumps.
- While there is no treatment or prophylaxis for mumps exposures or disease, the issue of quarantine will need to be addressed.

For additional information you may contact the Department of Epidemiology at The Children's Hospital at 303-861-6072.

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