

Lab Testing for Mumps at the MDH Public Health Laboratory

Clinical case definition

Consider laboratory testing for patients who meet the clinical case definition for mumps:

- Acute parotid gland or other salivary gland swelling (sublingual, submandibular) and/or
- Orchitis or oophoritis unexplained by a more likely diagnosis.

Providers should ask about exposure, travel (past month) and MMR history. This helps MDH assess suspicion level, but providers should not rule-out a suspect diagnosis based on those factors.

Specimen collection

Specimens for PCR¹ (preferred):

- Collect specimens for PCR as soon as mumps is suspected (maximum 9 days after swelling onset). Consider day 0 as swelling onset date:
 - Day 0-5 of swelling: buccal swab
 - Day 6-9 of swelling: buccal swab and urine
- Send PCR specimens to the MDH Public Health Laboratory (MDH-PHL).

Serum for mumps IgM:

Mumps IgM can be done in addition to PCR but should not be the only method used as false positives are common.

- Collect serum as soon as mumps is suspected.²
- Send serum for measles IgM to your facility's usual reference laboratory.
 - Follow your reference lab's instructions for serum collection and submission.

Specimen submission to MDH

- **Complete** a "Clinical Testing and Submission Form" from [Forms for the Infectious Disease Laboratory](http://www.health.state.mn.us/diseases/idlab/forms.html) (www.health.state.mn.us/diseases/idlab/forms.html).
 - Each specimen requires its own form.
 - Completely fill out the form and indicate which test is requested.
- **Label** all tubes/containers with:
 - Patient name/date of birth
 - Date specimen collected
 - Specimen type
- **Notify MDH** that specimens are being sent.
 - Use the [mumps reporting form](http://www.health.state.mn.us/diseases/mumps/hcp/mumpsform.html) (www.health.state.mn.us/diseases/mumps/hcp/mumpsform.html) **or**
 - Call 651-201-5414 or toll-free at 1-877-676-5414 and provide suspect case details:
 - Patient name/date of birth
 - Address/phone number
 - Clinical presentation
 - Known exposure, travel or MMR history
- **Keep specimen(s) cold:** Store/ship specimens at refrigeration temperature (2-8°C) on ice packs.
- **Send** via overnight shipping to arrive Monday-Friday between 8 a.m. and 4:30 p.m. to:
MDH Public Health Laboratory
Attn: Biological Accessioning
601 Robert St. N.
St. Paul, MN 55155-2531
- For help with packaging and shipping, call MDH-PHL Biological Accessioning at 651-201-4953.
- Note: If mumps is strongly suspected, the health care provider should advise exclusion from all activities, including child care, school and work through 5 days following onset of swelling.

Swabs and media

For mumps PCR, a swab in transport media should be sent. Dry swabs are not acceptable.

Appropriate swabs and media:

- BBL Culture Swab, Culturettes, Dacron swabs
- Viral transport medium (VTM), Universal transport medium (UTM), M5, M4, Minimum Essential Medium (MEM), Saline, Balanced salt solutions (BSS), Sterile isotonic solutions, Phosphate buffered salines (PBS), Liquid Stuart's Medium

Inappropriate swabs and media:

- Wood-tipped applicators, Cotton-tipped swabs, Calcium-alginate tipped swabs, Charcoal swabs, Gel swabs
- Anaerobic media

Collection instructions: PCR

A buccal swab is preferred for mumps PCR. A throat swab is also acceptable but not preferred.

Buccal swab: Massage the buccal cavity (the space near the upper rear molars between the cheek and the teeth) for 30 and swab the area; obtain a generous amount of saliva. Place swab in a sterile tube containing 2-3 ml transport media.

Throat swab: Vigorously swab tonsillar areas. Use tongue blade to depress tongue to prevent contamination of swab with saliva. Place swab into 2-3 ml of transport media.

Urine specimen: Collect 10-40 ml of urine in a sterile urine specimen container. Have patient void directly into container, collecting from the first part of the urine stream if possible. First-morning voided specimens are ideal, but any urine collection is adequate.

Results and turnaround

- Results for testing done at MDH-PHL will be sent via fax to the submitting laboratory.
- Turnaround time for PCR results is typically 1-2 business days after receipt of specimen(s).
- Culture may be done on a specimen with negative PCR results. Turnaround time for culture is a minimum of 3 weeks.
- The submitting facility is responsible for relating results to patients. MDH cannot provide results to patients.

Additional information

For more information about clinical features and vaccine information, visit [Mumps Information for Health Professionals](http://www.health.state.mn.us/diseases/mumps/hcp/index.html) (www.health.state.mn.us/diseases/mumps/hcp/index.html).

Footnotes

1. PCR: At MDH-PHL, reverse transcriptase polymerase chain reaction (RT-PCR) is used to detect viral RNA in a sample.
2. The optimal time to collect serum is at least 96 hours after swelling onset (so IgM has time to rise); however, it is crucial to get PCR specimens as soon as possible after swelling or symptom onset, so collect both serum and PCR specimens at the same time.

Vaccine Preventable Disease Section
625 Robert St. N.
PO Box 64975
St. Paul, MN 55164-0975
651-201-5414
www.health.state.mn.us/immunize

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To obtain this information in a different format, call: 651-201-5414. Printed on recycled paper.