



## Mumps Virus Sample Collection Guidance

### General information:

This document provides sample collection instructions for Mumps virus testing. For any questions regarding specimen collection or shipment for Mumps testing, please contact the DC Public Health Laboratory (PHL) at [DC.PHL@dc.gov](mailto:DC.PHL@dc.gov).

### Buccal swab specimen:

- Collect oral or buccal swab samples as soon as Mumps disease is suspected. RT-PCR has the greatest diagnostic sensitivity when samples are collected at first contact with a suspected case.
- Buccal or oral swab specimens are obtained by massaging the parotid gland area for 30 seconds prior to swabbing the area around Stensen's duct.
- Synthetic flocked swabs with a plastic staff are recommended for the collection of throat specimens. If you do not have flocked swabs than any other synthetic swab with a plastic staff will work. **Do not use cotton swabs** or any swab with a wooden staff.
- After collection using aseptic techniques place the swabs in 2 mL of viral transport medium (VTM).
- Label the tube with the patient's name (last, first), date of birth, patient ID, date and time of collection, and specimen type (swab).
- Store the tube with the swab and VTM in a 4°C refrigerator and contact DC PHL within 24 hours for a courier pick-up (see courier request section below). If there is a delay in shipment, the sample is best preserved by freezing at -70°C or at a minimum a -20°C freezer.

### Serum specimen:

- The first (acute-phase) serum sample should be collected as soon as possible upon suspicion of Mumps disease for serology testing. In some cases, the IgM response is not detectable until 5 days after symptom onset.
  - **Note:** if the patient previously received the MMR vaccine they will have detectable IgG levels.
- Collect two tubes of serum (containing NO anticoagulant or preservative) with at least 6 milliliters (mL) of blood per tube (e.g., red top, tiger top, speckle top, gold top, or other serum separator tube). Do NOT use any blood collection tubes containing anticoagulants or preservatives (e.g., green top, yellow top, or purple top).
- After collection of whole blood allow the blood to clot by leaving it undisturbed in the laminar flow hood for 15 – 30 minutes, but not longer than 1 hour. **NOTE:** Please be sure to follow blood collection tube manufacturer's instructions on how to properly allow for clot formation, if different than these instructions.



- Promptly (within 1 hour) centrifuge serum according to manufacturer's instructions. Use of serum separator tubes (SST) is recommended.
- A minimum of 2mL of serum is recommended for each tube of blood drawn.
- If a SST is not used then the serum must be transferred to a sterile tube. Using sterile laboratory technique, transfer the serum into a sterile tube using a sterile transfer pipette. The sterile tube should then be sealed in parafilm to prevent spillage. The transfer pipette should be discarded in a biohazard bag.
  - **Caution:** Do not freeze SST for shipping. Freezing will cause hemolysis and hemolyzed specimen will be unsatisfactory for testing.
- Label the tube with the patient's name (last, first), date of birth, patient ID, date and time of collection, and specimen type (serum).
- Serum samples are preferred to be stored in a 4°C refrigerator but must be delivered to the DC PHL within 72 hours.
- Specimens that are hemolyzed or not spun down will be rejected and not tested.

#### Urine specimen:

- Urine samples have not been as useful as buccal and oral specimens for virus isolation or detection of Mumps RNA. They may not be positive for Mumps virus until >4 days after symptom onset.
- A urine sample needs to be collected the same visit as the buccal swab and sent for testing. Urine samples alone will not be tested.
- Collect a minimum of 50 mL of urine in a sterile screw-top container and process by centrifuging at 2500 x g for 15 minutes at 4°C.
- Pour off the supernatant into a container and discard. Be careful not to disturb the sediment at the bottom. Then use a sterile transfer pipette to add 2 mL of viral transport medium and resuspend the sediment.
- Label the tube with the patient's name (last, first), date of birth, patient ID, date and time of collection, and specimen type (urine).
- Place the sealed urine container in a specimen transport bag; seal the bag. Then place the sealed transport bag into a second specimen transport bag with the same patient's serum specimens. Seal the second (outer) bag containing both urine and serum specimens. Place the test requisition form in the sleeve of the outer bag.
- Urine samples are to be stored in a 4°C refrigerator unless it is unable to be delivered to the DC PHL within 48 hours at which point it should be stored in an ultra-low temperature freezer and maintained at -70°C while awaiting sample pick-up by the DC-PHL courier. If a -70°C freezer is unavailable then samples may be stored in a -20°C freezer until they are ready for a courier pick-up.
- Specimens that leak will not be tested.



### **Specimen labelling:**

Please be sure to properly label **ALL** specimens. Failure to properly label a specimen will result in rejection and the specimen will not be tested. Specimens **must** be labeled with:

- Patient's first and last name
- Patient's date of birth
- Patient's ID
- Date and time of collection
- Specimen type (e.g., serum, urine, CSF, amniotic fluid)

All information on the specimen labels must **exactly** match the information on the PHL chain of custody and CDC 50.34 form, including the spelling of the patient's first and last names and date and time of collection. Specimens received with discrepant information on the labels and forms will not be tested.

### **REQUIRED DOCUMENTATION FOR MUMPS TESTING**

- DC Public Health Laboratory Chain of Custody form
- CDC 50.34 form

Please be sure to properly fill out the CDC 50.34 form. Failure to properly complete the 50.34 form may result in rejection or delays in testing. All 50.34 forms for Mumps testing are required to be electronically completed (written forms will not be accepted) and have the following information:

- Test requested (Mumps detection (PCR) and genotyping CDC-10241 OR Mumps serology CDC-10245)
- Patient's first and last name
- Patients date of birth
- Patient's ID
- Date and time of collection
- Submitter contact information with fax and email address
- Specimen matrix
- Onset date of symptoms (parotitis or jaw swelling)
- MMR vaccination history (dates if known)

### **\*Specimen storage and shipping:**

- All buccal swab and urine specimens (except formalin fixed tissues and CSF) should be stored at  $-70^{\circ}\text{C}$  or at a minimum of  $-20^{\circ}\text{C}$  if not picked up within 72 hours (e.g., sample collection was completed on a Friday afternoon and pick-up will not occur until Monday).
- Buccal swab and urine specimens not stored at a minimum of  $-20^{\circ}\text{C}$  need to arrive at the DC PHL within 72 hours for testing to be accepted. If these specimens arrive after 72 hours and were not frozen at  $-20^{\circ}\text{C}$ , then it may be rejected.



- If a freezer is not available at your facility (either -70°C or -20°C), please store specimens in the refrigerator at 4°C and indicate this on the courier pick-up email.
- If a refrigerator or freezer is not available at your facility, please indicate this on the courier pick-up email and indicate that this is an **URGENT** request for Mumps specimen pick-up. A courier will need to be dispatched to you immediately to pick up the specimens.
- **NOTE:** The DC-PHL is only opened from Monday thru Friday from 9am to 5pm, and closed for all federal holidays. Therefore if a refrigerator or freezer is not available at your facility and a patient is scheduled to come in on a Friday or before a holiday it is recommended to schedule patient collection dates to ensure the specimen is received by the DC-PHL.
- **NOTE:** It is important that frozen samples not thaw during shipping. To prevent this, be sure to ship with dry ice and follow proper Department of Transportation (DOT) and International Air Transport Association (IATA) shipping regulations. If no dry ice is available at your facility, please indicate this on the courier pick-up request email that is sent to [DC.PHL@dc.gov](mailto:DC.PHL@dc.gov).
- Specimens that are deemed to be improperly stored, packaged, shipped, and/or labelled may be rejected at the discretion of the DC Public Health Laboratory.

#### Requesting a Courier:

When all samples have been collected and forms properly filled out a “Ready for pick up” courier request email should be sent to [DC.PHL@dc.gov](mailto:DC.PHL@dc.gov) using the below email template:

- Sample type(s) (e.g. stool, urine, sputum):
- Sample storage (e.g. Refrigerated or Frozen (-20C or -80C), please indicate for each sample type:
- All required forms are properly completed (CDC 50.34 form, PHL Chain of Custody form) (please select one): YES or NO
- Name of point of contact for the courier:
- Direct phone number (including extension) for the courier to contact to call upon arrival (do not give the main/general number):
- Specimen pick-up address:
- Business hours when the sample can be picked up:
- Any additional instructions for specimen pick-up:

**Note:** If the proper paperwork is not complete upon pick-up, the courier has the right to refuse the sample. Please do not email for pick-up until all forms are complete.

For questions regarding sample collection, storage, packaging, and shipping, please contact the District of Columbia Public Health Laboratory at (202) 481-3538.