Coronavirus Disease 2019 Specimen Submission Guide

Commercial Lab Testing is Available!
Commercial laboratories now have testing capacity. Approval from TDH is not needed before submission to a commercial laboratory. Follow instructions from commercial laboratories for specimen collection and submission.

This guidance should be used for specimen collection related to the ongoing Coronavirus Disease 2019 (COVID-19) outbreak. The Tennessee State Public Health Laboratory (SPHL) has capacity to test for the virus that causes COVID-19 (SARS-CoV-2). COVID-19 testing is being prioritized for specific populations at this time.

Specimens must have a Patient Under Investigation (PUI) ID before submission to the state laboratory*. If the below instructions are not followed, there is no guarantee the specimen will be tested and a delay in receiving results is expected.

*For mass testing events (10 or more specimens) OR routine facility-wide testing please skip to step 2. Step 1 does not apply.

Step 1: PUI ID Request Form
- Obtain a PUI ID by completing this online form (https://is.gd/covidcalls).
  - Please ensure the patient’s name, date of birth, date of specimen collection are accurate and complete

<table>
<thead>
<tr>
<th>Patient Demographics:</th>
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</thead>
<tbody>
<tr>
<td>Please enter the patient’s name:</td>
</tr>
<tr>
<td>Julie Doe</td>
</tr>
<tr>
<td>Patient’s Date of Birth (DOB):</td>
</tr>
<tr>
<td>07-04-1777</td>
</tr>
<tr>
<td>Anticipated specimen collection date</td>
</tr>
<tr>
<td>06-09-2020</td>
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</tbody>
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- Please ensure the provider email is accurate. This email address will be used to obtain the PUI number and receive test results.
Step 2: Complete Necessary Forms

- TDH COVID-19 Specimen Submission Form TDH PH-4360. (Attachment #2) Complete **one form per specimen**.
  1. For “Test Requested” fill in “COVID-19 RNA PCR”
  2. Include these forms with the specimen shipment.
  3. Place the PUI ID on the top of the TDH PH-4360

- PUI Form (Attachment #3)
  1. Fill out this form as completely as possible, including the specimen collection information on the bottom left of the form.
  2. Make a copy for your records, include the original with the specimen shipment.
  3. Send a scan of the PUI form via secure email to [EP.response@tn.gov](mailto:EP.response@tn.gov) or FAX to 615-741-3857

PUI ID will be found on the page after submitting the form.
Step 3: Specimen Collection Guidance

*Please note, if you are using Aptima Multitest Swabs (pictured here follow the collection, storage, and transport guidance that is included in the supply kit box and that is listed on page 5

Specimens should be collected as soon as possible once testing at SPHL is approved. The SPHL testing protocol requires upper or lower respiratory specimens. If you are not using the Aptima Multitest swab as pictured above, the preferred specimen type is a single nasopharyngeal swab (NP swab).

Refrigerate specimens at 2-8°C and ship overnight to SPHL on ice pack. Specimens can be stored at 2-8°C for up to 72 hours after collection. If a delay in testing or shipping is expected, store specimens at -70°C or below.

As a reminder, healthcare personnel in contact with a suspected case or PUI should use standard precautions, contact precautions, droplet precautions, and eye protection (goggles or a face shield).

1. **Upper respiratory:**
   - **Nasopharyngeal swab** (NP swab):
     a. Use only synthetic fiber swabs with plastic or aluminum shafts (these are similar to swabs used for other viral testing; ex: flu, measles, RVP). These can be refrigerated viral collection swabs (example shown in Figure 1). Do not use calcium alginate swabs or swabs with wooden shafts, as they may contain substances that inactivate some viruses and inhibit PCR testing.
     b. Place swab immediately into a sterile tube containing 2-3 ml of viral transport media (ex. universal viral transport).
       - **Nasopharyngeal swab**: Insert a swab into the nostril parallel to the palate. Leave the swab in place for a few seconds to absorb secretions. Swab both nasopharyngeal areas with the same swab.
   - **Oropharyngeal swab** (e.g., throat swab): Swab the posterior pharynx, avoiding the tongue. Please note: NP swab is preferred rather than OP swab. Collection and storage instructions are otherwise the same as for an NP swab.
NOTE: While VTM/UTM remains the preferred transport media, the following alternative transport media can be used to collect and transport patient samples for molecular RT-PCR COVID-19 testing

- Liquid Amies-based transport media
- Supplies:
  - E-Swab by Copan (Catalogue # 481C and 482C) with regular or flex minitip applicator
  - Opti-Swab by Puritan (Catalogue # LA-117), swab included in kit (Catalog # 3317-H)
- Storage: Up to 72 hours at 4°C

If the above are not available, the following could be used to collect and transport samples for molecular RT-PCR sARS-CoV-2 assays:
- Dry swab in saline
- Supplies:
  - Copan: 501CS01, 503CS01, 516CS01, 518CS01 and 534CS01
- Storage: Up to 72 hours at 4°C, or frozen for longer storage.

- Nasopharyngeal wash/aspirate or nasal aspirate: Collect 2-3 mL into a sterile, leak-proof, screw-cap sputum collection cup or sterile dry container. Refrigerate specimen at 2-8°C and ship overnight to CDC on ice pack.

2. Lower respiratory:
- Sputum: Have the patient rinse the mouth with water and then expectorate deep cough sputum directly into a sterile, leak-proof, screw-cap sputum collection cup or sterile dry container.

- Bronchoalveolar lavage, tracheal aspirate: Collect 2-3 mL into a sterile, leak-proof, screw-cap sputum collection cup or sterile dry container.
Step 4: Specimen Storage and Labeling

1. Refrigerate all specimen types at 2-8°C after collection.

2. Label each specimen container with:
   - unique identifier (e.g., laboratory requisition number, patient name, medical records number, patient ID number)
   - TDH PUI ID
   - specimen type
   - collection date

3. Complete a TDH Specimen Submission Form for each specimen submitted (TDH PH-4360; Attachment #2)
Step 5: Specimen Packaging and Shipping

Ship specimens overnight to SPHL on ice packs. When shipping potential 2019-nCoV specimens, follow shipping regulations for UN 3373 Biological Substance, Category B. Additional shipping and packaging guidelines are available on CDC’s website.

Hospitals or birthing facilities that utilize the courier service for newborn screening may be able to utilize the courier for pickup of 2019-nCoV specimens. Reach out to Allison.Chan@tn.gov for specific instructions and requirements on how to use the courier system in place at your facility.

General Requirements

Packages must be of good quality, strong enough to withstand transport and must consist of three components: a primary receptacle(s), a secondary packaging, and a rigid outer packaging. Primary receptacles must be packed in secondary packaging so that, under normal transport conditions of transport, they cannot break, be punctured or leak their contents into the secondary packaging. Secondary packaging must be secured in outer packaging with suitable cushioning material. Any leakage of the contents must not compromise the integrity of the cushioning material or of the outer packaging.

Prepare the package (liquid substances):

1. Primary receptacle(s) must be leak-proof and must not contain more than 1 L.
2. Secondary packaging must be leak-proof.
3. If multiple fragile primary receptacles are placed in a single secondary packaging, they must be either individually wrapped or separated to prevent contact between them.
4. Absorbent material must be placed between the primary receptacle and the secondary packaging. The absorbent material, such as cotton wool, must be in sufficient quantity to absorb the entire contents of the primary receptacle(s) so that any release of the liquid substance will not compromise the integrity of the cushioning material or of the outer packaging.
5. The primary receptacle or the secondary packaging must be capable of withstanding, without leakage, an internal pressure of 95 kPa.
6. The outer packaging must not contain more than 4 L. This quantity excludes ice used to keep specimens cold.
7. Apply label to package:
   ● Print UN 3373 label.
   ● Include the name and telephone number of the person who will be available during normal business hours who knows the content of the shipment.
   ● Place the label on one side of the box and cover the label completely with clear tape (do not tape just the edges of the label).
8. Ship specimens overnight to SPHL on ice packs.
Tennessee Department of Health Laboratory Services  
Attn Virology  
630 Hart Lane  
Nashville, Tennessee 37216  
Phone: (615) 262-6300  
Fax: (615) 262-6393

9. Email TDH (Bryan.p.mason@tn.gov; covid.laboratory@tn.gov; Jessica.Schultz@tn.gov; EP.Response@tn.gov) with the FedEx tracking number or shipping confirmation when shipped to the SPHL.

![Figure 1 Example of an acceptable swab for NP collection](image-url)
UN 3373 Category B schematic for packaging