Utah Public Health Laboratory

Interim Guidelines for Clinical Specimens for Coronavirus Disease 2019 (COVID-19)

Specimens for SARS-CoV2 virus testing are received at UPHL, M-F 0800-1700 and Saturday/Sunday 0800-1600. Contact Specimen Receiving during working hours by calling UPHL at 801-965-2400 (main).

General Guidelines for COVID-19 Specimen Collection

Proper collection of specimens is the most important step in the laboratory diagnosis of infectious diseases. Standard Precautions should be taken in collecting and handling specimens that may contain SARS COV2 virus. All testing for COVID-19 should be conducted in consultation with a healthcare provider. The following are acceptable specimens for testing at Utah Public Health Laboratory:

- A nasopharyngeal (NP) specimen collected by a trained healthcare provider
- An oropharyngeal (OP) specimen collected by a trained healthcare provider
- A nasal mid-turbinate specimen collected by a trained healthcare provider or by a supervised or unsupervised onsite self-collection (using a flocked tapered swab), or self-collected at home following kit collection instructions
- An anterior nares specimen collected by a trained healthcare provider, or by a supervised or unsupervised onsite self-collection or self-collected at home following kit collection instructions (using a flocked or spun polyester swab)
- Nasopharyngeal wash/aspirate or nasal wash/aspirate (NW) specimen collected by a trained healthcare provider
- A saliva specimen collected by the person being tested, either at home or at a testing site under supervision. 1-5 mL of saliva in a sterile, leak-proof screw cap container. No preservative is required.
- Bronchoalveolar lavage collected by a trained healthcare provider. Collect 2-3 mL into a sterile, leak-proof, screw-cap sputum collection cup or sterile dry container.

- Sputum collected by a trained healthcare provider (induction of sputum is not recommended). Collect 2-3 mL into a sterile, leak-proof, screw-cap sputum collection cup or sterile dry container.

Swabs should be placed immediately into a sterile transport tube containing 2-3mL of either viral transport medium (VTM), Amies transport medium, phosphate buffered saline (PBS), or sterile saline. Use only synthetic fiber swabs with plastic shafts.

Specimens should be collected as soon as possible once a decision has been made to pursue COVID-19 testing, regardless of the time of symptom onset.

Store specimens at 2-8°C and ship to Utah Public Health Laboratory (UPHL) on ice packs. Label each specimen container with at least two unique identifiers. Frozen specimens should be shipped on dry ice with appropriate shipping protocols.

NOTE: Testing for other respiratory pathogens should be done as part of the initial evaluation by the provider.

Storage

Store specimens 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.

Notes on Collection

- Storage: 4-8 °C, -70 °C if >72 hours.
- Package as UN3373 Biological substance, Category B.
- Ship on wet ice/cold pack. Use dry ice if specimens must be frozen.
- Every specimen must have a Utah Public Health Laboratory requisition. **Please print clearly and fill out as completely as possible.** Use the Infectious Disease Request Form (https://uphl.utah.gov/wp- content/uploads/UPHL_TEST_REQUEST_FILLABLE.pdf)
- **Requisitions must include**:
    - Specimen identification.
    - Provider Code
    - Specimen source (please indicate if swabs are combined in a single tube)
    - Test name

Packing, Shipping and Transport

Many clinical laboratories provide specimen courier service. **Specimens in biohazard bags, which those couriers then place in closed containers in their vehicle for transport to a reference lab for testing are acceptable for UPHL.**

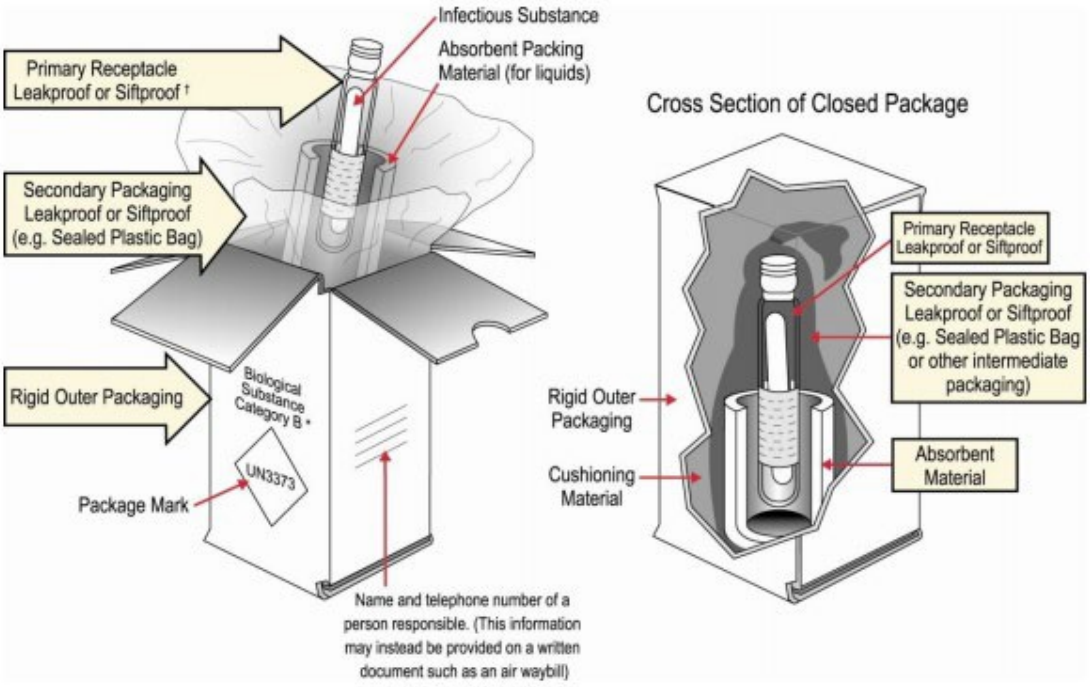
Specimens transported by motor vehicle fall under DOT regulations, which allows packaging exceptions for some UN3373 Biological substances, Category B. Patient specimens (not category A) are not regulated as infectious substances when transported by an "exclusive use courier." This means the shipper decides how to package it by following OSHA regulations, in-house protocols, and safe practices considering both the safety of the courier and personnel in the receiving lab, and protocols that ensure specimen integrity when using an exclusive courier.

For shipment by air transport, packaging, shipping, and transport of specimens must follow International Air Transport Association (IATA) Dangerous Goods Regulations. Follow shipping regulations for UN 3373 Biological Substance, Category B when sending potential COVID-19 specimens by transport other than “exclusive use courier” (Packing Instructions 650).

Issues with specimen integrity may affect testing, including:

- Misidentification
- Temperature
- Delay in receipt

UN 3373 Category B schematic for packaging



Use the above schematic to ship specimens by commercial transport and/or consult your courier service for their specimen packaging and shipping guidance.

Laboratory Guidance for Working with Potentially Infectious Materials

Clinical laboratories performing routine hematology, urinalysis, and clinical chemistry studies, and microbiology laboratories performing diagnostic tests on serum, blood, or urine specimens should follow standard laboratory practices, including Standard Precautions, when handling potential COVID-19 specimens. Appropriate physical containment devices (e.g., centrifuge safety buckets; sealed rotors) should be used for centrifugation. Ideally, rotors and buckets should be loaded and unloaded in a BSC.

Testing of specimens that involve any procedure with the potential to generate fine-particulate aerosols or droplets (e.g., vortexing) should be performed in a Class II Biological Safety Cabinet (BSC). In the case of lack of access to a BSC, or any procedures outside of a BSC eye and face protection (e.g. goggles, mask, and face shield) or other physical barriers (e.g. splash shield) should be used to minimize the risk of exposure to laboratory staff.

After specimens are processed, decontaminate work surfaces and equipment with appropriate disinfectants. Use EPA-registered hospital disinfectants with label claims to be effective against other respiratory pathogens, such as seasonal influenza and other human coronaviruses. Follow manufacturer's recommendations for use – dilution (i.e., concentration), contact time, and care in handling.

For COVID-19 laboratory waste, follow standard procedures associated with other respiratory pathogens, such as seasonal influenza and other human coronaviruses.

Specific Biosafety Guidelines

The following activities may be performed in BSL-2 facilities using standard BSL-2 work practices:

- Routine examination of bacterial and mycotic cultures
- Routine staining and microscopic analysis of **fixed** smears
- Final packaging of specimens for transport to diagnostic laboratories for additional testing. Specimens should already be in a sealed, **decontaminated primary container**.
- Inactivated specimens (e.g., specimens in nucleic acid extraction buffer)
- Pathologic examination and processing of formalin-fixed or otherwise inactivated tissues
- Molecular analysis of extracted nucleic acid preparations
- Electron microscopic studies with glutaraldehyde-fixed grids

The following activities involving manipulation of potentially infected specimens should be performed in a Class II BSC:

- **Aliquoting and/or diluting specimens**
- **Inoculating bacterial or mycological culture media**
- Performing diagnostic tests that do not involve propagation of viral agents in vitro or in vivo
- Nucleic acid **extraction procedures** involving potentially infected specimens
- **Preparation and chemical- or heat-fixing of smears for microscopic analysis**

Additional Resources:

- Biosafety in Microbiological and Biomedical Laboratories (BMBL) (6th edition)
- Nasal (Anterior Nasal) Specimen Collection for SARS-CoV-2 Diagnostic Testing
- Guidance for SARS-CoV-2 Point-of-Care Testing
- Guidance – Proposed Use of Point-of-Care (POC) Testing Platforms for SARS-CoV-2 (COVID-19)
- Information for Clinicians on Influenza Virus Testing
- Information on Collection of Respiratory Specimens for Influenza Virus Testing
- Interim Guidelines for Collecting, Handling, and Testing Clinical Specimens for COVID-19 (https://www.cdc.gov/coronavirus/2019-nCoV/lab/guidelines-clinical-specimens.html)