PHILIPPINE GENOME CENTER

COVID-19

COVID-19 Lab

Clinical Genomics Laboratory

SAMPLE COLLECTION GUIDELINES

UNIVERSITY OF THE PHILIPPINES
PHILIPPINE GENOME CENTER

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Sample Collection

SAMPLE COLLECTION

The following protocols are specifically designed for the diagnosis of patients suspected of having COVID-19 and are general recommendations. All procedures and documentations should still follow the standards of the collecting hospital / partner. For most general purposes, non-invasive sampling through nasopharyngeal (NP) or oropharyngeal (OP) swabs is recommended. Lower respiratory tract secretions require invasive methods to obtain, and are reserved for institutionalized patients in a facility capable of obtaining such samples. As such, the Philippine Genome Center Clinical Genomics Laboratory (PGC-CGL) only accepts NP / OP swabs for testing, the acceptable collection of methods of which are detailed here. All samples submitted to the PGC-CGL must adhere to the RITM-DOH operational guidelines for Hospital-Based and Free-Standing Laboratories for submission of samples to be tested from patients (see Table 1); otherwise, samples will be deemed unfit for analysis and rejected.

All PUIs must be placed in a separate isolation ward, and responders obtaining respiratory samples should observe universal precautions and don the appropriate PPE which includes but is not limited to:

- disposable lab gown
- two layers (inner and outer) non-sterile, clean nitrile/latex examination gloves
- N95 mask
- eye protection (e.g. goggles or face shield)

1. Nasopharyngeal (NP) and Oropharyngeal (OP) Swabs

Based on CDC Specimen Collection Guidelines

1. The following steps are only recommended. All procedures and documentations should still follow the standards of the collecting hospital / partner.

2. Due to the risk of aerosolization of the virus during performance of an NP/OP swab, all medical personnel who will perform the collection must wear appropriate PPEs described on the previous page.

3. For downstream analysis in COVID-screening, use only sterile Dacron or rayon swabs with plastic shafts. DO NOT use calcium alginate swabs or swabs with wooden sticks, as they may contain substances that inactivate some viruses and inhibit some molecular assays.

4. Ideal sample specimen involves obtaining both NP and OP swabs placed in the same collection receptacle to increase viral yield. NP swabs are preferred over OP swabs in the case that only the former is available. Sole OP swab samples are acceptable if materials for performing an NP swab are not available.

5. **NP swab collection**: Inform the patient of the procedure to be done. Gently insert the swab into the nares following the floor of the nasal cavity posteriorly until resistance is encountered. Avoid tilting the swab left or right, as this may result in trauma and bleeding. Once inserted, gently rub and roll the swab in place. Allow several seconds for the swab to absorb secretions before extracting it from the patient. Pull the swab out briskly, but not abruptly, to minimize discomfort.

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6. **OP swab collection**: Inform the patient of the procedure to be done. Ask the patient to open their mouth widely. If the tonsillar pillars or posterior oropharynx are not visible, you may use a tongue depressor to help gain access. Be gentle in order to avoid eliciting a gag reflex. Slowly insert the swab towards the posterior oropharynx whilst avoiding the tongue, teeth, and gums. Gently swipe the swab over both tonsillar pillars. Optionally, you may also sample the posterior oropharyngeal wall being careful not to depress the swab to the point of eliciting a gag reflex.

7. **Specimen handling**: Place NP and OP swabs immediately into a sterile 3- or 5-mL vial containing 2 ml of viral transport media (VTM) without antibiotics or RNAlater. Both swabs should be placed in the same vial to increase viral load. Aseptically break the applicator sticks near the tip of the container and secure the container by firmly tightening the cap. Optionally, you may cover the seam of the cap with Parafilm to prevent leakage. Label the vial with the pertinent patient details and wrap in absorbent material (tissue) in preparation for packaging.

Table 1. Summary of specimens to be collected from patients

Specimen Type	Collection Materials	Storage Until Testing	Comment
Nasopharyngeal and oropharyngeal swab (in VTM)	Dacron or polyester flocked swab	≤ 72 hours: 4°C > 72 hours: -70°C	The nasopharyngeal and oropharyngeal swabs should be placed in the same tube to increase the viral load.
Bronchoalveolar lavage	Sterile container	≤ 48 hours: 4°C > 48 hours: -70°C	There may be some dilution of pathogen. **PGC-CGL DOES NOT ACCEPT THIS TYPE OF SPECIMEN FOR PROCESSING.**
(Endo)tracheal aspirate, nasopharyngeal aspirate or nasal wash	Sterile container	≤ 48 hours: 4°C > 48 hours: -70°C	**PGC-CGL DOES NOT ACCEPT THIS TYPE OF SPECIMEN FOR PROCESSING.**
Sputum	Sterile container	≤ 48 hours: 4°C > 48 hours: -70°C	Ensure the material is from the lower respiratory tract. **PGC-CGL DOES NOT ACCEPT THIS TYPE OF SPECIMEN FOR PROCESSING.**

Adapted from: RITM-DOH (2020). Interim Guidelines: Operational Guidelines for Hospital-Based and Free-Standing Laboratories Testing for COVID-19 Using Sansure Biotech PCR Assay. *LABORATORY OPERATIONAL GUIDELINES NON-RITM NON-SNL V.2.0* Published 5 April 2020

II. Test Requisition Form

1. Specimens need not be inactivated prior to transport to the PGC-CGL for processing.

2. Essential information for the test request should be completely filled up by the requesting institution / hospital (*see Appendix B*).

3. The purpose of the form will ensure proper identification and handling of the sample, and additional epidemiological information will assist in identifying the source of infection, and potential contacts.

III. Packaging and Transport

1. All sample submissions must be coordinated with the PGC-CGL staff before 6PM of the date of submission through email (clinicalgenomicslaboratory@up.edu.ph) prior to transport regardless of their origin. All necessary documents, including Case Investigation Forms, Patient Line Lists, and Specimen Submission Forms shall be included in the email requests.

2. Cut-off acceptance of samples will be 10:00 AM each day.

3. The partner healthcare institution will be responsible for transporting the samples to the PGC every day. These samples must be placed in ice boxes clearly labelled with the corresponding collection time.

4. All samples from the partner institution should be accompanied with a filled-out human specimen submission form (*see Appendix B*).

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5. Specimen packaging shall follow the WHO standard triple-packaging system for biohazardous substances as shown below:

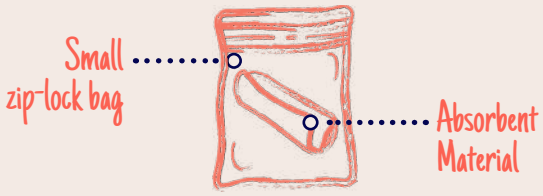


Diagram 1. Clinical sample placed in vial containing VTM and sealed with Parafilm or wrapped with absorbent tissue placed in a small zip lock bag.

Labeled samples will be sealed with either Parafilm or wrapped in absorbent tissue before being placed in a small zip-lock bag. This will then be placed inside a secondary container (50 ml conical tube) with a barcode, which is then placed inside another zip-lock (size #7) bag (Figure 2). Other pertinent information such as the patient's name, patient ID, date of birth, specimen type, and date collected should be indicated on the shipping packet.

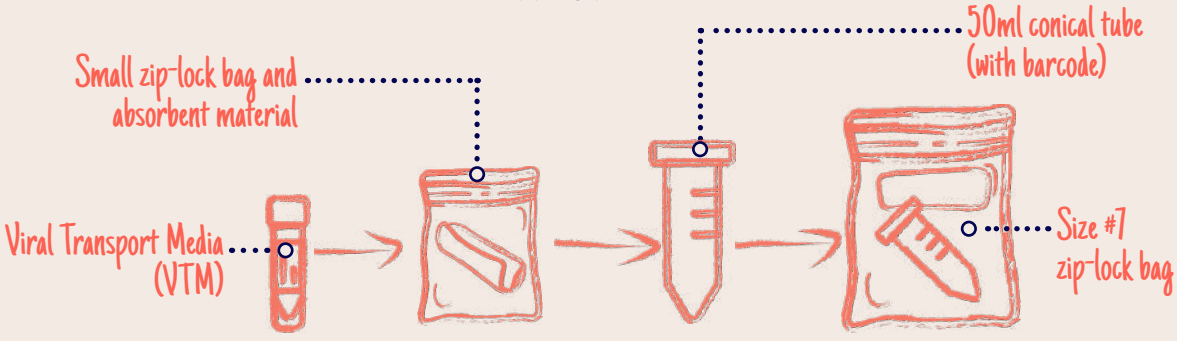


Diagram 2. VTM with triple-packaging system

6. Understanding the constraints and availability of materials to adhere to the triple-packaging method, samples submitted that do not conform to these standards shall not be immediate grounds for rejection provided the packaging was performed without risk of compromising the integrity of the sample to be subject to RT-PCR testing. The following shall be understood to be the bear minimum in packaging of the sample:

- Swab sample in viral transport medium (VTM) or other applicable primary container for specimen preservation
- Absorbent material (tissue) wrapped around primary container containing swab sample
- Individual, sealed plastic bag PER sample (i.e. no bag shall contain more than one swab sample in VTM)

7. The specimens suspected to contain the SARS-CoV-2 virus, which causes the COVID-19 disease, are included in infectious substances Category B. As such, they should be transported as "diagnostic specimens" (UN3373), following the guidelines and precautions discussed previously. For institutions with a higher risk assessment, specimens can be also transported as Category A substance UN 2814. Refer to WHO Guidance on regulations for the transport of infectious substances 2019-2020 (WHO/WHE/CPI/2019.20) for detailed instructions for Category A shipping.

8. As COVID-19 testing requires the preservation and subsequent detection of the SARS-CoV-2 viral RNA, coolants must be used to transport any form of clinical specimen for testing. The use of coolants (i.e. ice packs) preserves the integrity of the samples until they reach their destination. Thus, in addition to the basic triple packaging system, other packaging requirements specific for these coolants may need to be observed.

    - The coolant must be placed between the secondary packaging and third outer layer packaging.
    - If wet ice or ice packs are used, the outer container should be leak-proof to prevent water leakage as ice may melt overtime.

9. All properly packed clinical specimens for transport should be marked and labeled appropriately to provide information about the package contents, nature of the hazards and packaging standards that have been applied. All marks and labels must be clearly visible. The following details must be clearly visible in the shipping packet: patient's name, ID number, specimen type, and date collected.

10. The following labels must be provided on the outer package of all infectious substances:

Shipper's (sender's or consigner's) name and address	UP Health Service
Receiver's (consignee's) name and address	UP Philippine Genome Center

11. In addition to the labels above, the mark below must be indicated in the box for the transport of samples (Category B material):

Biological Substance Category B

The UN number and proper shipping name marks (for Category B packages sub-classified as UN 3373)

Simplified **Packaging and Transport** Guidelines

INFOGRAPHICS

Inform us first

For coordination of sending samples,
EMAIL US at clinicalgenomicslaboratory@up.edu.ph

Only 'til 10:00 AM (daily cut-off)

Security measures and coordination

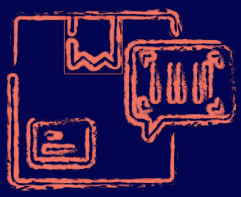
- Date of delivery
- Time of delivery
- Name of transporter
- Source of sample (Institution)

Your responsibilities

Fill out a form

See *Appendix B*

Specimen packaging



a. Label samples
b. Seal samples with either Parafilm or wrapped in absorbent tissue
c. Place in a small zip-lock bag
d. Place the whole thing inside a secondary container (50 ml conical tube) with a barcode
e. Then, place inside another zip-lock (size #7) bag.

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Sending us some samples?

Categories for labeling

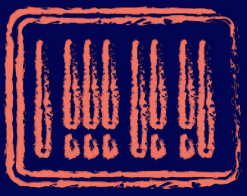
- A — Infectious substance (UN2814)
- B — Diagnostic substance (UN3373)

Coolants are a MUST

4°C

Ice boxes labeled with corresponding collection time

Mark and label appropriately



The following details must be clearly visible in the shipping packet...

- Patient's name
- ID number
- Specimen type
- Date collected

How to label

Shipper's (sender's or consigner's) name and address	University Health Service
Receiver's (consignee's) name and address	UP Philippine Genome Center

How to mark

Biological Substance Category B

For Inquiries

Call 8-981-8500 local 4713 or
email us at clinicalgenomicslaboratory@up.edu.ph

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