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COVID-19 Sample Collection and Testing: Clinical Practice Guidelines (CDC, 2020)

Centers for Disease Control and Prevention

This is a quick summary of the guidelines without analysis or commentary. For more information, go directly to the guidelines by clicking the link in the reference.

March 23, 2020

In March 2020, the US Centers for Disease Control and Prevention (CDC) published interim guidelines regarding the collection, handling, and testing of clinical specimens for the diagnosis of coronavirus disease 2019 (COVID-19).[1]

Collection and evaluation of an upper respiratory nasopharyngeal swab (NP) is recommended for initial COVID-19 testing.

If an oropharyngeal swab (OP) is collected, it should be combined in the same tube as the NP; however, OPs are a lower priority than NPs.

Only patients with a productive cough should undergo sputum collection. Sputum induction is not recommended.

If lower respiratory tract specimens are available, they should also be tested.

If clinically indicated (eg, if the patient is undergoing invasive mechanical ventilation), collection and testing of a lower respiratory tract aspirate or bronchoalveolar lavage sample should be performed.

Once a possible COVID-19 case has been identified, specimen collection should be performed as soon as possible, regardless of when the individual's symptoms began.

Proper infection control must be maintained during specimen collection.

Lower Respiratory Tract Specimens

Bronchoalveolar lavage, tracheal aspirate

Two to 3 mL should be collected in a sterile, leak-proof, screw-cap sputum collection cup or sterile, dry container.

Sputum

The patient should rinse his or her mouth with water and then expectorate deep cough sputum directly into a sterile, leak-proof, screw-cap sputum collection cup or sterile, dry container.

Upper Respiratory Tract Specimens

Nasopharyngeal swab/oropharyngeal swab

Only synthetic fiber swabs with plastic shafts should be used. Calcium alginate swabs or swabs with wooden shafts—both of which may contain substances that inactivate some viruses and inhibit polymerase chain reaction (PCR) testing—should not be employed. Swabs should immediately be placed in sterile tubes containing 2-3 mL of viral transport media. In general, the CDC recommends that only an NP should be collected. If an OP is collected as well, it should be combined at collection with the NP in a single vial.

To collect an NP, the swab should be inserted into the nostril parallel to the palate, reaching a depth equal to the distance from the nostrils to the ear's outer opening. To absorb secretions, the swab should be left in place for several seconds. It should then be slowly removed while the clinician rotates it.

In collecting an OP (eg, a throat swab), the posterior pharynx should be swabbed, with avoidance of the tongue.

Nasopharyngeal wash/aspirate or nasal aspirate

Two to 3 mL should be collected in a sterile, leak-proof, screw-cap sputum collection cup or sterile, dry container.

Storage

Specimens should be stored at 2-8°C for up to 72 hours after collection. If testing or shipping may be delayed, the specimens should be stored at -70°C or below.

Shipping

Packaging, shipping, and transportation of specimens must be performed as designated in the current edition of the International Air Transport Association (IATA) Dangerous Goods Regulations. Specimens should be stored at 2-8°C and shipped overnight to the CDC on ice pack. Specimens frozen at -70°C should be shipped overnight to the CDC on dry ice.

For more information, please go to Coronavirus Disease 2019 (COVID-19).

For more Clinical Practice Guidelines, please go to Guidelines.

References

1. Centers for Disease Control and Prevention. Interim guidelines for collecting, handling, and testing clinical specimens from persons for coronavirus disease 2019 (COVID-19). CDC. Revised March 17, 2020. https://www.cdc.gov/coronavirus/2019-nCoV/lab/guidelines-clinical-specimens.html

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