Coronavirus disease 2019 (COVID-19)
Quick Reference for Clinical Health Care Workers

National Institute for Communicable Diseases (NICD)
24-hour hotline number: 0800 11 1131|066 562 4021

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Clinical presentation and management of suspected cases

The clinical spectrum of COVID-19 ranges from an asymptomatic or mild flu-like illness to a severe pneumonia requiring critical care. The most common clinical symptoms are fever and cough with a few patients presenting with difficulty in breathing and bilateral infiltrates on chest X-rays. Treatment is supportive. The differential diagnosis includes influenza (Southern Hemisphere influenza season normally begins in May or June), conventional and atypical bacterial pneumonias, tuberculosis, or *Pneumocystis jirovecii* (PCP) if immunosuppressed. Malaria should be considered in persons with acute febrile illness residing in or travelling from malaria transmission areas.

Suspected COVID-19 case definition

Any person presenting with **an acute** (≤14 days) **respiratory tract infection** or other clinical illness compatible with COVID-19, or an asymptomatic person who is a close contact[1] of a confirmed[2] case

- Symptoms include ANY of the following respiratory symptoms: cough, sore throat, shortness of breath, anosmia (loss of sense of smell) or dysgeusia (alteration of the sense of taste), with or without other symptoms (which may include fever, weakness, myalgia, or diarrhoea)

Note: Close contacts should be tested ≥5 days after first contact with a case.

[1]Close contact: A person having had face-to-face contact (≤1 metre) or been in a closed space with a confirmed case for ≥15 minutes whilst not wearing a mask. This includes, amongst others, all persons living in the same household, people working closely in the same environment and people in the same academic class as a case. Healthcare workers or other people providing direct care for a case, while not wearing recommended personal protective equipment. Those sharing the same vehicle for ≥15 minutes with a case. A contact in an aircraft sitting within two seats (in any direction) of the case, travel companions or persons providing care, and crew members serving in the section of the aircraft where the case was seated.
[2]Confirmed case: A person with laboratory confirmation of SARS-CoV-2 infection, irrespective of clinical signs and symptoms. Symptomatic cases are considered infectious from 2-3 days before symptom onset to 10 days after symptom onset, irrespective of their vaccination status.

Forms to be completed (for all <u>suspected cases</u> having a specimen taken)

1. NHLS or private laboratory request form. Send to the laboratory

Mandatory information to be provided on laboratory request form

1. Facility name and ward name
2. Patient information:
   a. Surname and name
   b. Sex
   c. Date of birth
   d. Address
   e. Mobile and alternative telephone number
   f. ID number (or passport number)
3. Specimen type
4. Collection date and time
5. Test required: SARS-CoV-2 PCR and/or Antigen
6. Health care worker name and contact details

COVID-19 reporting

COVID-19 is classified as a Category 1 notifiable medical condition (NMC). Therefore, notification of confirmed cases should be made immediately.

<u>All **positive and negative** PCR and antigen tests</u> should be reported to the NICD's Notifiable Medical Conditions Surveillance System (NMCSS) either directly through the test provider's laboratory information system (LIS) or on the NHLS CSA portal.

Infection prevention and control (IPC)

1. Patients meeting the suspected case definition should be asked to wear a surgical mask once identified and evaluated in a private room where possible.
2. Limit patient movement (e.g., portable X-ray)
3. HCWs should wear appropriate PPE:
   - Eye protection (goggles or visor)
   - Gloves
   - Apron or gown
   - Surgical mask for general patient interactions, or N95 respirator (or equivalent, e.g., FFP2 mask) for aerosol-generating procedures such as specimen collection

Specimens required for SARS-CoV-2 PCR testing (see page 2)

Collecting a good quality specimen is vital

1. Upper respiratory tract specimen for all patients
   - A <u>single nasopharyngeal swab</u> is the preferred sample type. When not possible, a single nasal mid-turbinate swab or anterior nares swab may be collected
   - Transport and store swabs in universal/viral transport medium (UTM) or sterile saline, between 2-8°C. If UTM is not available, use dry swabs in a sterile tube. Dry swabs can be sent at ambient temperature, but must reach the laboratory within 2 days
2. Lower respiratory tract specimen when available
   - Sputum (if produced – DO NOT induce), tracheal aspirates or bronchoalveolar lavage
   - Transport in standard specimen container. Does not require UTM

COLLECTION OF NASOPHARYNGEAL, NASAL MID-TURBINATE OR NASAL SWABS FOR DETECTION OF SARS-CoV-2:

Respiratory viruses are best isolated from material that contains infected cells and secretions. Therefore, swabs should aim to brush cells and secretions off the mucous membranes of the upper respiratory tract. ***Good specimen quality*** (i.e. containing sufficient cells and secretions) and appropriate ***packaging and transport*** (i.e., to keep virus viable/detectable) are essential.

Step 1: Equipment and materials

1. NHLS or private laboratory request form
2. Flocked or spun swab (appropriate nasopharyngeal swab, or oropharyngeal swab for nasal mid-turbinate or nasal sample)
3. Tube containing universal transport medium (UTM). If UTM unavailable use sterile saline or send dry in sterile tube
4. Gloves, gown (or apron), N95 respirator (or surgical mask if unavailable), and eye protection (goggles or face shield)
5. Tissue for the patient to use after sample collection
6. Biohazard bag for disposal of non-sharp materials
7. Cooler box and cooled ice packs
8. Ziploc plastic specimen bag

Note: Some rapid antigen tests require special buffers for transport which may or may not be suitable for subsequent PCR testing if required

Step 2: Record keeping

1. Complete the NHLS/private lab request form (*include mandatory information)*
2. Place laboratory request form into a Ziploc bag
3. Label the sample tube with the patient's name, date of birth and sample type

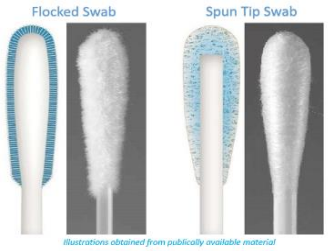
Step 3: Specimen collection

1. Don gloves, gown, respirator and eye protection
2. Open a sterile flocked swab at the plastic shaft
3. For a nasopharyngeal specimen: Ask the patient to tilt their head back. Estimate the distance from the patient's nose to the ear. Gently insert swab into the nostril and back (not upwards) to the nasopharynx until a slight resistance is met. Rotate swab 2-3 times and hold in place for 2-3 seconds. If resistance is met before fully inserted, remove and try the other nostril.
4. For a mid-turbinate specimen: Ask the patient to tilt their head back (~70 degrees). Gently insert swab less than 2 cm into nostril (until resistance is met at turbinates) and gently rotate several times against nasal wall and repeat in other nostril using the same swab.
5. For a nasal specimen: Insert the swab at least 1 cm inside the nares and firmly sample the nasal membrane by rotating the swab and leaving in place for 10 to 15 seconds. Sample both nares with same swab.
6. After collection of the specimen, slowly withdraw the swab and put it into the specimen container. If swab comes in a plastic peel pouch, remove, collect specimen and transfer swab in a separate container and close. For swabs with UTM or saline tube, break plastic shaft at the break point line into UTM/saline and tightly close the tube.
7. Place specimen tube into the ziploc bag with the lab request form. Seal the bag, taking care to keep it uncontaminated.
8. Place specimen bag in the fridge or cool place until transport to the laboratory.

Note: There are no absolute contraindications to nasal swabbing for coronavirus but care should be taken in patients with severe coagulopathy or recent nasal trauma or surgery as epistaxis (nosebleeds) may occur.

Recommended swab types

Flocked (polyester/nylon) or spun fibre (polyester/rayon) swabs with plastic or aluminium shafts should be used.



**Not recommended: cotton, calcium alginate swabs or swabs with wooden shafts, as they may contain substances that inactivate some viruses and inhibit PCR testing.*

Step 4: Transport of specimens

1. Transport to the laboratory on the day of specimen collection
2. If transport to the testing laboratory is <2 days, dry swabs can be used, and transported at ambient temperature
3. If transport to the testing laboratory is ≥2 days, swabs should be transported in UTM/saline preferably at 2-8^{0}C. Close tube tightly

NB. Leaking specimens will be rejected

Diagnostic tests for COVID-19

1. Testing for acute COVID-19 should be by means of either PCR or antigen tests
2. PCR tests remain the gold standard and are more sensitive than antigen tests
3. Antigen tests provide a quicker turnaround time and are cheaper than PCR, but are less sensitive and false negative results are more common
4. For patients with a high pre-test probability (symptomatic, known exposure or high community prevalence): A positive antigen test result confirms the diagnosis of COVID-19 but a negative result should be followed up by a PCR test
5. For patients with a low pre-test probability (asymptomatic, no known exposure or low community prevalence): A negative antigen test result can be assumed to be a true negative, whereas a positive result should be followed by a confirmatory PCR test to exclude a false positive result.
6. For further information on antigen tests refer to the antigen testing guidelines.
7. Antibody-based (serological) tests should not be used for the diagnosis of acute COVID-19.

NHLS testing laboratories

A list of NHLS testing laboratories and tests available is provided on the NHLS website.