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

15 May 2020

Clinical presentation and management of suspected cases

The main clinical signs and symptoms are fever and cough with a few patients presenting with difficulty in breathing and bilateral infiltrates on chest X-rays. Lymphopenia may be present. Treatment is supportive. The differential diagnosis for this syndrome is broad. Consider the possibility of influenza (Southern Hemisphere influenza season will begin in May or June), bacterial pneumonia, tuberculosis, *Pneumocystis jirovecii* (PCP) if immunosuppressed, and manage accordingly.

Criteria for person under investigation (PUI)*, i.e. a person to be tested for COVID-19

Persons with acute respiratory illness with sudden onset of at least one of the following: cough, sore throat, shortness of breath or fever [≥ 38°C (measured) or history of fever (subjective)] irrespective of admission status.

*Refer to NICD website for latest case definition

Characteristics of persons at highest risk

Persons at highest risk are those who have an acute respiratory illness and who, in the 14 days prior to onset of symptoms, met at least one of the following epidemiological criteria:

- Were in close contact[1] with a confirmed[2] or probable[3] case of COVID-19;

OR

- Had a history of travel to areas with local transmission of SARS-CoV-2;

OR

- Worked in[4] or attended a healthcare facility where patients with SARS-CoV-2 infection were being treated;

OR

- Admitted with severe pneumonia of unknown aetiology.

[1]Close contact: A person having had face-to-face contact (≤1 metre) or in a closed space with a COVID-19 case for at least 15 minutes. This includes, amongst others, all persons living in the same household as a COVID-19 case and, people working closely in the same environment as a case. A healthcare worker or other person providing direct care for a COVID-19 case, while not wearing recommended personal protective equipment or PPE (e.g., gowns, gloves, N95 respirator, eye protection). 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 (using an RT-PCR assay), irrespective of clinical signs and symptoms. Symptomatic cases are considered infectious from 2 days before symptom onset to 14 days after symptom onset.

[3]Probable case: A PUI for whom testing for SARS-CoV-2 is inconclusive (the result of the test reported by the laboratory) or who tested positive on a pan-coronavirus assay.

[4]Working in a healthcare facility includes healthcare workers as well as administrative and support staff such as cleaning staff

Forms to be completed

1. NHLS or private laboratory request form. Send to the laboratory
2. Contact list form. Retain for contact tracing team

Mandatory information to be provided on lab request form

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

Infection prevention and control (IPC)

1. Patients meeting the PUI case definition should be asked to wear a surgical mask once identified
2. PUI should be isolated and evaluated in a private room
3. Use appropriate infection control for PUI
   a. Standard precautions for all patients
   b. Add contact and droplet precautions for all PUI
   c. Airborne precautions (e.g. N95 mask) and eye protection must be used when performing aerosol-generating procedures
   d. Limit patient movement (e.g., portable X-ray)

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

1. A single nasopharyngeal swab is the preferred sample type. When not possible, a single nasal mid-turbinate swab or nasal swab may be collected
2. Transport swabs in UTM, sterile saline or dry in a sterile tube. Dry swabs are preferred to avoid leakage, but must reach the laboratory in <2 days. UTM should be used for samples that will take ≥2 days to reach the laboratory
3. Sputum (if produced – do NOT induce), tracheal aspirates or bronchoalveolar lavage **should additionally be collected for severe cases**

Case notification

COVID-19 is classified as a Category 1 notifiable medical condition (NMC). Therefore, notification of probable and confirmed cases should be made immediately, using the NMC web portal, mobile app (preferred methods), or NMC paper-based reporting form. Details and forms can be found here. Contact tracing will be initiated for confirmed COVID-19 cases.

COLLECTION OF NASOPHARYNGEAL, NASAL OR MID-TURBINATE 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. Contact line list (can be found here)
3. Flocked or spun swab (appropriate nasopharyngeal swab, or oropharyngeal swab for nasal or mid-turbinate sample)
4. Tube containing universal transport medium (UTM). If UTM unavailable use sterile saline or send dry in sterile tube
5. Gloves, gown (or apron), N95 respirator (or surgical mask if unavailable), and eye protection (goggles or face shield)
6. Tissue for the patient to use after sample collection
7. Biohazard bag for disposal of non-sharp materials
8. Cooler box and cooled ice packs
9. Ziploc plastic specimen bag

Step 2: Record keeping

1. Complete the NHLS/private lab request form (*include mandatory information)* **and** contact line list
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.

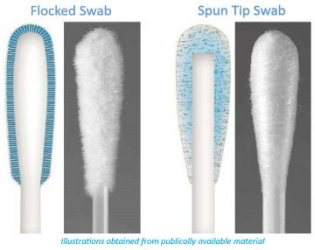
Note: There are no absolute contraindications to nasal swabbing for coronavirus but care should be taken in patients with severe coagulopathy or recent nasal trauma or surgery as epistaxis (nosebleeds) may occur.

Diagram: How to collect a nasopharyngeal swab



Recommended swab types

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



**Not recommended: 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 NHLS or private 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

NHLS laboratory contact details

Eastern Cape Province:

Port Elizabeth Provincial Hospital Lab	041 395 6120
Nelson Mandela Academic Hospital Lab	047 502 4886

Free State Province:

Universitas Virology Laboratory	051 405 3162/2834
Pelonomi Hospital Laboratory	051 405 9341

Gauteng Province:

Charlotte Maxeke Laboratory	011 489 8880
Tshwane Virology Laboratory	012 319 2509
DGM Virology Laboratory	012 521 4217
Tambo Memorial Hospital Laboratory	011 917 9605

KwaZulu Natal Province:

Inkosi Albert Luthuli Academic Laboratory	031 240 2794
Addington Hospital Laboratory	031 327 2463

Limpopo Province:

Mankweng Provincial Hospital Laboratory	015 267 6530
Polokwane Hospital Laboratory	015 297 1099/1100

Mpumalanga Province:

Rob Ferreira Hospital Laboratory	013 741 1014

North West Province:

Tshepong Hospital Laboratory	018 465 4988
Rustenburg Hospital Laboratory	014 592 2792

Western Cape Province:

Green Point Laboratory	021 417 9354
Groote Schuur Virology Laboratory	021 404 5067/5202
Tygerberg Virology Laboratory	021 938 4330/9355