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

National Institute for Communicable Diseases (NICD)

24-hour hotline number: 0800 11 1131|066 562 4021

2 April 2020

Background

On the 31st December 2019, the World Health Organization (WHO) China country office reported a cluster of pneumonia cases in Wuhan City, Hubei Province of China now known to be caused by a novel virus. Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has been confirmed as the causative virus of coronavirus disease 2019 (COVID-19). Cases have now been identified in over 100 countries including South Africa and WHO has declared a global pandemic.

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.

Characteristics of persons at highest risk

Persons at a 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 SARS-CoV-2 infection;

OR

- Had a history of travel to areas with local transmission of SARS-CoV-2; (NB Affected countries will change with time, consult NICD website for current updates);

OR

- Worked in, or attended a health care facility where patients with SARS-CoV-2 infections 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, NIOSH-certified disposable 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 health care facility includes healthcare workers as well as administrative and support staff such as cleaning staff

Infection prevention and control (IPC)

1. Early detection is key - health care workers should maintain a high level of clinical suspicion
2. Patients should be asked to wear a surgical mask once identified and be evaluated in a private room
3. Isolate PUI
4. 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. If available, airborne precautions can be used at all times
    e. Limit patient movement (e.g., portable X-ray)

Specimen collection for SARS-CoV-2 testing

Collect appropriate samples. **Lower respiratory tract samples are preferred because the lower respiratory tract is the primary site of infection.**

- Combined nasopharyngeal and oropharyngeal swabs in ambulatory patients and sputum (if produced) and/or tracheal aspirate or bronchoalveolar lavage in patients with more severe respiratory disease.
- Use universal/viral transport medium for swabs, if available; sterile container for sputum and aspirates; see page 2 for sample collection instructions.

A single negative test result, especially if from upper respiratory tract specimen, does not exclude infection. Repeat sampling and testing of lower respiratory tract samples is recommended for case with severe disease or in whom COVID-19 is strongly suspected.

Case notification

COVID-19 is classified as a Class 1 notifiable medical condition. Therefore, notification should be made immediately to the district or provincial communicable disease co-ordinators (CDCCs) on identification of a person meeting the definition for person under investigation (PUI) for COVID-19, a cluster of cases with severe respiratory illness with evidence of common exposure or epidemiologic link, or on receipt of a laboratory diagnosis of COVID-19. More details can be found here. District or provincial

COLLECTION OF NASO/OROPHARYNGEAL SWABS FOR DETECTION OF RESPIRATORY VIRUSES:

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. Complete specimen submission form **and** person under investigation (PUI) form **and** contact line list found here
2. Nasopharyngeal (NP) & oropharyngeal (OP) flocked swabs
3. Tube containing universal transport medium (UTM), if UTM unavailable may use gel or send dry in sterile tube
4. Tongue depressor
5. Gloves, N95 respiratory (or surgical mask if unavailable) and eye protection
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 specimen submission form **and** person under investigation (PUI) form **and** contact line list
2. Place specimen submission and PUI form into a Ziploc bag
3. Label the tube of universal transport media (UTM) with the patient's name and date of birth and sample type

Step 3: Collection of nasopharyngeal swab (NPS)

1. Don gloves, respirator or mask, and eye protection
2. Open a sterile flocked swab at the plastic shaft
3. Ask the patient to tilt his/her head back. Estimate the distance from the patient's nose to the ear.
4. Gently insert swab into the nostril and back (not upwards) to the nasopharynx until a slight resistance is met
5. Rotate swab 2-3 times and hold in place for 2-3 seconds
6. If resistance is met before fully inserted, remove and try the other nostril
7. Slowly withdraw the swab and put it into the specimen container
8. Break plastic shaft at the break point line & close the tube

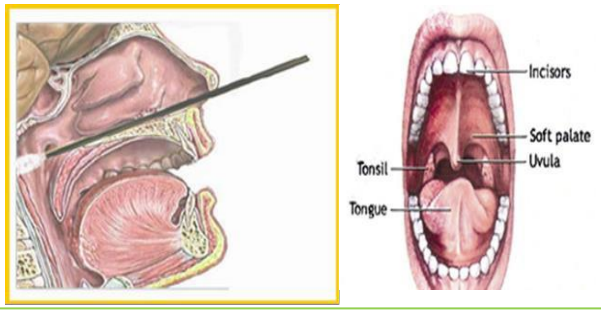
Step 4: Collection of oropharyngeal swab (OPS)

1. Wearing gloves, respirator or mask, and eye protection, and holding the UTM with the nasopharyngeal swab in, open a second flocked swab for OPS collection
2. Ask the patient to tilt their head back and mouth open
3. Hold the tongue down with a tongue depressor
4. Have the patient say "aahh" to elevate the uvula
5. Swab each tonsil first, then the posterior pharynx in a "figure 8" movement
6. Avoid swabbing the soft palate or the tongue with the swab tip as this can induce the gag reflex
7. Place the swab into the same UTM tube with the NPS already in and break off the shaft at the break point
8. Tightly close the tube
9. Place the closed tube with two swabs in the Ziploc bag
10. Remove gloves, respiratory or mask, and eye protection and wash hands thoroughly

Step 5: Transport of specimens

1. Ensure the cooler box and ice packs stay at 2-8^{0}C
2. Transport to NHLS or private laboratory on the day of specimen collection
3. Contact NHLS laboratories as below for shipping instructions or contact private laboratories directly
4. If shipping to NICD (for reference testing), mark: "Suspected COVID-19, NHLS/NICD, Centre for Respiratory Diseases and Meningitis (CRDM), Lower North Wing, SAVP building 1 Modderfontein Rd, Sandringham, Johannesburg, 2131".
5. NHLS laboratories use usual overnight regional courier service; private labs will ship via existing systems

Diagram: How to collect a nasopharyngeal swab (left) and oropharyngeal swab (right)



Step 6: NHLS laboratory contact details

Eastern Cape Province:

Dora Nginza Virology Lab	
Dr Howard Newman	0413956152

Free State Province:

Universitas Virology	051 405 3162
After hours ask for virologist on call	051 405 3033

Gauteng Province:

Charlotte Maxeke Laboratory	082 329 2914
Tshwane Virology Laboratory	
Prof Sim Mayaphi	012 319 2351
DGM Virology Laboratory	
Dr Temitayo Famoroti	012 521 4398

KwaZulu Natal Province:

Inkosi Albert Luthuli Academic Hospital Virology	
Dr Khanyisile Msomi	031 240 2791/4

Northern Cape Province:

Universitas Virology	051 405 3162
After hours ask for virologist on call	051 405 3033

Western Cape Province:

Tygerberg Virology	021 938 4330/4934
Groote Schuur Hospital Virology	021 404 4129/3091