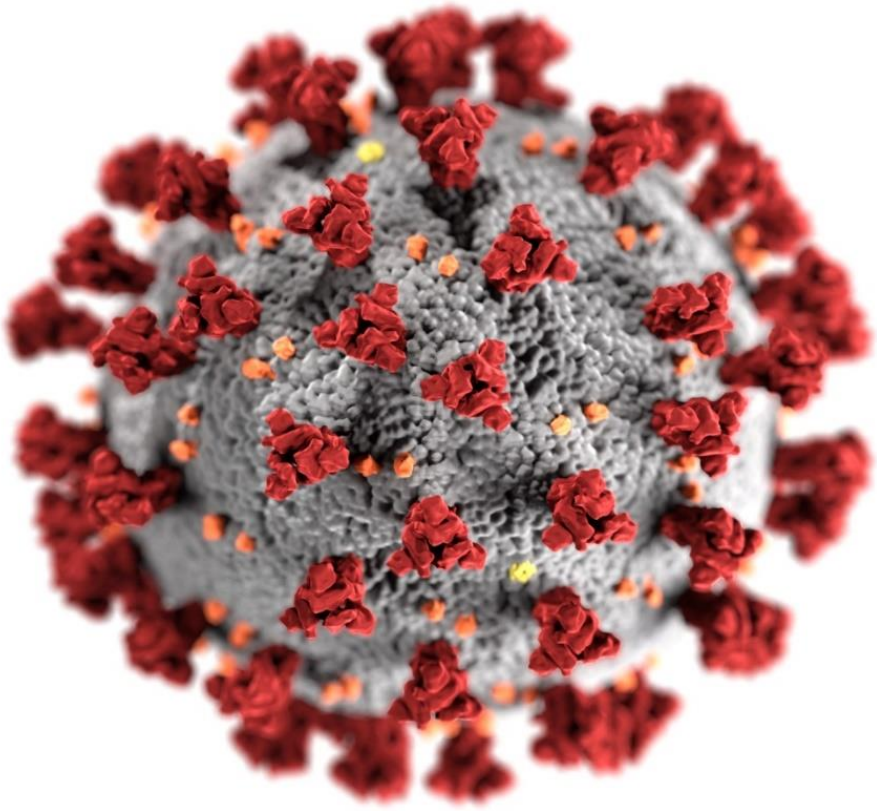
MINISTRY OF HEALTH

COVID-19 CASE MANAGEMENT GUIDELINES

In the Kingdom of Eswatini

8th APRIL 2020
V1.0



Foreword

Eswatini is one of the African countries that are faced by the COVID-19 global pandemic which was declared a National Emergency on the 17th March 2020 by His Majesty King Mswati III.

Following guidance from the World Health Organisation and in collaboration with different stakeholders in the country, a COVID-19 case management guideline was developed to support healthcare workers with prevention, triaging, identification and clinical management of COVID-19 suspected and confirmed cases.

All healthcare worker in the Kingdom of Eswatini are expected to follow these guidelines to effectively manage the COVID-19 epidemic. With these guidelines we expect highest quality care for the suspected and confirmed corona patients. As experience and knowledge on COVID-19 is rapidly evolving, these guidelines will be updated periodically

I would like to take this opportunity to thank the Ministry of Health Program leads, technical working group members, key stakeholders and implementing partners for their contribution and support in developing these guidelines.

Senator Lizzy Nkosi

Honorable Minister of Health

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1 Introduction

1.1 Background

Coronavirus disease (COVID-19) is a disease that is characterized by severe acute respiratory syndrome (SARI) and is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) formerly called the novel Coronavirus (nCov19). On 31 December 2019, WHO was alerted to several cases of pneumonia in Wuhan City, Hubei Province of China. One week later, on 7 January 2020, Chinese authorities confirmed that they had identified a novel (new) coronavirus as the cause of the pneumonia. The proposed interim name of the virus is nCoV-19 and has now spread across the world. On 30 January 2020, the Director-General of WHO declared the nCoV-19 outbreak a public health emergency of international concern (PHEIC) and on 11 March, the WHO declared COVID-19 a global pandemic. Following the first confirmed COVID-19 positive cases in Eswatini, His Majesty King Mswati III declared a state of emergency on the 17th March 2020.

Current evidence shows that SARS-CoV-2 is transmitted between people through respiratory droplets. The droplet transmission occurs when a person is in close contact (within 1-2 m) with someone who has respiratory symptoms (e.g. coughing or sneezing,) and is therefore at risk of having his/her mucosae (mouth and nose) or conjunctiva (eyes) exposed to potentially infective respiratory droplets (which are generally considered to be > 5-10 µm in diameter). Therefore, transmission of the SARS-CoV-2can occur by direct contact with infected people and through indirect contact with surfaces in the immediate environment or with objects used on the infected person (e.g. stethoscope or thermometer).

About 80% of people infected with the SARS-CoV-2 will experience mild to moderate respiratory illness and recover without requiring special treatment. The clinical signs and symptoms of corona virus disease range from non-specific respiratory symptoms such as fever and cough, to shortness of breath and symptoms of pneumonia and severe acute respiratory infection. Older people, and those with underlying medical problems like cardiovascular disease, diabetes, chronic respiratory disease, and cancer are more likely to develop severe illness requiring hospitalisation and oxygen therapy (mainly due to pneumonia). However, it has been reported that some cases remain asymptomatic. The virus has an approximately two - ten percent fatality rate with most of those who have died from the virus to date being elderly and people with pre-existing health problems.

Purpose

The purpose of this document is to provide health professionals with guidance on identification and management of suspected and confirmed CoVID-19 clients in order to minimise transmission, standardize and optimise care for those infected and to improve clinical outcomes in the Kingdom of Eswatini.

1.2 COVID-19 epidemiology and natural history

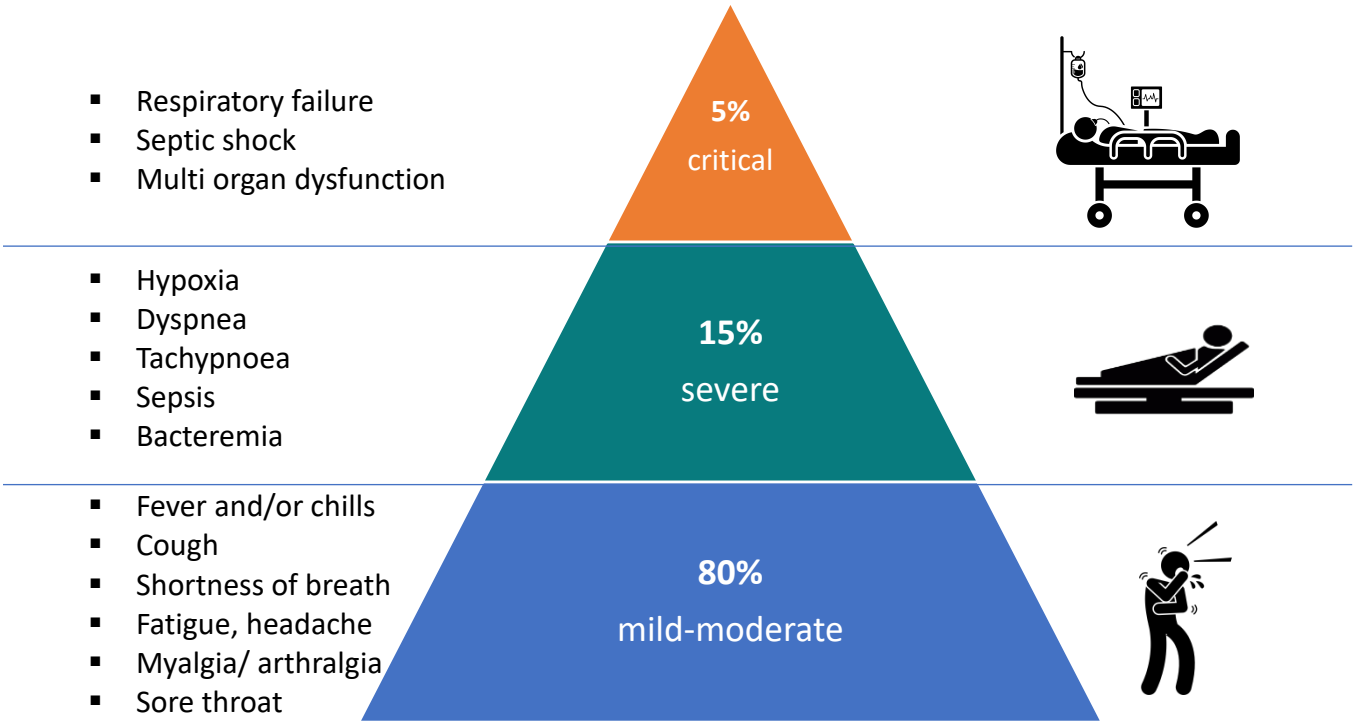
- ***Incubation period***: 1-14 days (commonly 3 to 7 days)
- ***Mode of transmission*:** Primarily through respiratory droplets and secretions.

- Transmission is likely to occur through virus contact with respiratory mucosa or conjunctivae, either by direct exposure or by transfer on hands from contaminated objects or surfaces.
- **The current evidence does not support airborne transmission**, except during aerosol-generating procedures which include intubation, suctioning, bronchoscopy, tracheostomy, cardiopulmonary resuscitation.

- ***Period of communicability:*** The period of communicability is considered to commence 48 hours before onset of symptoms and continue until 14 days from day of symptoms or if asymptomatic up to 14 days from date of first confirmation test.

Who is at risk of infection and of severe disease?	▪ People of any age can be infected with COVID-19. ▪ People with pre-existing medical conditions, like high blood pressure, diabetes, or heart or lung disease are more at risk of severe disease ▪ Older adults are more at risk of severe COVID-19 disease ▪ Risk of severe COVID-19 disease gradually increases with age over the age of 40 years. ▪ In children, symptomatic infection appears to be uncommon; when it occurs, it is usually mild

1.3 Clinical characteristics



2 Health facility preparedness

All health facilities need to prepare to receive a high volume of clients with or suspected to have COVID-19 infection within a short time and be ready to manage clients with severe acute respiratory syndromes. The following standards should be met in all facilities:

- **Human resource:**
  - Identify a focal person
  - Ensure all health care workers are trained
  - Recruitment to fill vacant posts
  - Repurposing of existing staff (available duty roster assigning staff to provide clinical care for COVID-19 suspects/confirmed cases)
- **Infrastructure readiness**:
  - Identify a temporary triaging and screening area (Consider tents or gazebo's if needed)
  - Create hand washing stations,
  - Identify a designated isolation area,
  - Assess bed capacity of isolation area
- **Essential supplies** e.g.
  - Assess availability and order sufficient quantities of essential supplies e.g. IPC commodities and PPE, medication, oxygen cylinders, etc
  - Assess functioning of ventilators (where applicable) and request service and maintenance if indicated
- **Operations and logistics**:
  - Ensure functional phone line,
  - Set-up referral system,
  - Assess waste disposal,
  - Quantification and forecasting of supplies.
- **Essential health services:**
  - Ensure essential services continue with minimum visits for clients to the facility.
  - Provide multi-month scripting for chronic care patients, including HIV, DM, HPT, TB,
  - Cancel elective procedures.

A standard facility readiness assessment tool (See Annex 2) can be used to identify gaps. Facilities should start to prepare and address identified gaps, even if COVID-19 has not been reported in the community where the facility operates.

3 Case definition of COVID-19

The Ministry of Health has developed a case definition for COVID-19 based on WHO guidance and expert advice from the National COVID-19 Task Force. The case definition considers both the epidemiology of the virus as well as its clinical presentation.

SUSPECTED CASE
A. A patient with acute respiratory illness (fever and at least one sign/symptom of respiratory disease (e.g., cough, shortness of breath), AND with no other etiology that fully explains the clinical presentation AND a history of travel to or residence in a country/area or territory reporting local transmission of COVID-19 disease during the 14 days prior to symptom onset. **OR** B. A patient with any acute respiratory illness AND having been in contact with a confirmed or probable COVID19 case in the last 14 days prior to onset of symptoms; **OR** C. A patient with severe acute respiratory infection (fever and at least one sign/symptom of respiratory disease (e.g., cough, shortness breath) AND requiring hospitalization AND with no other etiology that fully explains the clinical presentation.

PROBABLE CASE
A suspected case for whom testing for COVID-19 is inconclusive

CONFIRMED CASE
A person with laboratory confirmation of COVID-19 infection, irrespective of clinical symptomatology

Reporting

- Novel coronavirus capable of causing severe respiratory illness' is a notifiable disease.
- Notifiable diseases are required to be reported to 977 using the Immediate Disease Notification System (IDNS) form (See annex 1)
- Notifiable conditions including COVID-19 should also be reported weekly and monthly to the HMIS using standard reporting forms.

4 PPE and Infection Control

Basic hygiene measures are the most important way to stop the spread of infections, including COVID-19 . These include:

- Frequent hand-washing (or use of alcohol-based hand sanitiser), especially after every client contact.
- Keep hands away from face (eyes, nose and mouth).
- Practising cough etiquette (maintain distance, cover coughs and sneezes with elbow, disposable tissues or clothing and wash and dry hands).
- Social distancing be at least 1 metre away with clients
- HCW with acute respiratory symptoms should stay home if unwell.

In addition to basic hygiene measures, standard precautions should apply for all patients and clients. Health workers in direct contact with COVID-19 suspected and confirmed clients and those taking specimens should always put on the appropriate PPE including:

- Long-sleeved fluid repellent disposable gown (non-sterile) – scrubs should be worn underneath (where available)
- Gloves (non-sterile), with tight-fitting cuffs
- N95 mask/respirator – proper fit test should be done
- Eye protection – either goggles or full-face visors

Correct donning and doffing measures should be observed at all time and special airborne precautions should be taken when aerosolized respiratory secretion are generated from procedures like intubation, suctioning, bronchoscopy, tracheostomy, cardiopulmonary resuscitation. This should preferable be done in a negative pressure room (at least 12 air exchanges/hour) or natural ventilation (air flow at least 160 L/s per patient)

See table 1 for a full summary of PPE

Table 1: Recommended PPE use in the context of COVID-19, according to the setting, personnel and activity

Setting	Target personnel or patients	Activity	Recommended Type of PPE
Patient room	Healthcare workers	Providing direct care to COVID-19 patients.	▪ N95 mask, ▪ Gown, ▪ Gloves, ▪ Eye protection (goggle or face shield)
		Aerosol-generating procedures performed on COVID-19 patients.	▪ N95 mask ▪ Gown and Apron, ▪ Gloves, ▪ Eye protection (goggles/face shield)

Setting	Target personnel or patients	Activity	Recommended Type of PPE
	Cleaners	Entering the room of COVID-19 patients.	▪ Medical mask, ▪ Gown, ▪ Heavy duty gloves, ▪ Eye protection (if risk of splash from organic material or chemicals), ▪ Boots or closed work shoes
	Visitors	Entering the room of a COVID-19 patient	▪ Medical mask, ▪ Gown ▪ Gloves
Other areas of patient transit (e.g., wards, corridors).	All staff, including healthcare workers.	Any activity that does not involve contact with COVID-19 patients.	▪ No PPE required ▪ Conduct risk assessment and apply PPE accordingly
Triage	Healthcare workers	Preliminary screening not involving direct contact	▪ Maintain spatial distance of at least 1 m. ▪ HCW to wear medical mask, if available N95 mask.
	Patients with respiratory symptoms.	Any	▪ Maintain spatial distance of at least 1 m, ▪ Provide medical/surgical mask to patient
	Patients without respiratory symptoms.	Any	▪ No PPE required
Laboratory	Lab technician	Manipulation of respiratory samples.	▪ N95 mask, ▪ Gown, ▪ Gloves, ▪ Eye protection (if risk of splash), ▪ Assess risk and apply PPE accordingly
Administrative areas	All staff, including healthcare workers.	Administrative tasks that do not involve contact with patients	▪ No PPE required

5 Facility Screening and Triage

During the COVID-19 pandemic, it is paramount to maintain and preserve adequate functioning of the healthcare system. Even if identification and management of suspected case of COVID-19 is prioritized, it is also critical for healthcare facilities to continue to provide care for all patients, irrespective of COVID-19 infection status, at the appropriate level (e.g., out-patient care, emergency care , in-patient care, and home-based care).

Facilities should have a systematic way to to respond to a surge in patients requiring care. All facilities should be prepared to safely triage and manage patients with respiratory illness, including COVID-19.

Main objectives for screening and triage are to sort patients in order to allow:

1. Early identification and isolation of potential/ suspected COVID-19 patients to prevent transmission
2. To prioritise patient care according to severity of symptoms and signs (mild /mod/severe)
3. Ensure health care workers wear appropriate PPE as determine by potential exposure risk.

It is important to recognize patients with severe acute respiratory infections early in order to direct them for emergency care
DO NOT DELAY OXYGEN THERAPY

Screening of patients and relatives at entrance

All health facilities should implement the screening procedure as directed below:

- All patients entering the facility should be screened for history of travel outside Eswatini and flu-like symptoms
- Facilities should limit points of entry, and designated entrances should be manned by screening staff/security to limit crowds
- Visual alerts (signs/ posters) should be placed at entrances and in strategic places providing instructions on hand hygiene, respiratory hygiene and cough etiquette.

Handwashing facility and sanitizers at entrances to wards and OPDs

- Sanitizers and handwash facilities should be placed at entrances to OPD, Wards, theatres, etc
- Ensure sufficient supplies are available (tissue, waste receptables, soap and alcohol-based sanitizer)

Triaging of patients

- Recognize and fast track all patients with severe acute respiratory infection at first contact with the health system

Signs of severe Acute respiratory infections include : Fast breathing, Nasal flaring , Shortness of breath, Speak in short sentences, Intercostal recession. Altered level of consciousness.
PATIENTS MAY BECOME ANXIOUS AND AGITATED AS THEY BECOME HYPOXIC.

- Provide a surgical mask for all clients with cough at first contact.
- COVID-19 may present with mild, moderate or severe illness. Severe illness may include severe pneumonia, acute respiratory distress syndrome, sepsis and septic shock

- Create an area for spatially separating patients with respiratory symptoms.
- Separate and isolate clients with:
  - high temperatures and URTI signs and symptoms from general crowd
  - flu-like symptoms and history of travel
  - patients with severe illness should receive urgent attention – do not delay oxygen therapy.
- Early recognition of symptoms allows for timely initiation of IPC measures

Reducing number of people coming to hospitals

- Patients in waiting rooms should be sitting at least one meter apart from each other.
- At OPD - inform people to come on their own or have only one person accompanying them where needed,
- Restrict children coming into OPD if not seeking services but accompanying parent or relative
- Limit number of lodgers and only allow such for very sick patients
- Restrict and monitor visiting hours and allow only close relatives in hospital wards
- Do not allow other non-essential visits to hospital wards, e.g. traders, church groups, healers, etc

Managing hospital admissions

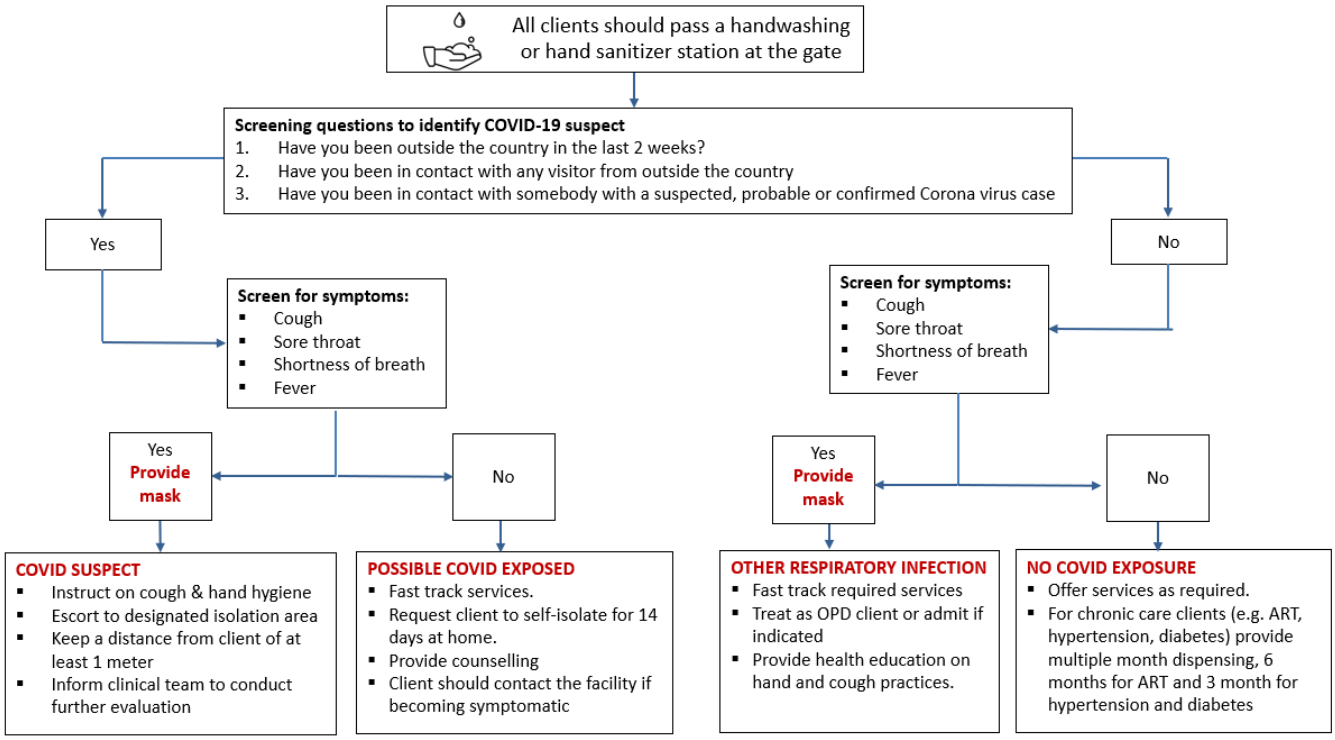
- Avoid unnecessary admissions for both COVID and non-COVID cases.
- Consider day care services for non-critical patients
- Cancel elective procedures
- Ensure at least 1 meter distance between patients

Patient education on basic hygiene practices

- During OPD waiting, educate patients on COVID-19 and its prevention
- Distribute leaflets to patients on COVID-19 disease
- Provide soap for handwashing in bathrooms/toilets and wards

Health workers use of masks and examination gloves

- Encourage health workers in OPD to use medical/surgical masks and gloves to examine patients
- For examination of COVID-19 suspects, HCW should wear N95 mask
- Continuous handwashing with soap and water after removing gloves



Community Screening and Triage

Any client identified in the community during outreach activities or through contact tracing with symptoms of fever, cough, sore throat, or difficulty breathing should be isolated as soon as possible.

- Health provider / Community worker / patient should call the emergency number (977) or the individual will be directed to the nearest facility with capacity to screen.
- If safe transport is not available, then an ambulance with appropriate personnel and PPE will be dispatched to pick up the patient.
- Safe transportation includes a private car where all the occupants including the sick person use masks.
- Public transport (Buses, Combis, and Taxis) should not be used to transport sick individuals to the nearest isolation facilities as these are likely to propagate the spread of infection.
- On arrival to a facility or arrival of the ambulance, health personnel will assess the patient to determine if they meet the case definition.
- Team work is encouraged at all times.

6 Laboratory diagnosis

Who should be tested for COVID-19?

- Testing should be done for individuals **meeting the suspected case definition** to confirm diagnosis and
- To monitor clinical recovery in confirmed cases.

Laboratory specimen should be preferable be taken by clinician (nurse/Medical doctor) managing patient in the isolation room

Laboratory Specimen collection

- Specimen collection for laboratory diagnosis should be collected using the recommended procedures
- nCov testing is done using RT PCR (Reverse Transcription Polymerase Chain Reaction)
- COVID-19 specimen collection should be taken from:
  - Upper respiratory specimens
    - nasopharyngeal swab
    - oropharyngeal swab
    - wash in ambulatory patients
  - Lower respiratory specimens
    - sputum (if produced)
    - endotracheal aspirate*
    - broncho-alveolar lavage*

*Note: High risk of aerosolization, therefore adhere strictly to infection prevention and control procedures).

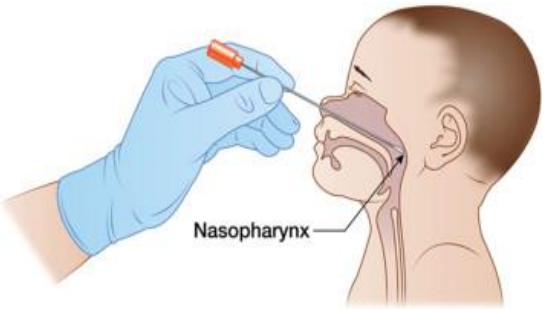
Additional Investigations

- Routine baseline tests for acute severe pneumonia
  - FBC,
  - U&E,
  - LFT
- X-Ray
- Other tests (depending on working differential and comorbid disease present) may include:
  - bacterial culture,
  - Gene -Xpert testing for TB,
  - Urinary antigen testing and
  - Tests for respiratory viruses, including influenza,
  - Blood Glucose.

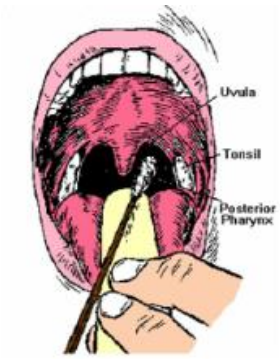
Procedure for collection of specimen (see Job Aid Annex 3)

- When collecting respiratory specimens, transmission-based precautions should be observed whether respiratory symptoms are present.
- For most patients in a community, outpatient, clinic setting, collection of respiratory specimens is a low risk procedure and can be performed using contact and droplet precautions:
  - Perform hand hygiene before donning gown, gloves and surgical mask; add eye protection as per standard precautions
- To collect throat or nasopharyngeal swab stand slightly to the side of the patient to avoid exposure to respiratory secretions, should the patient cough or sneeze.

- Prepare the sample collection materials which include the swab, viral transport medium (VTM) (if available) and, sample labelling, and Ziplock biohazard plastic bag
- Open the swab container and remove the swab, taking care not to touch the tip to any surface or lay it down.
- To take **Nasopharyngeal (NP) swab**:
    - Hold the swab with fingers placed on the score line.
    - With the patient seated, if possible, tilt the head back 70 degrees
    - Support the back of the head with your non-dominant hand.
    - Gently insert swab into nostril along the septum floor of the nose extending straight back until the posterior nasopharynx is reached (distance from nostrils to external opening of ear)
    - Leave swab in place for several seconds to absorb secretions
    - Rotate the swab several times while the swab is in contact with the nasopharyngeal wall.



- To take **Oropharyngeal (OP)** swab:
    - Swab the patient's posterior pharynx and tonsillar area (avoid the tonsils and tongue).
- Combine NP and OP if taken from one patient.
- Place swab into the VTM and break (snap) off the swab at the indicator line.
- Replace cap and screw cap securely
- Label sample with a least two patient identifiers, write "NP" or "OP" on the tube and place in biohazard bag
- Freeze specimen and keep frozen



- Submit sample with a requisition form for COVID-19 testing. Please include the patient's address, phone number.
- **Lower respiratory tract specimen 2-3 ml** (Bronchoalveolar Lavage, Tracheal Aspirate, sputum) can also be collected
    - For collection of **sputum**, have the patient rinse the mouth with water and then expectorate deep cough sputum directly into a sterile, leak-proof, screw-cap sputum collection cup or sterile dry container.
    - Do not induce sputum as it might generate aerosol and droplets.
- At completion of consultation, remove personal protective equipment (PPE) and perform hand hygiene, wipe any contacted/contaminated surfaces with detergent/disinfectant.

Storage and Transport condition of respiratory specimen

- Trained laboratory workers should package the specimen appropriately
- Laboratorians are expected to fetch the specimen form the medical ward/OPD, at community outreach where it was collected and making all the necessary safety precautions.
- The laboratory personnel who is assigned to picking and **triple packaging** of the collected specimen should put PPE which include wearing gown, gloves and surgical mask as per standard precautions
- Store specimens at 2-8°C for up to 72 hours after collection.
- If available, the use of VTM is strongly recommended.

- If a delay in shipping is expected beyond 72 hrs, store specimens at -20°C or -70°C or below and ship specimen on dry ice.
- Perform triple packaging just before shipping of the specimen
- Liaise with the facility Senior medical officer for shipping the packages specimen to the national reference laboratory as soon as possible
- Transport of specimens within national borders should comply with applicable national regulations.
- International transport of potentially COVID-19 virus containing samples should follow the UN Model Regulations, and any other applicable regulations depending on the mode of transport being used.
- Ensure good communication with the laboratory and provide needed information
  - ✓ Alerting the laboratory before sending specimens encourages proper and timely processing of samples and timely reporting.
  - ✓ Specimens should be correctly labelled and accompanied by a diagnostic request form and specimen transmittal form

Note: Bio-hazard sign with marking and labeling appropriate for the specimen category must be put on the tertiary container

Table 2: Interpretation of laboratory results and associated management

SARS CoV-2 test result	Symptoms	Recommended Management
Negative	Consistent with Alternative diagnosis	No further need for isolation due to COVID-19, however any pre-existing self-isolation requirements continue to apply*
	Symptoms Resolved	No further need for isolation due to COVID-19, however any pre-existing self-isolation requirements continue to apply*
	Symptomatic	Discuss with an experienced Clinician/Physician. If COVID-19 still suspected consider further upper respiratory test or sputum test/lower respiratory tract specimen test. Assess isolation and self-isolation based on test results, severity of symptoms and pre-existing self-isolation advice.
Equivocal/ Inconclusive	Symptomatic	Discuss with an experienced Clinician/Physician for further testing required. Remains in strict isolation until test results are conclusive. Assess ongoing isolation and self-isolation based on test results, severity symptoms and pre-existing self-isolation advice.
Positive	Symptomatic or Asymptomatic	Follow confirmed-case process

* A person who is in 14-days self-isolation/self-quarantine due to recent travel or after close contact with a confirmed case should remain in self-isolation/self-quarantine until the end of the 14-day period, irrespective of the SARS-CoV-2 test results

Follow up testing after initial Positive result

- The patient should have **two consecutive negative** combined URT samples (nasopharyngeal and/or oropharyngeal) by RT-PCR tests performed at least 24-48 hours apart.
- These samples should be collected after 48-72 hours of fever subsiding without treatment.

7 COVID-19 Management Approach

Management of suspected cases at first point of entry

- Suspected cases should be triaged and isolated by the receiving sites
- Prioritised care including oxygen therapy should be offered to patients with severe acute respiratory infections.
    - Signs of severe Acute respiratory infections include -fast breathing, nasal flaring, shortness of breath, speak in short sentences, increased work of breathing – Intercostal recession, subcostal recession. Altered level of consciousness. Patients may become anxious and agitated as they become hypoxic.
- Take adequate history and conduct physical examination
- A laboratory specimen (oro and/or nasopharyngeal) should be collected for COVID-19 testing
- Provide symptomatic treatment
- Patients with mild or moderate disease without risk of severe disease can be managed as out-patients under strict isolation advice and follow up plan.
- Patients with severe disease must be kept in isolation area /ward until laboratory results are back.
- Close monitoring of Patient's Temperature, BP, RR, Oxygenation levels and level of consciousness as clinical deterioration may occur rapidly.
- Activate appropriate level e.g. High care /ICU of care timely

IPC measures should be observed at all times to protect both patients and health care workers from cross infection even during transportation.

Evacuation of a confirmed case to National Treatment Center

- Once COVID-19 is confirmed, 977 is alerted, relevant clinicians are also alerted and the patient should be evacuated according to the EPR protocol
- Evacuation should happen within 24 hours of release of results, but preferably as soon as possible to minimize further transmission of the coronavirus
- Case management focal point to call the patient and explain the procedures to be taken and allay anxiety among close relatives living with the patient
- Case management focal person/ clinician arranging transport are to make sure that the client transportation is ready to receive and continue clinical management of client while in transit.
- RRT alerted to follow up with contact tracing and disinfection in household and education of all concerned on hygiene

Admission at the National Treatment Centre for COVID-19

- Ambulance staff hands over patient to attending clinicians (properly donned in PPE)
- Patient monitored with cardiac monitor to check vital signs and if needed resuscitation of patient carried out.
- Patients can be admitted in one ward
- Prioritised care for patients with signs of Severe Acute Respiratory infections

  Patient treatment and monitoring continued according to treatment protocols.- see chapter 8

8 Clinical Case Management

6.1 Clinical assessment

History taking

- Rapidly obtain a travel or contact history from any patient with severe acute respiratory infection (SARI).
- History of other comorbid conditions (e.g COPD, Diabetes, hypertension, etc) and medication currently being used

Physical examination and Vital Observations

- Conduct clinical examination of the systems as guided by history and vitals findings.
- Vitals observation: Temperature, Respiratory rate, Heart rate, Blood pressure, Oxygen Saturation
- Danger if:
  - Altered level of consciousness
  - Respiratory Rate > 22
  - Systolic BP < 100mmHg
  - See Sequential Organ Failure Assessment (qSOFA) scoring Annex 4

6.2 Investigations

- Laboratory testing (See section 5)
  - COVID-19 test (baseline and follow-up)
  - FBC, LFT, U&E
- Chest X-ray
- Other test and investigations as per need

6.3 Clinical management based on severity and risk factors

The management of COVID-19 respiratory infection depend on the severity (mild, moderate, severe or critical) of the disease and should be initiated at isolation area/ward

MILD Clinical syndrome: Uncomplicated upper respiratory tract infection

Clinical presentation:

- Symptoms are unspecific and can include fever, fatigue, cough (with or without sputum), headache, sore throat and nasal congestion
- Elderly and immunosuppressed may present with atypical symptoms
- Patients do not have signs of dehydration, sepsis or shortness of breath

Criteria for MILD:

- SpO_2 ≥94%
- Respiratory rate <20
- Heart rate <100
- Temp 36-38.5°C
- Mental status normal

Management

- These patients do not require hospitalization
- Patient should be provided with symptomatic treatment (e.g. Paracetamol for fever)

- Counsel the patient on seeking medical attention if symptoms worsen and respiratory distress occurs.
- Counsel the client on IPC and home care (Section 11: Discharge and Home care, page 23)

MODERATE Clinical syndrome: Mild pneumonia

Clinical presentation:

- No signs of severe pneumonia

Management:

- The majority of patients do not require hospitalization
- Consider hospitalization if the client is at high risk for severe disease (e.g. >60 years or pre-existing co-morbidities including diabetes mellitus, hypertension, heart or lung disease)
- Patient should be provided with symptomatic treatment
- For clients at home, counsel on:
  - home-isolation,
  - IPC
  - seeking medical attention if symptoms worsen and respiratory distress occurs.

Criteria for MODERATE:

Adults:

- SpO_2 ≥94%
- Respiratory rate <30
- Heart rate <120
- Temp 36-38.5°C
- Mental status normal
- No need for supplemental oxygen

Child:

- Child with cough, fever, chest pain and shortage of breath
- <2 month, RR>60
- 2-11 month, RR>50
- 1-5 year, RR>40

SEVERE Clinical syndrome: Severe pneumonia

Clinical presentation:

- Fever and/or at least one of the criteria for severe pneumonia
- Patient becomes anxious and agitated as they become hypoxic
- Laboured breathing with intercostal recession

DO NOT DELAY OXYGEN THERAPY AND WATCH OUT FOR ACUTE RESPIRATORY DISTRESS SYNDROME- *see section below*

Management Goal:

- To improve oxygenation levels and prevent organ failure .

Criteria for SEVERE:

Adult:

- RR >30 breath/min,
- Severe respiratory distress
- $SpO_2 \leq 93\%$ on room air

Child: Cough or difficulty in breathing plus at least one of the following;

- Central cyanosis or $SpO_2 < 90\%$,
- Severe respiratory distress
- Fast breathing <2months - ≥ 60b/min, 2 -11months ≥ 50b/min, 1-5yrs ≥ 40b/min
- Danger signs such as inability to breastfeed or drink, lethargy, unconsciousness or convulsions

Management:

- Admit to dedicated isolation area or room
- Give supplemental oxygen therapy
  - Nasal cannula – provides FiO_2 25 - 40% at 1 – 5L/min
  - Simple Face mask - provides FiO_2 40 - 60% at 6 – 10L/min
  - Face mask with reservoir bag - provides FiO_2 60 - 95% at 10 – 15L/min
- Use intravenous fluids cautiously as too much fluids may worsen respiratory function.
- Give empiric antimicrobials to cover both typical and atypical causes of Pneumonia within 1 hour of initial patient assessment *as per standard protocol*
  - Amoxicillin with Clavulanic Acid or Ceftriaxone for community acquired pneumonia
  - Doxycycline, Erythromycin and Azithromycin are considered for atypical pneumonia.
- Consider the patient's comorbidities and manage them concurrently.
- ***DO NOT ROUTINELY GIVE CORTICOSTEROIDS.***

Oxygen therapy targets:

- For patients with respiratory distress, hypoxaemia or shock, target $SpO_2 \geq 94\%$
- Once the patient is stable target $SpO_2 > 90\%$ in non-pregnant adult and $\geq$ 92 - 95% in pregnant patients
- For children target $SpO_2 \geq$ 94% while resuscitating then $SpO_2 > 90\%$ when stable.

Differential diagnosis:

- Forhospital acquired infection provide empirical antibiotic therapy.
- For immunosuppressed patients consider and rule out pulmonary tuberculosis and pneumocystis jiroveci pneumonia.
- De-escalate empiric therapy based on microbiology results.

Monitoring:

Closely monitor patient for signs of clinical deteriorations such as rapidly progressive respiratory failure and sepsis.

- Monitor Oxygenation level
  - *Danger if* - PaO_2/FiO_2 - $\leq$ 300 or SpO_2/FiO_2 - $\leq$ 315
- Monitor other vital signs (BP, HR, Temp, RR, level of consciousness)

Danger if:

  - Respiratory rate > 22
  - Systolic BP < 100Hgmm
- neurological assessment.
  - Altered state of consciousness- GSC< 12
- Urine output - < 500mls/day
- Laboratory investigations (FBC -, LFT-)- compare with baseline results. Danger if:
  - Platelets - <100 x $10^3/\mu L$
  - Bilirubin - 2.0-5.9mg/dl
  - Serum lactate > 2 mmol/L

Use medical early warning scores (MEWS) or qSOFA score and escalate to next level of care as soon as clinical deterioration isobserved – see annex 4.

Closely monitor patients with severe pneumonia as clinical condition may deteriorate very fast especially in the elderly >60 and clients with hypertension, diabetes, renal and COPD

CRITICAL Acute respiratory distress syndrome (ARDS)

Clinical presentation:

- Onset: within 1 week of a known clinical insult or worsening of respiratory symptoms
- Severe hypoxemic respiratory failure:
  - Patient in severe respiratory distress and failing standard oxygen therapy

PREPARE TO PROVIDE ADVANCED OXYGEN/ VENTILATORY SUPPORT.

Management Goal:

- To improve oxygenation and prevent worsening organ failure

Criteria for CRITICAL:

ADULTS:

- Chest imaging: bilateral opacities not explained by volume overload, nodules or lung collapse
- Oxygenation impairment: PaO_2/FiO_2 - $\leq$ 300 or SpO_2/FiO_2 - $\leq$ 315

Management:

- Patients should be transferred to an intensive care unit (ICU)
- Alert ICU/High care team
- Mechanical ventilation is recommended
- Intubation is a potential aerosol generating procedure therefore airborne precautions should be adhered to.
- Intubation considerations:
  - Should be performed in a room with negative pressure and PPE should also consider airborne precautions.
  - Airway assessment should be done and all required equipment should be in one room for intubation to be done in the shortest possible time.
  - Intubation by rapid sequence intubation methods and should be done by a trained and the most experienced provider in the team.
  - Pre-oxygenate with face mask with a reservoir bag for 5 minutes. Use of bag mask ventilation is not recommended as it can aerosolize the virus.
  - Endotracheal tube confirmation should be done after the cuff has been inflated.
  - Patient should be connected to a ventilator with bacterial/viral HME filter attached to the breathing circuit as well as closed suctioning apparatus.
- Mechanical ventilation recommendations
  - Use protective lung strategies –
    - Adults: low tidal volumes (4 – 8ml/kg of predicted body weight) to target plateau pressure <30cmH_2O
    - Children: tidal volume of 3 – 6ml/kg with target plateau of < 28 cmH_2O
  - High PEEP may be required to achieve good oxygenation. Titrate PEEP and FiO_2 according to the ARDS protocol
  - For patients with severe ARDS and difficult to ventilate permissive hypercapnia is permitted.
  - Non Invasive Ventilation is not recommended in severe ARDS (PaO_2/FiO_2 < 100)
  - Patients should be sedated to control ventilator drive and neuromuscular blockade can be used to avoid ventilator asynchrony.
  - In adults with moderate-severe ARDS (PaO_2/FiO_2 < 150) prone ventilation for 12 – 16 hours is recommended.
- Use conservative fluid therapy in patients with ARDS without tissue hypo-perfusion.

CRITICAL Sepsis and/or Septic shock

Clinical presentation:

- Onset: within 1 week of a known clinical insult or worsening of respiratory symptoms
- Signs of organ dysfunction by host dysregulated response to infection
- Early recognition of severe sepsis and septic shock needs prompt management.
- PREPARE TO GIVE VASOPRESSORS EARLY IN SEPTIC SHOCK THROUGH A CENTRAL LINE

Management goal:

- Restore intravascular volume, increase oxygen delivery to tissues and reverse organ dysfunction.

Management:

- Septic shock requires fluid resuscitation with crystalloids e.g. Ringers Lactate:
  - Adults: Ringers lactate with a bolus of 20 – 30ml/kg
  - Children: 10 – 20ml/kg, run for 30 – 60 minutes.
- Target MAP > 65mmHg and serum lactate level between 0.5-1 mmol/L
- If not achieved with fluid resuscitation alone start vasopressors.
- Vasopressor of choice is **norepinephrine if not available epinephrine**.
- These should be preferably given through a central line if not available a large bore peripheral line can be used; monitor for extravasation.
- Hourly monitoring of vital signs and ventilation. Interventions to prevent complications associated with critical illness should be implemented as per ICU protocols.

Criteria for CRITICAL:

ADULTS:

- life-threatening organ dysfunction (Altered mental status, Difficult or fast breathing, Low oxygen saturation, Reduced urine output, Fast heart rate, weak pulse, Cold Extremities, Low BP, Skin mottling or laboratory evidence of coagulopathy, thrombocytopenia, acidosis, high lactate and hyperbilirubinemia
- Persistent hypotension despite fluid resuscitation
- Hypothermia

CHILDREN:

Hypotension (SBP<5th centile) and 2 or 3 of the following:

- altered mental status,
- tachycardia,
- capillary refill>3 sec,
- tachypnea,
- mottled skin,
- oliguria

There is no current evidence from RCTs to recommend any specific anti-nCoV treatment for patients with suspected or confirmed 2019-nCoV infection.

9 Considerations for Special Groups

Cases in health care or hospice-care facilities

- There is evidence that human-to-human risk of transmission of coronaviruses is increased in hospital and hospice-care settings.
- If one or more confirmed COVID-19 cases have occurred within a health care or hospice-care facility, an outbreak management team should be convened, including a senior facility manager, an infection control practitioner and appropriate clinical staff, in consultation with SMO public health.
- No health care workers can work in a public setting if they have been in close contact with someone confirmed with COVID-19 in the last 14 days without PPE.
    - They should self-isolate for 14 days from the date of departure or close contact

Caring for pregnant women with COVID-19

- At this point, there is no evidence that pregnant women present with increased risk of severe illness or fetal compromise.
- No vertical transmission has been documented.
- Pregnant women with a suspected, probable or confirmed COVID-19 infection, including women who may need to spend time in isolation, should have access to woman-centred, respectful skilled care.
- All recently pregnant women with COVID-19 or who have recovered from COVID-19 should be provided with necessary information and counselling on safe infant feeding and appropriate IPC measures to prevent transmission.
- Pregnant and recently pregnant women who have recovered from COVID-19 should be enabled and encouraged to attend routine antenatal, postpartum or post abortion care as appropriate.
- Relatively few cases have been reported of infants confirmed with COVID-19 and most experienced mild illness
- Infants born to mothers with suspected, probable or confirmed COVID-19 infection, should be fed according to standard infant feeding guidelines
- In severe situations mothers should be encouraged and supported to express milk, and safely provide breastmilk to the infant, while applying appropriate IPC measures.
- As with all confirmed or suspected COVID-19 cases, symptomatic mothers who are breastfeeding or practicing skin-to-skin contact or kangaroo mother care should practice respiratory hygiene including during feeding
- Counsel on infant immunization

Caring for Older Persons with COVID -19

- Older age and comorbid diseases such as diabetes and hypertension have been reported as a risk factor for death
- Therefore, older people are at highest risk for fatality and one of the most vulnerable populations.
- Older people have the same rights as others to receive high-quality health care including ICU care.
- Physiological changes with age lead to declines in intrinsic capacity such as malnutrition, cognitive decline, depressive symptoms, and those conditions should be managed comprehensively.

- Early detection of inappropriate medication prescriptions is recommended to prevent adverse drug events and drug interactions
- Older people are at greater risk of polypharmacy, due to newly prescribed medications, inadequate medication reconciliation and a lack of care coordination which increases the risk of negative health consequences.
- Involve caregivers and family members in decision-making and goal-setting throughout the management of COVID-19.

COVID-19 and People living with HIV (PLWH)

- At the present time, there is little specific information about the risk of COVID-19 in PLHIV.
- In general, people living with HIV are more vulnerable to respiratory infections when their HIV is not well managed.
- As in the general population, older people living with HIV or people living with HIV with heart or lung problems may be at a higher risk of becoming infected with the virus and of suffering more serious symptoms.
- The risk for people with HIV getting very sick is likely greatest in:
    - People with a low CD4 cell count (e.g. <200 copies/cell),
    - Concurrent or recent opportunistic infection (e.g. tuberculosis)
    - Poorly controlled HIV disease (e.g. high viral load)
    - People not on HIV treatment (antiretroviral therapy or ART).
- For patients with known HIV infection, a CD4 and viral load test should be performed at admission.
    - It is important to continue antiretroviral treatment as prescribed.
    - Consider enrolment in differentiated service delivery models (DSDM) in order to minimize clinic visits.
    - Provide patient-centred support for patients currently not taking treatment or if struggling with adherence.
- HIV testing
    - It is important to know the HIV status of each patient to understand the risk of an unfavourable outcome and for clinical management.
    - Every patient with COVID-19 should be tested for HIV.
- ART initiation
    - If HIV positive, a CD4 cell count should be performed and the client should be initiated on first line ART as soon as possible
    - If a patient has signs or symptoms of concurrent severe opportunistic infections (e.g., cryptococcal meningitis, tuberculosis), delay ART until safe to initiate and treat concurrent opportunistic infection.
- ART regimen
    - Some types of HIV medicine (e.g. lopinavir-ritonavir LPV/r)) to treat COVID-19 are being evaluated.
    - Results from a clinical trial in China showed that LPV/r did not speed up recovery or reduce the amount of virus produced in patients hospitalized with COVID-19 and pneumonia.
    - More than 15 clinical trials of HIV medicines are registered.
    - Until more is known about the effects of these medicines on COVID-19, people with HIV should not switch their HIV medicine in an attempt to prevent or treat COVID-19.
- ART Refill Schedule
    - Providers are advised to prescribe and dispense longer refills of ART and IPT,

- Suspend all Facility based group DSD models (Teen Clubs and Treatment Clubs)
- Offer at least three months ART and IPT to stable adolescents and adults with evidence of undetectable Viral load.
- Modify Community based group models: Clients enrolled into Community ART Groups (CAGs) should not meet in the community, activities should be limited to community drugs distribution
- Implement/Scale up Community ART refills: facilities and partners are encouraged to shift ART refills in the community
- ART clinic should remain open daily to offer ART services to all other clients

PREP/PEP

- There is no evidence that PREP prevents the acquisition of coronavirus, or that its use will help patients recover quicker.
- Pre-exposure prophylaxis is a safe and effective cornerstone of HIV prevention and people at risk of acquiring HIV are also vulnerable during the COVID-19 crisis.
- Continue the provision of PREP as per national guidelines (e.g. PREP needs to be continued at least for 4 weeks since last risky sexual contact).
- The same applies for patients in PEP.

Tuberculosis and COVID-19

- While experience on COVID-19 infection in TB patients remains limited, it is anticipated that people ill with both TB and COVID-19 may have poorer treatment outcomes, especially if TB treatment is interrupted.
- TB patients should take precautions as advised by health authorities to be protected from COVID-19 and continue their TB treatment as prescribed.
- People ill with COVID-19 and TB show similar symptoms such as cough, fever and difficulty breathing.
- Both diseases attack primarily the lungs and although both biological agents transmit mainly via close contact, the incubation period from exposure to disease in TB is longer, often with a slow onset.
- In most cases TB treatment is not different in people with or without COVID-19 infection.
- Experience on joint management of both COVID-19 infection and TB remains limited.
- However suspension of TB treatment in COVID-19 patients should be exceptional.
- TB preventive treatment, treatment for drug-susceptible or drug-resistant TB disease should continue uninterrupted as it is important to safeguard the patient's health.
- It is critical that people who need treatment continue taking it during the pandemic, even if they acquire COVID-19, to increase chances of cure and reduce transmission and the development of drug-resistance.
- The risk of death in TB patients approaches 50% if left untreated and may be higher in the elderly or in the presence of comorbidity.
- Support for uninterrupted TB preventive treatment and treatment of TB disease should be ensured alongside the COVID-19 response.

10 Discharge and Home Care

- Hospitalization is not indicated for all patients, however, all patients should be triaged at the National COVID-19 Isolation Centre for appropriate decision to be made to provide emergency treatment according to disease severity
- Social workers need to be engaged at Regional level, including medical doctors and nurses
- Home care will be considered for the following:
  - Patients presenting with mild COVID-19 illness, hospitalization may not be required unless there is concern for rapid deterioration
  - A patient who makes an informed decision to refuse admission provide this will not put others at risk of infection.
  - When inpatient care is unavailable or unsafe (e.g. capacity is limited, or resources are unable to meet the demand of the health services)
- Conditions to be considered for home care:
  - Home should be suitable for providing care (e.g. separate room like servants quarters, toilet and bathroom available)
  - Patient and family capable of adhering to the precautions recommended for home care isolation e.g. hand hygiene, respiratory hygiene, environmental cleaning
  - Safety of the alcohol-based hand rubs from ingestion and risk of fire
  - Communication link with the public health personnel and clinician
- Patients and household members should be educated on personal hygiene, basic IPC measures, caring for the patient and avoiding spread of the infection among household members
- Recommendations for home care:
  - Patient should be in a well ventilated single room with open windows and doors
  - Minimize sharing the space with the patient
  - Minimize patient movement in the house
  - Ensured shared spaces such as kitchen and bathroom are well ventilated
  - Keep patient more than 1 metre away from other household members
  - Limit the number of care-givers to one person who is not immunocompromised or has co-morbidities
  - No visitors until patient has no signs and symptoms and has visibly recovered
  - Hand hygiene should always be done after contact with patient, during food preparation and after using the toilet, using soap and water
  - Use disposable paper to dry hands after washing them
  - The patient should be provided with a surgical mask to reduce contact with respiratory secretions
  - Caregivers should wear a properly fitting surgical mask when in the same room as the patient. Avoid touching the mask unnecessarily and remove it when it gets wet using the removal techniques described.
  - Caregivers should avoid contact with respiratory secretions and body fluids and always use gloves where contact with hands might occur
  - Do not reuse masks and gloves
  - Use dedicated linen and utensils for the patient and wash these carefully with soap and water before re-using

- Daily clean and disinfect frequently touched surfaces such as the bed frame, bedside tables and other furniture with regular soap or detergents then disinfect with a solution of 1 part bleach (jik) to 9 parts water
- Clean and disinfect bathroom and toilet surfaces at least once daily
- Disposal of masks and linen from the patient should be discarded as infectious waste

Release from isolation of confirmed or probable COVID-19 cases

A confirmed or probable case can be released from isolation provided all of the following criteria are met:

- Resolution of most acute symptoms (e.g. cough, sneezing) for the previous 24 hours. If there were prior chronic respiratory symptoms, then resolution of symptoms associated with current illness
  - Temperature less than 38°C for the previous 72 hours.
  - At least 14 days after onset of the acute illness.
  - Not have major immunosuppression, such as during receipt of chemotherapy.
- People with persistent acute symptoms or fever after 14 days should in remain in isolation, pending advice from a clinical microbiologist or infectious diseases expert.
- Repeat sampling of respiratory tract secretions for PCR is not recommended for most patients, particularly where the above criteria are met.
- Patients recuperating and being considered for release from isolation for whom these criteria are not met or are in doubt should be discussed with the clinical microbiologist.
- In some cases, PCR testing may have a role based in clinical circumstances e.g. major immunosuppression or health care workers.
- At release from isolation the case and their family should be given advice about cough etiquette and hand hygiene.

Note:

In cases with pneumonia, residual cough and fatigue may sometimes persist for weeks. However, from available clinical information and experience with other respiratory viruses, infectivity would be expected to mostly diminish concurrent with the acute respiratory illness.

NB: Where repeat testing is considered, the patient should have **two consecutive negative** combined URT samples (nasopharyngeal and/or oropharyngeal) by RT-PCR tests performed at least 24-48 hours apart. These samples should be collected after 48-72 hours of fever subsiding without treatment.

11 Handling of Visitors

- Visitors should be restricted to essential visitors only, such as parents for paediatric patient or an affected person's main carer
- Visitors should only be allowed after completion of a local risk assessment which includes infection risk
  - Risk of onward infection from visitor to health care staff or from patient to visitor
  - Feasibility of visitor to learn to correct usage of PPE (donning and doffing under supervision)
  - Determine if the visitor, even if asymptomatic, can be a potential infection risk when entering or exiting the unit
  - If any of the above are a concern, then the visitor should **NOT** be allowed into the unit.

12 Handling Dead Bodies

To date there is no evidence of persons having become infected from exposure to the bodies of persons who died from COVID-19. The dignity of the dead, their cultural and religious traditions, and their families should be respected and protected throughout.

- Ensure that personnel who interact with the body (health care or mortuary staff, or the burial team) apply standard precautions, including:
  - hand hygiene before and after interaction with the body, and the environment;
  - use appropriate PPE according to the level of interaction with the body including a gown and gloves.
  - If there is a risk of splashes from the body fluids or secretions, personnel should use facial protection, including the use of face shield or goggles and medical mask;
- Prepare the body for transfer including removal of all lines, catheters and other tubes
- Ensure that any body fluids leaking from orifices are contained
- Keep both the movement and handling of the body to a minimum
- Wrap body in cloth and transfer it as soon as possible to the mortuary area
  - There is no need to disinfect the body before transfer to the mortuary area
  - Body bags are not necessary, although they may be used for other reasons (e.g. excessive body fluid leakage
  - No special transport equipment or vehicle is required.
  - The trolley carrying the body must be decontaminated prior to leaving the room
  - The staff carrying the trolley must remove their PPE prior to leaving the room
  - A public mortuary will be used to store the dead body
  - If the family wishes only to view the body and not touch it, they may do so, using standard precautions at all times including hand hygiene. Give the family clear instructions not to touch or kiss the body;
  - Embalming is not recommended to avoid excessive manipulation of the body;
  - Adults >60 years and immunosuppressed persons should not directly interact with the body.

13 Environmental decontamination

- Coronaviruses have potential of widespread contamination of patient rooms and environments, so effective cleaning and decontamination is vital
- Cleaning and decontamination should only be performed by clinical staff trained in the use of the appropriate PPE rather than domestic staff
- After cleaning with neutral detergent, a chlorine-based disinfectant should be used in the form of a solution at a minimum strength of 1,000ppm available chlorine
- The main patient isolation room should be cleaned at least once a day and after a procedure that is aerosol generating or contaminating procedures
- There should be more frequent cleaning of commonly used hand touched surfaces and lobby areas (at least twice a day)
- Mop heads or cloths can be used for environmental decontamination and should be decontaminated after use with a chlorine-based disinfectant as described above
- Cleaning trolleys should not enter the isolation room if it will be used to clean other rooms

14 Handling linen from Positive Client

- Patients' laundry including bed sheets, blankets, covers and sleep wear should be handled with care when removing them from the patient's room
- Housekeeping staff should wear appropriate PPE when in patient's room
- Dirty Linen should be packaged in a plastic bag without shaking or sorting and tie the bag
- At the laundry, staff should open the bag and dump the contents into the washing machine
- Laundry staff should put on N95 masks, gloves, gown and an apron when handling the patient's linen
- Linen should be washed using normal detergents and follow normal drying and pressing procedures
- Dirty laundry that has been in contact with an ill person can be washed with other people's items, however, it is recommended to wash them separately

Annex 1: Notifiable Conditions- Immediate Notification form

Ministry of Health

Notifiable Conditions - Immediate Notification Form

NISCC APPROVED 31/07/2010 31/07/2013

Use the following process to IMMEDIATELY report Notifiable Conditions to the EPR Emergency line:

1) If a case is suspected, check the case definitions on the other side of this form to see if it must be notified.
2) If it is notifiable, collect the information on this form from the patient or accompanying relatives/friends. If there are two or more cases, fill in a separate form for each case (ie one for each patient).
3) Once the form is completed, immediately telephone the EPR toll-free line on 977 to report this case.
   *Treat this as **very urgent** - telephone immediately. **A call to 977 is free-of-charge from any cellphone.***
4) Follow the Additional Instructions for each specific condition that are written on the other side of this form.

PART A - FACILITY / PERSON REPORTING

Facility Name: _____ Report Date: / /

Facility Code: ☐☐☐☐ Person preparing report: _____

If the case is discovered in the community, please report via the nearest facility Cellphone contact number: _____

PART B - PATIENT DETAILS

Surname: _____ First names: _____

Sex: ☐ M ☐ F Pregnant: ☐ Yes ☐ No Date of Birth: / /

Telephone contact of patient: _____ Chief: _____

Location of patient's home: *(give nearest landmark and head of household)* _____

PART C - DETAILS OF THE CONDITION

Please tick ALL boxes that apply to this single case/patient:

- ☐ Confirmed Malaria (RDT or microscopy)
- ☐ Suspected Meningicoccal Meningitis
- ☐ Suspected Human Rabies
- ☐ Suspected Measles
- ☐ Suspected Severe Food Poisoning
- ☐ Suspected HINI
- ☐ Acute Flaccid Paralysis
- ☐ Viral Heamorrhagic Fever
- ☐ Suspected Rift Valley Fever
- ☐ Suspected Yellow Fever
- ☐ Suspected Typhoid Fever
- ☐ Suspected Chorela
- ☐ Maternal Death
- ☐ Perinatal Death
- ☐ Neonatal Tetanus

Date of onset: _____ Date of admission: *(If applicable)* _____ Date of death: *(If applicable)* _____

Treatment: *(If applicable)* _____

Case comments: *(include recent travel)* _____

Once you have completed this form, immediately ring the EPR toll-free line on 977 to report this case.

Date/time of call: / / at am/pm Your signature: _____

EPR officer receiving call: _____ / Case No. /

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The Kingdom of Eswatini
Ministry of Health

COVID-19 INPATIENT SURVEILLANCE FORM

Date	Case #	PIN	Name surname	Age	Sex	Symptoms	Patient status	Treatment given	Co-morbidities	Test 1 result	Test 2 result	Test 3 result	Outcome dead/ alive

The Kingdom of Eswatini
Ministry of Health

COVID-19 case investigation form

Today's date_____ Patient ID #_____
Patient name _____ Patient date of birth _____

Physician's name _____ Phone_____ Email_____

Sex ☐ M ☐ F Age_____ Residence ☐ SD resident ☐ Non-SD resident, country_____

Date of symptom onset_____
Does the patient have the following signs and symptoms (check all that apply)?

☐ Fever ☐ Cough ☐ Sore throat ☐ Shortness of breath
Does the patient have these additional signs and symptoms (check all that apply)?

☐ Chills ☐ Headache ☐ Muscle aches ☐ Vomiting ☐ Abdominal pain ☐ Diarrhea ☐ Other, Specify_____
In the 14 days before symptom onset, did the patient:

Does the patient have history of travel outside Eswatini? Which countries travelled to? ___ Date of departure from last country_____ Date arrived in Eswatini_____	☐ Y ☐ N ☐ Unknown
Have close contact* with a person who is under investigation for COVID-19?	☐ Y ☐ N ☐ Unknown
Have close contact* with a laboratory-confirmed COVID-19 case?	☐ Y ☐ N ☐ Unknown
Was the case ill at the time of contact?	☐ Y ☐ N ☐ Unknown
Is the case a local case	☐ Y ☐ N ☐ Unknown
Is the case an international case? In which country was the case diagnosed with COVID-19? _____	☐ Y ☐ N ☐ Unknown

Additional Patient Information

Is the patient a health care worker? ☐ Y ☐ N ☐ Unknown
Have history of being in a healthcare facility (as a patient, worker, or visitor) in affected country? ☐Y ☐N ☐ Unknown

Care for a nCoV patient? ☐ Y ☐ N ☐ Unknown
Is patient a member of a cluster of patients with severe acute respiratory illness (e.g., fever and pneumonia requiring hospitalization) of unknown etiology in which nCoV is being evaluated? ☐ Y ☐ N ☐ Unknown
Diagnosis (select all that apply): Pneumonia (clinical or radiologic) ☐ Y ☐ N Acute respiratory distress syndrome ☐Y ☐N
Comorbid conditions (check all that apply): ☐ None ☐ Unknown ☐ Pregnancy ☐ Diabetes ☐ Cardiac disease ☐ Hypertension
☐ Chronic pulmonary disease ☐ Chronic kidney disease ☐ Chronic liver disease ☐ Immunocompromised ☐ Other, specify
Is/was the patient: Hospitalized? ☐ Y, admit date_____ ☐ N Admitted to ICU? ☐ Y ☐ N
Intubated? ☐ Y ☐ N On ECMO? ☐ Y ☐ N Patient died? ☐ Y ☐ N

Does the patient have another diagnosis/etiology for their respiratory illness? ☐ Y, Specify_____ ☐ N ☐ Unknown

PLEASE TURN OVER

The Kingdom of Eswatini
Ministry of Health

Respiratory diagnostic results

Test	Pos	Neg	Pending	Not done
Influenza rapid Ag ☐ A ☐ B	☐	☐	☐	☐
Influenza PCR ☐ A ☐ B	☐ ☐	☐ ☐	☐ ☐	☐ ☐
RSV	☐	☐	☐	☐
H. metapneumovirus	☐	☐	☐	☐
Parainfluenza (1-4)	☐	☐	☐	☐
Adenovirus				
Rhinovirus/enterovirus	☐	☐	☐	☐

Test	Pos	Neg	Pending	Not done
	☐	☐	☐	☐
Coronavirus (OC43, 229E, HKU1, NL63)	☐	☐	☐	☐
M. pneumoniae	☐	☐	☐	☐
C. pneumoniae	☐	☐	☐	☐
Other, Specify_____				

Specimens for 2019-nCoV testing

Specimen type	Specimen ID	Date collected
NP swab	☐	
OP swab	☐	
Sputum	☐	
BAL fluid	☐	
Tracheal aspirate	☐	
Stool	☐	

Specimen type	Specimen ID	Date collected
Urine	☐	
Serum	☐	
Other, specify____	☐	
Other, specify____	☐	

* Close contact is defined as: a) being within approximately 6 feet (2 meters) or within the room or care area for a prolonged period of time (e.g., healthcare personnel, household members) while not wearing recommended personal protective equipment (i.e., gowns, gloves, respirator, eye protection); or b) having direct contact with infectious secretions (e.g., being coughed on) while not wearing recommended personal protective equipment. Data to inform the definition of close contact are limited. At this time, brief interactions, such as walking by a person, are considered low risk and do not constitute close contact.

Clinician's name_____ Phone_____ Email_____

Signature_____

Annex 2: Facility preparedness assessment tool

Facility Readiness Assessment Tool for Covid-19 Response

Date of Assessment: D D | M M | Y Y Y Y	Facility name:
Name of interviewer:	Facility type:
Organization interviewer:	Region:
Interviewees and their Job titles:	

1.	**Focal COVID-19 person**		**Comments**
1.1	Does the facility have an appointed overall COVID-19 coordinator/ focal person	[__] Yes [__] No	
2.	**Emergency Plans**		
2.1	Does this facility have an emergency preparedness plan for coronavirus?"	[__] Finalized plan for coronavirus [__] Draft plan for coronavirus [__] Emergency plan (not for coronavirus) [__] No emergency plan	
2.2	Are the following pillars included in the emergency preparedness plan?		
2.2.1	Facility level coordination	[__] Yes [__] No	
2.2.2	Risk communication and community engagement	[__] Yes [__] No	
2.2.3	Surveillance	[__] Yes [__] No	
2.2.4	Point of entry	[__] Yes [__] No	
2.2.5	Laboratory	[__] Yes [__] No	
2.2.6	Infection prevention and control	[__] Yes [__] No	
2.2.7	Case management	[__] Yes [__] No	
2.2.8	Operations and logistic support	[__] Yes [__] No	
3.	**Triage**		

3.1	Do you currently have a triage station for clients entering your facility?	[__] Yes [__] No	
3.2	Is your triaging happening at the gate?	[__] Yes [__] No	
3.3	Do you use standardized COVID-19 specific triaging questions?	[__] Yes [__] No	
3.4	Are all clients with cough provided with a face mask?	[__] Yes [__] No	
3.5	Is there a mechanism to fast track clients with increased vulnerability for COVID-19? (e.g. clients >60, clients with HPT, DM, COPD, etc)	[__] Yes [__] No	
4.	**Vital signs**		
4.1	Do you currently have a vital sign station for clients entering your facility?	[__] Yes [__] No	
4.2	Where is the vital sign station situated?		
4.3	Do you have thermometers?	[__] Yes [__] No	Indicate type:
4.4	Do you have pulse oximeters?	[__] Yes [__] No	Indicate number:
4.5	Do you have BP machines?	[__] Yes [__] No	Indicate number:
5.	**Isolation**		
5.1	Has this facility identified an area/ room for isolation of suspected COVID-19 clients?	[__] Yes [__] No	
5.2	Can the facility separate clients according to severity or risk factors?	[__] Yes [__] No	
5.3	Is the facility able to stabilize clients who may present with severe disease?	[__] Yes [__] No	
5.4	How many clients will you be able to keep in your facility before discharge or referral?	[__] Yes [__] No	
5.5	Is there a referral system in place for severe/ critically ill clients? If yes, explain.	[__] Yes [__] No	
6.	**Facility IPC Program**		
6.1	Does the facility have IPC Guidelines?	[__] Yes [__] No	

6.2	**IPC Inventory:** Indicate the SOH AMC of the following IPC materials	**SOH**	**AMC**	**Comment**
6.2.1	Hand soap			
6.2.2	Alcohol Hand Rub			
6.2.3	Paper towel			
6.2.4	Red Bin Liners			
6.2.5	Black Bin Liners			
6.2.6	Disinfectant (write name)			
6.3	**Essential PPE and other IPC supplies:** Indicate the SOH & AMC	**SOH**	**AMC**	**Comments**
6.3.1	Disposable gloves			
6.3.2	Surgical gloves			
6.3.3	Disposable Plastic aprons			
6.3.4	Long sleeved Disposable gowns			
6.3.5	Eye protection (visor, face shield/ goggles			
6.3.6	N95 Respirators			
6.3.7	Surgical Masks			
6.3.8	Domestic / Utility gloves (for waste handlers and cleaners)			
6.3.9	Aluminium pedal bins for waste			
6.3.10	Sharps containers			
7.	**Essential medicines and supplies**			
7.1	Are you able to provide oxygen therapy at your facility?	[__] Yes	[__] No	Indicate type of oxygen delivery system:
7.2	If not, indicate the reason:			
7.3	Indicate the missing equipment or supply for oxygen therapy (e.g. mask for adults/ nasal prongs for children):			
7.4	**Essential medicines and supplies:** Indicate SOH & AMC	**SOH**	**AMC**	**Comments**
7.4.1	Paracetamol			
7.4.2	Amoxicillin			
7.4.3	Ceftriaxone			

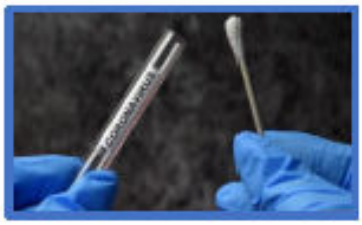
7.4.4	Erythromycin			
7.4.5	Azithromycin			
7.4.6	Crystalloid fluids (normal saline or ringer's lactate)			
7.4.7	Have you placed an order for additional stock of paracetamol and other medications needed for management of respiratory tract infections?	[__] Yes	[__] No	
8.	**Intensive care capacity and commodities (hospitals and health centres only)**			
	Indicate the availability and functionality of the following:	**Number available**	**Number functional**	**Comments**
8.1	Adult ventilation machine			
8.2	Adult laryngoscopes			
8.3	Paediatric laryngoscopes			
8.4	Endotracheal tubes with cuff			
8.5	Endotracheal tube without cuff			
9.	**Human Resources capacitation:** Indicate the total nr of staff in your facility and the nr trained on COVID-19			
		# number in facility	**# trained COVID**	**Comments**
9.1	Doctors			
9.2	Nurse			
9.3	Lab staff			
9.4	Phlebotomist/ HTS counsellor			
9.5	Expert clients			
9.5	Cough Officer			
9.6	Other			
10.	**IEC material**			
9.1	Do you have any COVID-19 IEC material available?	[__] Yes	[__] No	
9.2	Please specify available material:			
9.3	Have you started including COVID-19 in your morning health education sessions?	[__] Yes	[__] No	

Annex 3: Sample collection Job aid

Job Aid sample collection, handling and transporting of COVID-19 Nasopharyngeal, Oropharyngeal & Lower respiratory tract* Specimen

1

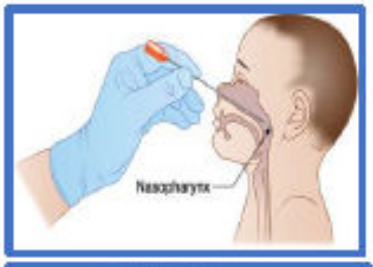
- Prepare the sample collection materials which include the swab, **viral transport medium (VTM)** (if available) and, **sample labelling**, and **Ziplock biohazard plastic bag**
- Open the swab container and remove the swab, taking care not to touch the tip to any surface or lay it down.

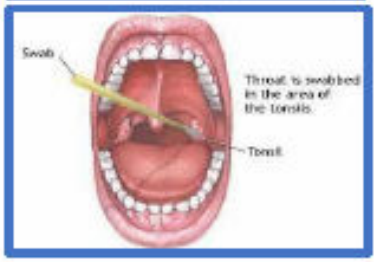


2

To take Nasopharyngeal (NP) swab, hold the swab with fingers placed on the score line. With the patient seated, if possible, tilt the head back 70 degrees, support the back of the head with your non-dominant hand.

- Gently insert swab into nostril along the septum floor of the nose extending straight back until the posterior nasopharynx is reached (distance from nostrils to external opening of ear)
- Rotate the swab several times while the swab is in contact with the nasopharyngeal wall and leave it for 3-5 seconds.
- Use **Oropharyngeal (OP) swab** (e.g., throat swab to collect specimen by swabbing the patient's posterior pharynx and tonsillar area (avoid the tonsils and tongue).
- Combine NP and OP if taken from one patient.





3

- Place swab into the VTM and break (snap) off the swab at the indicator line.
- Replace cap and screw cap securely

4

- Label sample with a least two patient identifiers, write **"NP"** or **"OP"** on the tube and place in biohazard bag
- Submit sample with a requisition form for COVID-19 testing. Please include the patient's address, phone number.

5

Lower respiratory tract specimen*: 2-3 ml (Bronchoalveolar Lavage, Tracheal Aspirate, sputum) can also be collected

- **Sputum:** Have the patient rinse the mouth with water and then expectorate deep cough sputum directly into a sterile, leak-proof, screw-cap sputum collection cup or sterile dry container.
- ***Do not induce sputum.***

6

Storage and Transport condition:

- *Store specimens at **2-8°C** for up to **72 hours** after collection. If available, the use of **VTM** is strongly recommended.*
- *If a delay in shipping is expected, store specimens at **-20°C or -70°C** or below and ship on **dry ice.***

Eswatini Health Laboratory Service

ICAP Empowering Health

Reference: CDC, WHO, and other sources, 23rd March 2020

Annex 4: National/ Regional Sample Transport Contact details

National Sample transport Manager: 7618-6855

Laboratory Network Cluster	Cluster Driver Contact no.
▪ Emkhuzweni Health center ▪ Piggs Peak Hospital	7639-5254
▪ Good Shepherd Hospital ▪ Lubombo Referral Hospital	7624-5100
▪ Siphofaneni Clinic ▪ Sithobela Health center	7637-8268
▪ Dvokolwako Health Center ▪ TB Hospital ▪ RFM Hospital	7608-9395 7633-1136
▪ Matsanjeni Health center ▪ Hlatikhulu Hospital ▪ Nhlangano Health center	7626-5728 7621-1355
▪ Mbabane Hospital ▪ Mankayane Hospital	7626-5728 7621-1355

Annex 5: National Early Warning Score (NEWS)

The following National Early Warning Score (NEWS) chart can be used to improve the detection and response to clinical deterioration in adult patients and is a key element of patient safety and improving patient outcomes.

Physiological parameter	Score 3	2	1	0	1	2	3
Respiration rate (per minute)	≤8		9–11	12–20		21–24	≥25
SpO_2 Scale 1 (%)	≤91	92–93	94–95	≥96			
SpO_2 Scale 2 (%)	≤83	84–85	86–87	88–92 ≥93 on air	93–94 on oxygen	95–96 on oxygen	≥97 on oxygen
Air or oxygen?		Oxygen		Air			
Systolic blood pressure (mmHg)	≤90	91–100	101–110	111–219			≥220
Pulse (per minute)	≤40		41–50	51–90	91–110	111–130	≥131
Consciousness				Alert			CVPU
Temperature (°C)	≤35.0		35.1–36.0	36.1–38.0	38.1–39.0	≥39.1	

NEW score	Clinical risk	Response
Aggregate score 0–4	Low	Ward-based response
Red score Score of 3 in any individual parameter	Low–medium	Urgent ward-based response*
Aggregate score 5–6	Medium	Key threshold for urgent response*
Aggregate score 7 or more	High	Urgent or emergency response**

* Response by a clinician or team with competence in the assessment and treatment of acutely ill patients and in recognising when the escalation of care to a critical care team is appropriate.

**The response team must also include staff with critical care skills, including airway management.

Source: https://www.england.nhs.uk/ourwork/clinical-policy/sepsis/nationalearlywarningscore/

Annex 6: QuickSOFA (qSOFA) score

The qSOFA score (also known as quickSOFA) is a bedside prompt that may identify patients with suspected infection who are at greater risk for a poor outcome outside the intensive care unit (ICU). The score ranges from 0 to 3 points.

	No	Yes	No	Yes	No	Yes
Altered mental status GCS<15						
Respiratory rate ≥ 22						
Systolic BP ≤ 100 mmHg						
qSOFA score	**1**		**2**		**3**	
Risk	Not high risk		High risk		High risk	
Management	If sepsis is still suspected, continue to monitor, evaluate and initiate appropriate treatment, including qSOFA assessments		▪ qSOFA Score 2-3 are associated with a 3-to 14 fold increase in in-hospital mortality. ▪ Assess for evidence of orgam dysfunction with blood testing including serum lactate and calculation of the full SOFA score. ▪ Patients meeting these qSOFA criteria shluld have infection considered even if it was previously not.		

Sepsis = acute change of ≥ 2 points in the qSOFA from baseline

Source: https://qsofa.org/what.php

Annex 7: Sequential organ failure assessment (SOFA) score

The sequential organ failure assessment (SOFA) score is used to track a patients status during the stay in an intensive care unit to determine the extent of a patients organ function or rate of failure.

Identification of early sepsis - Sequential Organ Failure Assessment (SOFA)

SOFA Score					
Variables	**0**	**1**	**2**	**3**	**4**
Respiratory PaO_2/FiO_2 mmHG	>400	≤400	≤300	≤200	≤100
Coagulation Platelets x $10^3/\mu L$	>150	≤150	≤100	≤50	≤20
Liver Bilirubin, mg/dL	<1.2	1.2-1.9	2.0-5.9	6.0-11.9	>12.0
Cardiovascular Hypotension	No hypotention	Mean arterial pressure <70 mm Hg	Dop ≤ 5 or dop (any dose)	Dop > 5, epi ≤ 0.1, or norepi ≤ 0.1 g	Dop < 15, epi > 0.1, or norepi > 0.1 g
Central nervous system GCS Score	15	13-14	10-12	6-9	<6
Renal Creatinine, mg/dL Or urine output, mL/day	<12	1.2-1.9	2.0-3.4	3.5-4.9 or <500	>5.0 or <200

SEPSIS = ACUTE CHANGE OF ≥ 2 POINTS IN THE SOFA FROM BASELINE

Annex 8: Summary of service provision check list by level of care

Services provision by level of care	Clinic level	Health centre and Hospital	Community
Public education on COVID -19 and IPC measures	Yes	Yes	Yes
Screening and triage	Yes	Yes	Yes
Isolation and close clinical monitoring of suspected cases	Yes	Yes	Yes
Symptomatic treatment	Yes	Yes	Yes
Oxygen therapy	Yes, while waiting for transfer patients	Yes while waiting for test results	No
Ventilation	No	Yes (during transport or in ICU only)	No
Eliciting Contact list	Yes	Yes	Yes
Specimen collection *(may need to call regional sample transport driver to collect specimen)*	Yes	Yes	Yes - through RRT
Referral	▪ Clients with mod to severe disease to next level of care ▪ Suspected cases for testing if not done on site.	▪ Confirmed cases to designated COVID facility ▪ Clients requiring ventilation and ICU care	▪ Suspected cases with new or worsening symptoms for medical care
Completion of notification form	Yes	Yes	Yes
Call 977	Yes	Yes	Yes