



THE REPUBLIC OF UGANDA  
MINISTRY OF HEALTH

# National Guidelines for Management of **COVID-19**

May, 2021



3rd Edition



## FORWARD

The overall goal of Uganda’s health system is to provide accessible, equitable and quality services to the population, in order to promote a healthy and productive life, which is a necessary factor for achieving socio-economic growth and national development.

Currently, the health system is faced with multiple challenges that include a high burden of infectious diseases that remain major causes of morbidity and mortality, such as HIV, malaria, tuberculosis, lower respiratory tract infections, malnutrition and meningitis. In addition, new threats keep emerging for example, Covid-19 pandemic, hepatitis B, yellow fever, haemorrhagic fevers and nodding disease. The increase of non-communicable conditions including diabetes, hypertension, heart disease, and mental disorders further complicates the scenario.

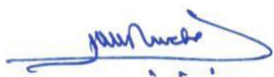
The push towards universal health coverage, including universal access to ART and particular attention to neonatal, child, adolescent and maternal health, also places more demands on a system with limited resources.

To respond appropriately, the health system has to ensure high standards of quality and efficiency in service delivery. The National Guidelines for the Management of Covid-19 will help the Uganda Clinical Guidelines to achieve these standards by presenting updated, practical and useful information on the diagnosis and management of the new Covid-19 pandemic, which is very new in the current health system in the whole world. The guidelines will provide a rational basis for an efficient procurement and supply system that ensures the availability of the procurement and supply system that ensures the availability of safe, efficacious, quality medicines and health supplies for this new pandemic in the country.

The guidelines are based on principles of scientific evidence, cost effectiveness and prioritization of Covid-19 conditions to maximize the health benefit with limited resources.

The regular updates of the National Guidelines for Management of Covid-19 will be one of the key interventions in the Health Sector Development Plan.

Therefore, I wish to thank the National Task Force and all stakeholders who participated in the development of this document.



**Dr. Henry G. Mwebesa**  
**Director General Health Services**  
**Ministry of Health**

## PREFACE

The Ministry of Health appointed a Task Force to come up with National Guidelines for Management of Covid-19 pandemic.

The purpose of the National Guidelines is to provide evidence-based, practical and implementable guidance to prescribers to provide the most cost effective and affordable treatment of priority health conditions on the new pandemic in the country.

The guidelines document is designed as a practical tool to support daily clinical practice by providing a reliable reference for health workers on appropriate management of the new deadly disease. It also gives health workers a reference tool to assess and measure service quality.

The guidelines are also the basis for the formulation of the essential medicines and health supplies list which will be used in the (EMHSLU) to guide in the supply and procurement of the required medicines and Personal Protective Equipment (PPEs). This allows for more efficient use of limited resource for the country.

The treatments described in the guidelines are the nationally recognized standard treatments, and in many cases, they are derived from those recommended in the Ministry of Health Vertical Programmes, World Health Organisation and other international guidelines.

The guidelines will be reviewed and updated through a six-month process involving extensive consultations with public health programme staff, medical experts and health workers of all cadres.

The Ministry of Health appreciates all those who participated in the development of National Guidelines for Management of Covid-19 Pandemic and I hope that they will make a significant contribution to our nation.



**Dr. Charles Olaro**

**Director Health Services| Curative Services**

**Ministry of Health**

## ACKNOWLEDGMENT

Uganda has a robust health sector development plan that seeks to, among other goals “accelerate movement towards Universal Health Coverage with essential health and related services needed for promotion of a healthy and productive life”. The health of the population is central to the socio- economic development of the country. Unfortunately, the COVID-19 pandemic significantly threatens to undermine and derail the gains the country has achieved in improving the health and socio-economic development of Uganda.

To ensure that the country responds adequately and mitigates the impact of the COVID-19 pandemic, the Ministry of Health (MOH) embarked on the development of these guidelines through a consultative, participatory and transparent process with the involvement of all stakeholders. This document will be used in response to the COVID-19 pandemic and is the first pragmatic step by the MoH in providing technical leadership in aligning and standardizing national and district management of COVID-19 suspected, probable and confirmed cases. These guidelines should be used by all health care providers in Uganda, including those working in the public and private sector.

The MOH has revised these guidelines in view of the rapidly changing pandemic and to allow for necessary adjustments.

The Ministry of Health would like to express its sincere appreciation to the leadership of the Case Management Pillar and its sub pillars: Clinical Care, IPC/WASH, Nutrition, Mental Health and Psychosocial Support, Emergency Medical Services and support from partners; WHO, UNICEF, UNHCR, CDC, USAID, IDI, Last Mile Health, Seed Global Health-Uganda, MAKCHS, Mulago NRH and all other key stakeholders and partners, who supported the development of these guidelines.



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## ACRONYMS

<b>ARDS</b>	Acute Respiratory Distress Syndrome
<b>BP</b>	Blood Pressure
<b>COVID-19</b>	Coronavirus disease
<b>CRP</b>	C-reactive protein
<b>CV</b>	Central Venous
<b>FiO<sub>2</sub></b>	Fraction of Inspired Oxygen
<b>HFNO</b>	High Flow Nasal Oxygen
<b>ICU</b>	Intensive Care Unit
<b>IPC</b>	Infection Prevention and Control
<b>IV</b>	Intravenous
<b>LFT</b>	Liver Function Test
<b>MERS</b>	Middle East Respiratory Syndrome
<b>PCR</b>	Polymerase Chain Reaction
<b>PEEP</b>	Positive End Expiratory Pressure
<b>PHEIC</b>	Public Health Emergency of International Concern
<b>PPE</b>	Personal Protective Equipment
<b>RR</b>	Respiratory Rate
<b>SARS</b>	Severe Acute Respiratory Syndrome
<b>SOP</b>	Standard Operating Procedure
<b>SpO<sub>2</sub></b>	Oxygen saturation

## **Executive Summary**

This 3rd edition of the National Guidelines for the Management of COVID-19 has been developed to reflect the evolving evidence on COVID-19 to meet the needs of front-line health care workers caring for patients with COVID-19 to ensure quality care. Many of the sections in the guidelines have been rewritten to provide clarity in the decision-making process by the clinician and other health professionals. The following bullets highlight the key changes:

A new Case definition for COVID-19 based on WHO criteria. A chart showing phased manifestations of Corvid 19 has been adopted. Some drugs have been removed from treatment recommendations while usage of others has been modified.

Recommendations for drugs to be used in research and compassionate use have been provided. New sections have been included on Home based care, Surgical guidelines and safe and dignified burial



# Background

## 1.1 Context

The Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) is a novel virus in humans and therefore has no population-level immunity. This virus belongs to the coronaviridae family grouped together in 1968 due to existence of crown-like appearances on their cell membrane. The virus is highly transmissible by droplets and attacks the respiratory, intestinal and brain tissues. Infection from SARS-CoV-2 results in coronavirus disease (COVID-19) with presentation that ranges from the asymptomatic to severe illness. Complications of the infection can result in death.

The seafood and animal market in Wuhan, China was implicated as the origin of the current COVID-19 outbreak. . The World Health Organization (WHO) was notified of this outbreak on December 31, 2019 and the causative agent was subsequently identified as SARS-CoV-2 on January 7, 2020 by the Chinese government. The reservoir host for the virus, however, remains unknown. In view of the rapid spread, the WHO upgraded the status of the outbreak to a Public Health Event of International Concern (PHEIC) on 30 January 2020 and subsequently declared the outbreak a pandemic on the 11th of March, 2020.

The early symptoms of COVID-19 including fever, myalgia, and fatigue might be confused with malaria and other febrile illnesses. This non-specific presentation can lead to challenges in early diagnosis and management. Since emergence of COVID-19 is occurring in concert with continuing endemic infectious disease activity, previous experiences of Ebola Virus Disease (EVD) outbreaks, for example, point to the need for malaria-endemic countries to not only consider preventive measures against COVID-19 threat but also its likely impact on existing malaria and other communicable disease control efforts.

While most people with COVID-19 experience mild or uncomplicated course, approximately 14% develop severe disease requiring hospitalization and oxygen support and about 5% need admission to the intensive care unit.

There is no definitive treatment for COVID-19 at this time, and the work on vaccine development is ongoing. The current standard of care is supportive with recommendations based on available evidence and information gleaned from other public health entities including the WHO interim guidance documents. The goal of clinical management of COVID-19 is to improve patient outcomes through supportive care to delay disease progression, management of severe disease, co-morbidities and addressing the psychosocial impact of the disease. This care will be contextualized in Uganda's health systems.

The Case Management Pillar collates approaches that will optimize care for all patients, especially the seriously ill, and minimize the impact of the pandemic on health systems, social services, and economic activity by slowing and stopping transmission.

## **1.2 Objectives of the Guidelines is to provide**

1. A standardized care pathway and package that will support timely decision making for management of COVID-19 cases, discharge planning and follow-up.
2. Guidance on integrated clinical management of the COVID-19 cases in context of other comorbidities.
3. Detail the measures necessary to prevent nosocomial spread of Covid-19 infection
4. Recommendations on Nutritional and Psychosocial support during and after management of Covid-19 illness.
5. Guidance on the management of special disease conditions and patient groups such as children and pregnant and breastfeeding women.
6. Information on occupational safety health measures for human resources involved in the management of Corvid 19 illness
7. Standards for Infection Prevention and Control measures.

## **1.3 Scope**

The document is meant for all Health workers and their institutions in public and private facilities at all levels of service delivery.

## **1.4 Clinical Signs and symptoms of COVID-19.**

The following classical symptoms are compatible with COVID-19 disease: fever, cough, myalgia, and fatigue, shortness of breath, sore throat and headache.

Other symptoms and signs may include: flu-like symptoms, diarrhea and nausea, shortness of breath, respiratory distress, and features of, renal failure, pericarditis and Disseminated Intravascular Coagulation (DIC).

It is important to know that many individuals with COVID-19 are asymptomatic. It is therefore paramount that all health workers observe strict infection prevention and control (IPC) measures at all time.

## **1.5 Case definition**

In order to enhance surveillance, early case detection, and management, the following case definitions have been developed for COVID-19. In March 2020, Uganda had few and sporadic imported and locally detected cases. Presently (June 2020), the country is recording a growing number of cases involving mostly long-distance truckers and their contacts, and healthcare workers. True community prevalence however will be determined from multiple unrelated clusters identified in representative samples areas of the country or case reports from sentinel laboratory surveillance. The table below adapted from WHO guidelines summarizes the suspect, probable, and confirmed case definitions, as well as elucidates who should be considered a contact.

**Table 1: COVID-19 Case Definitions**

# WHO COVID-19: Case Definitions

Updated in Public health surveillance for COVID-19, published 16 December 2020



World Health Organization

Case Definitions

## Suspected case of SARS-CoV-2 infection

**A** A person who meets the clinical **AND** epidemiological criteria:

**Clinical Criteria:**

- Acute onset of fever **AND** cough; **OR**
- Acute onset of **ANY THREE OR MORE** of the following signs or symptoms: Fever, cough, general weakness/fatigue<sup>1</sup>, headache, myalgia, sore throat, coryza, dyspnoea, anorexia/nausea/vomiting<sup>1</sup>, diarrhoea, altered mental status.

**AND**

**Epidemiological Criteria:**

- Residing or working in an **area with high risk of transmission of virus**: closed residential settings, humanitarian settings such as camp and camp-like settings for displaced persons; anytime within the 14 days prior to symptom onset; or
- Residing or travel to an **area with community transmission** anytime within the 14 days prior to symptom onset; or
- Working in **any health care setting**, including within health facilities or within the community; any time within the 14 days prior of symptom onset.

**B** A patient with **severe acute respiratory illness**: (SARI: acute respiratory infection with history of fever or measured fever of  $\geq 38\text{ }^{\circ}\text{C}$ ; and cough; with onset within the last 10 days; and requires hospitalization).

**C** Asymptomatic person not meeting epidemiologic criteria with a **positive SARS-CoV-2 Antigen-RDT**<sup>2</sup>

<sup>1</sup> Signs separated with slash (/) are to be counted as one sign.

<sup>2</sup> NAAT is required for confirmation, see [Diagnostic testing for SARS-CoV-2](#)

See [Antigen detection in the diagnosis of SARS-CoV-2 infection using rapid immunoassays](#)

**Note:** Clinical and public health judgment should be used to determine the need for further investigation in patients who do not strictly meet the clinical or epidemiological criteria. Surveillance case definitions should not be used as the sole basis for guiding clinical management.

## Probable case of SARS-CoV-2 infection

**A** A patient who meets **clinical criteria** above **AND** is a **contact of a probable or confirmed case**, or linked to a **COVID-19 cluster**<sup>3</sup>

**B** A **suspect case with chest imaging** showing findings suggestive of COVID-19 disease<sup>4</sup>

**C** A person with recent onset of **anosmia** (loss of smell) or **ageusia** (loss of taste) in the absence of any other identified cause.

**D** **Death**, not otherwise explained, in an adult with **respiratory distress** preceding death **AND was a contact of a probable or confirmed case** or linked to a **COVID-19 cluster**<sup>3</sup>

## Confirmed case of SARS-CoV-2 infection

**A** A person with a positive **Nucleic Acid Amplification Test (NAAT)**

**B** A person with a **positive SARS-CoV-2 Antigen-RDT** **AND** meeting either the **probable case definition** or **suspect criteria A OR B**

**C** An **asymptomatic person with a positive SARS-CoV-2 Antigen-RDT** who is a **contact of a probable or confirmed case**

<sup>3</sup> A group of symptomatic individuals linked by time, geographic location and common exposures, containing at least **one NAAT-confirmed case** or at least **two epidemiologically linked, symptomatic** (meeting clinical criteria of Suspect case definition A or B) persons with **positive Ag-RDTs** (based on  $\geq 97\%$  specificity of test and desired  $>99.9\%$  probability of at least one positive result being a true positive)

<sup>4</sup> Typical chest imaging findings suggestive of COVID-19 include the following:

- **Chest radiography**: hazy opacities, often rounded in morphology, with peripheral and lower lung distribution
- **Chest CT**: multiple bilateral ground glass opacities, often rounded in morphology, with peripheral and lower lung distribution
- **Lung ultrasound**: thickened pleural lines, B lines (multifocal, discrete, or confluent), consolidative patterns with or without air bronchograms.

## 2. COVID-19 Screening and Triage

Triage should follow one of the following three flow diagrams. The choice of algorithm will be determined by the disease activity in the country: ongoing sporadic or cluster transmission, occurrence of community transmission, and community case detection. While Uganda aims to contain the outbreak and isolate cases within a hospital setting, thresholds have been set to triage cases according to need. Both clinical condition and facility isolation capacity will determine if a suspect case will be admitted to an isolation unit within a health facility, a designated isolation unit outside a health facility, or advised to self-isolate at home.

**Threshold 1:** When more than **60% of the health facility** bed capacity dedicated to COVID-19 is still available and care for other conditions can still occur.

- All cases will be managed in isolation units at COVID-19-designated health facilities including Mulago NRH, Entebbe hospital, all RRH, designated private facilities, and selected district hospitals and HCIVs.

**Threshold 2:** When more than **60% of the health facility bed capacity dedicated to COVID-19** is used up by the COVID-19 confirmed and/ or suspect cases and/or is causing a major disruption of essential medical services.

- Isolation in health facility for severe COVID-19 confirmed or suspect cases, and those at higher risk of developing severe disease or complications due to co-morbidities.
- Isolation in other designated COVID-19 non-health care facility sites (e.g. schools, churches, stadium, gymnasiums, hotels or tents) for non-severe COVID-19 confirmed or suspect cases

**Threshold 3:** When the health facilities and other designated isolation sites are overwhelmed.

- Isolation in health facility for severe COVID-19 confirmed or suspect cases.

- Isolation in other designated COVID-19 non-health care facility sites (e.g. schools, churches, stadium, gymnasiums, hotels or tents) for non-severe COVID-19 confirmed or suspect cases at higher risk of developing severe disease or complications due to co-morbidities who need closer monitoring.
- Isolation at home for COVID-19 confirmed or suspect cases at low risk of developing complications, live in home that have space and amenities for home isolation (based on checklist) and do not have high-risk individuals in their households.

Note that all patients with significant comorbidities should be admitted to a hospital with care level commensurate with the comorbidities of concern.

Specific guidance on requirements for an isolation space for confirmed and suspected cases, and appropriate use of PPE to minimize risk of droplet transmission can be found in section 3

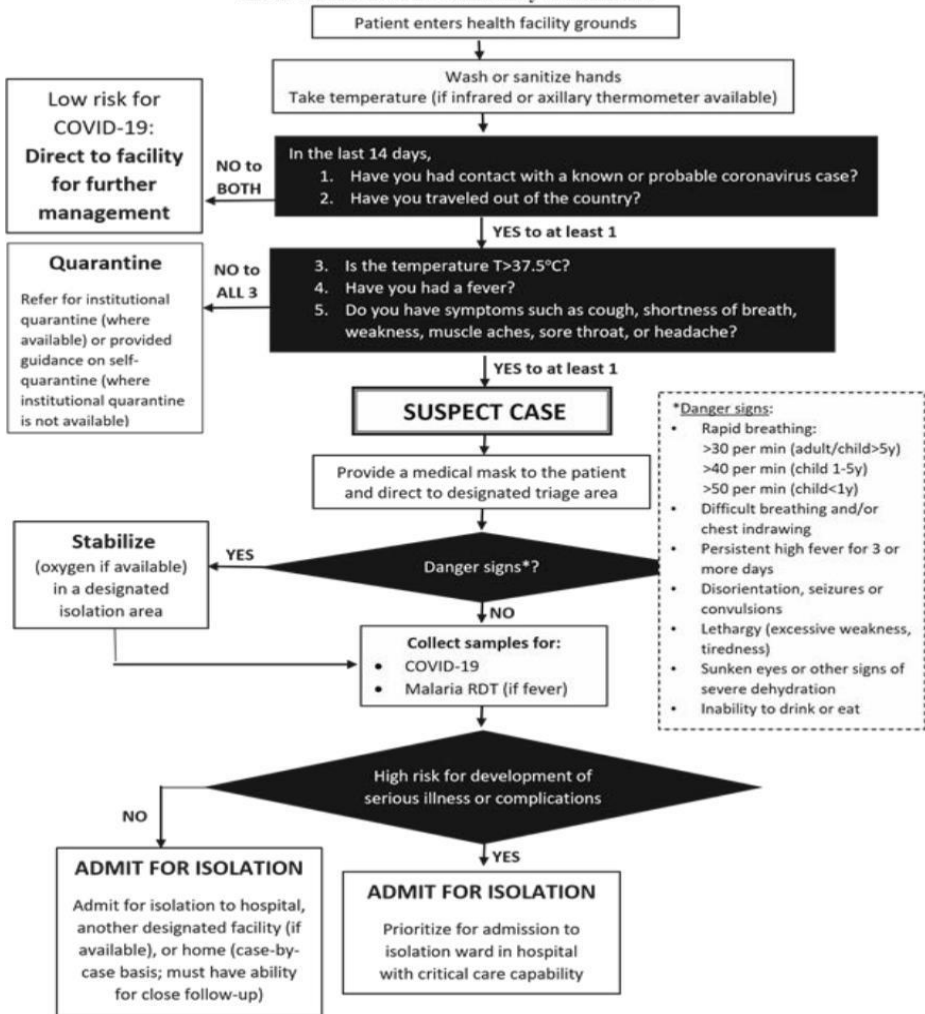
## **2.1 COVID-19 Screening and Triage process at the health facility**

COVID-19 triage aims to flag patients with acute respiratory infection (ARI) at first point of contact within the health care system in order to identify and rapidly address severe symptoms, rule-out other conditions with features similar to COVID-19, ascertain if suspect case definition is met, and protect other patients and staff from potential exposure to COVID-19.

At presentation to a facility, any individual with symptoms of acute respiratory infection (fever, cough, difficulty in breathing, muscle ache, running nose, sneezing, and sore throat) should be directed to a designated area away from other patients. A small team of health care workers with properly fitted PPE per guidance (section 3) should staff the triage area.



### Health facility triage algorithm for COVID-19 under conditions of no community transmission



## **2.2 Prioritizing hospital admission among COVID-19 suspect and confirmed cases**

Given that the vast majority (~80%) of COVID cases have a mild illness it is critical that the health facility inpatient isolation and high-level care beds are prioritized for those with severe disease, and those at risk for developing severe disease or complications.

Data from other countries demonstrates that ~14% will require oxygen therapy and ~5% will require intensive care unit treatment including mechanical ventilation. Furthermore, adequate bed capacity and staff need to be reserved in order to maintain quality care for non-COVID patients. Designating entire sections of a health facility solely to the treatment of the COVID-19 cases could decrease the potential transmission of COVID-19 to non-cases within the health facility.

If suspect and/or confirmed cases overwhelm the capacity of the hospital (space or human resource), individuals with any danger signs or who have any of the conditions listed should, be prioritized for hospital admission.



**Prioritize patients for hospitalization if any ONE danger sign or listed co-morbidity below is present: Table 2**

Danger signs	High risk of developing severe disease or complications
<ul style="list-style-type: none"> <li>• Rapid breathing: &gt;30 per minute (adult/child &gt;5y); ≥ 40 breaths per minute for children 1-5 years, ≥50 breaths per minute for children 2-11months.</li> <li>• Difficult breathing and/or chest in drawing</li> <li>• Persistent high fever for 3 or more days</li> <li>• Disorientation</li> <li>• Lethargy (excessive weakness, tiredness)</li> <li>• Seizures or convulsions</li> <li>• Sunken eyes or other signs of severe dehydration</li> <li>• Inability to drink or eat</li> </ul>	<ul style="list-style-type: none"> <li>• Age &lt; 1 year</li> <li>• Age &gt; 60 years</li> <li>• Cardiovascular conditions such as heart attack or stroke</li> <li>• Diabetes</li> <li>• Sickle cell disease</li> <li>• Cancer patients on/off chemotherapy</li> <li>• Liver disease</li> <li>• Person living with HIV</li> <li>• Lung diseases (e.g. asthma, TB, COPD)</li> <li>• Kidney disease</li> <li>• Severe Acute Malnutrition</li> </ul>

**2.3 Maintaining a high level of suspicion for COVID 19; among patients admitted for other reasons**

Early in the outbreak, clinicians must maintain a high level of suspicion for COVID-19 when there is a suspected presentation and inquire about any epidemiologic links to detect potential introduction into the healthcare facility. Identification of ARI clusters in inpatients within a healthcare facility might represent healthcare-associated COVID-19 transmission. With rising community transmission the likelihood of misdiagnosing COVID-19 at triage increases as does the likelihood of healthcare-associated transmission. Thus, continuous monitoring of the ward **for individuals with COVID-related symptoms and immediate transfer to the isolation unit is critical to avoid rapid spread**

## 2.4 Limiting entry of caregivers

Caregivers are critical to the well-being of admitted patients. They can also introduce COVID-19 into the hospital setting and are at risk of acquiring it. It is therefore recommended that caregivers' entry is avoided if possible or limited to one caregiver (with the required PPE) per patient at any given time. The caregiver is actively screened for symptoms of acute respiratory infection **Any caregiver with symptoms should go through the triage algorithm.**

## 3. Infection Prevention and Control

Infection Prevention and Control (IPC) is a critical and integral part of clinical management of patients, healthcare worker occupational safety and the mainstay mitigation measure to stop the spread of COVID-19. The World Health Organization recommends the following strategies for an effective IPC program against COVID-19 transmission in a healthcare setting:

1. Ensuring triage, early recognition, and source control  
(isolating patients with suspected COVID-19)
2. Applying standard precautions for all patients
3. Implementing empiric additional precautions (droplet and contact and, whenever applicable, airborne precautions) for suspected cases of COVID-19
4. Implementing administrative controls;
5. Using environmental and engineering controls.

### **3.1. Administrative and Environmental controls**

It is important that all healthcare workers receive the necessary support from the health facility administration in terms of training, provision of supplies and developing policies on the early recognition of acute respiratory infection potentially caused by SAR-CoV-2 virus and ensuring access to prompt laboratory testing for identification of the etiologic agents. Health facilities should also set up infrastructure to monitor compliance to the set IPC guidance, as well as surveillance for healthcare worker infections and provide mechanisms for mitigation or improvement.

COVID-19 is transmitted predominantly through respiratory droplets and contaminated hands. Health workers should therefore be provided with the necessary infrastructure to perfume hand hygiene and should maintain a 2 m spatial separation between themselves and the patients and wear appropriate PPE as per the recommendations.

A dedicated well-ventilated waiting area for symptomatic patients should be identified as well as an area for isolating hospitalized patients with COVID-19. These areas should have restricted access, with signage to minimize hospital exposure to other staff and patients.

### **3.2. Personal Protective Equipment**

Contact and droplets precautions should be practiced consistently by health workers caring for patients with COVID-19. Airborne precautions is indicated for aerosol-generating procedures and support treatments. Although use of PPE is the most visible control used to prevent the spread of infection, it is only one of the IPC measures and should not be relied on as a primary prevention strategy. In the absence of effective administrative and engineering controls, PPE has limited benefit.



Selection of PPE should be guided by appropriate risk assessment. In view of the global PPE shortage, strategies that facilitate optimal PPE availability should be adopted. These include:


- Minimizing the need for PPE in health care settings
- Ensuring rational and appropriate use of PPE
- Coordinating PPE supply chain management


Some of the guiding principles for rational use of PPE in a healthcare setting are:

- The type of PPE used when caring for COVID-19 patients will vary according to the setting, type of personnel, and the task.
- Health care workers involved in the direct care of patients should use PPE according to indications
- Specifically, for aerosol-generating procedures and support treatments (tracheal intubation, noninvasive ventilation, tracheotomy, cardiopulmonary resuscitation, manual ventilation before intubation, nebulization, and bronchoscopy) health care workers should use respirators, eye protection, gloves and gowns; aprons should also be used if gowns are not fluid resistant.

**Table 3. Below summarizes the PPE recommendations for the various patient care activities**

Level	Setting	PPE
<p><b>Level 1</b> (no interaction with patients)</p> 	<p>In the community or in the health facility where there is no interaction with patients (e.g., administrative areas; cafeterias), including VHTs when not interacting with household members</p>	<p><b>Cloth mask</b>, home clothes/scrubs with closed shoes.</p>
<p><b>Level 2</b> (patient interaction without contact)</p> 	<ul style="list-style-type: none"> <li>• Screening at entry points</li> <li>• Ambulance drivers</li> <li>• Care for non-suspect patients with no respiratory symptoms, including VHTs while interacting with household members</li> </ul>	<p><b>Disposable medical/surgical mask</b></p> <p>* <b>facial protection</b> (face shield or goggles) should be used when unable to maintain 2m social distance</p>

<p><b>Level 3</b> (patient contact, no risk of aerosols)</p> 	<ul style="list-style-type: none"> <li>• Caring for suspected or confirmed COVID-19 patients with no aerosol risk</li> <li>• Transfer of suspect/confirmed patients</li> <li>• Collection of respiratory samples</li> <li>• Cleaners</li> <li>• Preparing a deceased body</li> </ul>	<p>Facial protection (face shield or goggles), gloves (x2), N-95 mask, shoe covers/gum boots, hair cover ss(for long hair or large hairdos) and Coveralls</p> <p>OR</p> <p>Facial protection (face shield or goggles), gloves (x2), N-95 mask, shoe covers/gum boots, hair cover (for long hair or large hairdos) and Gown with hood covering head, neck and shoulders</p> <p>*Add a plastic apron if gown is not water resistant</p>
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<p><b>Level 4</b> (risk of aerosols with or without patient contact)</p> 	<ul style="list-style-type: none"><li>• Aerosol generating procedures (AGPs) involving a suspect or confirmed COVID-19 patient [e.g., bronchoscopy, tracheal intubation, CPR, airway suctioning, sputum induction, NG tube placement, non-invasive ventilation (CPAP; BIPAP), high-flow nasal cannula oxygenation]</li><li>• Caring for suspected or confirmed COVID-19 patients in an ICU or HDU (where AGPs are common)</li><li>• Laboratory personnel</li><li>• Autopsy</li></ul>	<p>Level 3 PPE with Positive Pressure Devices</p>
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### 3.3 Waste management

- Best practices for safely managing health-care waste should be followed, including assigning responsibility and liberal human and material resources to segregate and dispose of waste safely.
- There is no evidence that direct, unprotected human contact during the handling of health-care waste has resulted in the transmission of the COVID-19 virus.
- All health-care waste produced during patient care, including those with confirmed COVID-19 infection, is considered hazardous (infectious, sharps and pathological waste) and should be collected safely in clearly marked lined containers and sharp safe boxes.
- This waste should be treated, preferably on-site, and then safely disposed of. If waste is moved off-site, it is critical to understand where and how it will be treated and disposed of.
- Waste generated in waiting areas of healthcare facilities can be classified as non-hazardous and should be disposed in strong black bags and closed completely before collection and disposal by municipal waste services.
- All those who handle health-care waste should wear appropriate PPE (boots, long-sleeved gown, heavy-duty gloves, mask, and goggles or a face shield) and perform hand hygiene after removing it.
- After handling the waste and once there is no risk of further exposure, individuals should safely remove their PPE and perform hand hygiene before entering the transport vehicle.

*Refer to Annex 4. for more details*



### **3.4 Linen management**

- Linen should be laundered and the surfaces where COVID-19 patients receive care should be cleaned and disinfected frequently (at least once a day), and after a patient is discharged.
- All individuals in charge of environmental cleaning, laundry and dealing with soiled bedding, towels and clothes from patients with COVID-19 infection should wear appropriate PPE, including heavy-duty gloves, a mask, eye protection (goggles or a face shield), a long-sleeved gown, and boots or closed shoes.
- Heavily Soiled linen should be placed in clearly labelled, leak-proof bags or containers, after carefully removing any solid excrement and putting it in a covered bucket to be disposed of in a toilet or latrine.
- Machine washing with warm water at 60–90°C and laundry detergent is recommended. The laundry can then be dried according to routine procedures.
- If machine washing is not possible, linens can be soaked in hot water and soap/detergent in a large drum using a stick to stir, taking care to avoid splashing.
- The drum should then be emptied, and the linens soaked in 0.5% chlorine for approximately 30 minutes.
- Finally, the laundry should be rinsed with clean water and the linens allowed to dry fully, if possible in sunlight.

## **3.5 Environmental Cleaning and disinfection**

Environmental surfaces in health-care settings include furniture and other fixed items inside and outside of patient rooms and bathrooms, such as tables, chairs, walls, light switches and computer peripherals, electronic equipment, sinks, toilets as well as the surfaces of non-critical medical equipment, such as blood pressure cuffs, stethoscopes, wheelchairs and incubators.

Environmental surfaces are more likely to be contaminated with the COVID-19 virus in health-care settings where certain medical procedures are performed. Therefore, these surfaces, especially where patients with COVID-19 are being cared for, must be properly cleaned and disinfected to prevent further transmission.

### **3.5.1 Principles of environmental Cleaning**

Cleaning helps to remove pathogens or significantly reduce their load on contaminated surfaces and is an essential first step in any disinfection process.

Organic matter can impede direct contact of a disinfectant to a surface and inactivate the germicidal properties or mode of action of several disinfectants. Therefore, a chemical disinfectant, such as chlorine or alcohol, should be applied after cleaning to kill any remaining microorganisms.

Disinfectant solutions must be prepared and used according to the manufacturer's recommendations for volume and contact time. High concentrations increase chemical exposure to users and may also damage surfaces. Enough disinfectant solution should be applied to allow surfaces to remain wet and untouched long enough for the disinfectant to inactivate pathogens, as recommended by the manufacturer.

### **3.5.2. Frequency of cleaning/Disinfection**

Particular attention should be paid to environmental cleaning of high-touch surfaces and items, such as light switches, bed rails, door handles, intravenous pumps, tables, water/beverage pitchers, trays, mobile cart rails and sinks, which should be performed frequently.

After cleaning, the following disinfectants and defined concentrations can be used on environmental surfaces:

- Ethanol 70-90%
- Chlorine-based products (e.g., hypochlorite) at 0.5% for both general environmental disinfection and blood and body fluids spillages
- Hydrogen peroxide >0.5%

**Table 4; Frequency of disinfection of various Hospital settings**

Patient area	Frequency	Additional guidance
Screening/triage area	At least twice daily	Focus on high-touch surfaces, then floors (last)
Inpatient rooms / cohort – occupied	At least three times daily preferably for high touch surfaces	Focus on high-touch surfaces, starting with shared/common surfaces, then move to each patient bed; use new cloth for each bed if possible; then floors (last)
Inpatient rooms – unoccupied (terminal cleaning)	Upon discharge/transfer	Low-touch surfaces, high-touch surfaces, floors (in that order), waste & linens removed, bed thoroughly cleaned and disinfected.
Outpatient / ambulatory care rooms	After each patient visit (in particular for high-touch surfaces) and at least once daily terminal clean	High-touch surfaces to be disinfected after each patient visit  • Once daily low-touch surfaces, high-touch surfaces, floors (in that order); waste and linens removed, examination bed thoroughly cleaned and disinfected
Hallways / corridors	At least twice daily	High-touch surfaces including railings and equipment in hallways, then floors (last)

<p>Patient bathrooms/ toilets</p>	<p>Private patient room toilet: at least twice daily</p> <p>Shared toilets: at least three times daily</p>	<p>High-touch surfaces, including door handles, light switches, counters, faucets, then sink bowls, then toilets and finally floor (in that order)</p> <p>Avoid sharing toilets between staff and patients</p>
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### 3.5.3. Guidance on spraying disinfectants

In indoor spaces, routine application of disinfectants to environmental surfaces by spraying or fogging (also known as fumigation or misting) is not recommended for COVID-19. Spraying disinfectants can result in risks to the eyes, respiratory or skin irritation and the resulting health effects. Spraying or fogging of certain chemicals, such as chlorine-based agents is not recommended due to adverse health effects on workers in facilities where these methods have been utilized.

Spraying or fumigation of outdoor spaces, such as streets or marketplaces, is also not recommended to kill the COVID-19 virus or other pathogens because disinfectant is inactivated by dirt and debris and it is not feasible to manually clean and remove all organic matter from such spaces.

Spraying individuals with disinfectants (such as in a tunnel, cabinet, or chamber) is not recommended under any circumstances. This could be physically and psychologically harmful and would not reduce an infected person’s ability to spread the virus through droplets or contact.

In non-health care settings, resource limitations permitting, where disinfectants are being prepared and used, the minimum recommended PPE is rubber gloves, impermeable aprons and closed shoes. Eye protection and medical masks may also be needed to protect against chemicals in use or if there is a risk of splashing.

### **3.6. Routine screening triage of health care workers**

Since HCW are in close contact with patients on a daily basis, HCWs are high risk for becoming infected with COVID-19, particularly in the community transmission scenario. Enhancing identification of exposed HCWs and ultimately, those that become infected is, therefore, important to minimize transmission and health worker force shortages. Hospitals should establish a system as part of the IPC work at the facility to remind or prompt HCWs to self-assess and report symptoms consistent with COVID-19.

- HCW should be actively screened at the beginning of their shift, their temperature and/or any symptom should be documented and signed off by the IPC nurse. This should be done using the tool in Annex 2.2.1.
- If symptomatic, the health workers should be tested and isolated until results have been released. It paramount that health worker that were previously in contact with confirmed or suspected Covid-19 patients without appropriate PPE vigilantly report exposure.
- Furthermore, exposure related to bleach in PPE or risk procedure should be reported to the IPC nurse. These exposures should be thoroughly investigated using the WHO adapted questionnaire and appropriate action or recommendation instituted immediately. This should be done using the risk assessment checklist in Annex 2.2.2

All exposed health worker and those that are symptomatic or test positive should be reported to the National IPC committee and Incidence Management Team.

## 4. Clinical Management of COVID-19

The goal in clinical management of cases is to reduce morbidity and mortality while minimizing the risk of transmission to uninfected contacts. An essential element in achieving this goal is early identification of patients who are severely ill and require hospital or ICU admission.

### **The management is guided by the following categories;**

**Mild COVID-19:** This includes asymptomatic cases or Patients with uncomplicated upper respiratory tract viral infection. These may have nonspecific symptoms as described in table 4.2 below. These cases could be managed outside of the hospital should inpatient capacity be insufficient.

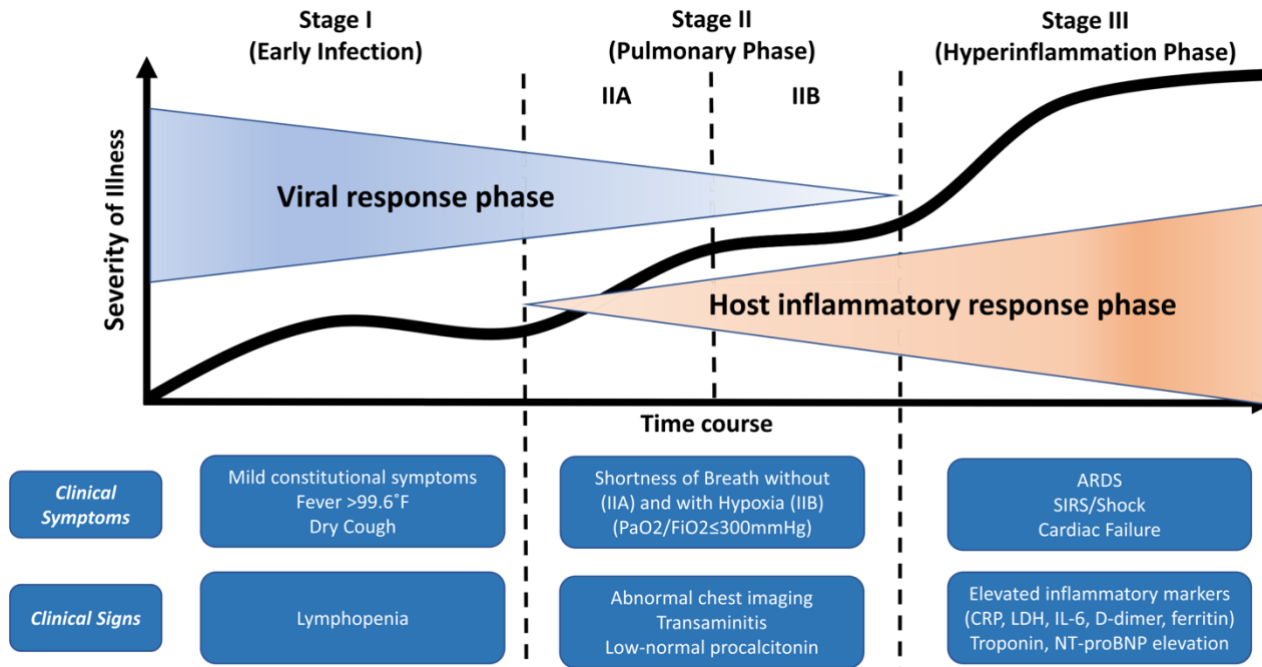
**Moderate COVID-19:** This refers to cases that present as pneumonia without a need for oxygen.

**Severe COVID-19** require hospital level interventions including oxygen therapy. In a situation where bed capacity is limited, priority should be given to cases with severe disease or those likely to develop severe disease or complications (see table in section 2.2).

**Critical COVID-19;** these are patients who present with ARDS, sepsis and septic shock. These should be managed in either High dependence or Intensive care units.

**The clinician shall fill the Case Report form for each client as shown in the Annex 3.**

## STAGES OF VIRAL RESPONSE AND HOST INFLAMMATORY RESPONSE





**Table 5: CLINICAL MANAGEMENT OF CONFIRMED COVID-19 PATIENT**

DISEASE	SYMPTOMS (DIAGNOSTIC	TREATMENT
PRESENTATION	CRITERIA)	
<b>Mild COVID-19</b>	<p>Patients may be asymptomatic or present with uncomplicated upper respiratory tract viral infection, may have non-specific symptoms such as fever, cough, sore throat, nasal congestion, malaise, headache, muscle pain or malaise.</p> <p>The elderly and immunocompromised</p> <p>may present with atypical symptoms. These patients do not have any signs of dehydration, sepsis or shortness of breath.</p>	<p><b>Isolation is necessary to contain virus Transmission (When no community transmission) (refer to section 2.)</b></p> <ul style="list-style-type: none"> <li>- Ensure appropriate IPC practices to prevent or minimize risk of transmission</li> </ul> <p><b>TREATMENT FOR ADULTS AND CHILDREN &gt; 12 YEARS</b></p> <p><b>Supportive</b></p> <p>If fever <math>\geq 37^{\circ}\text{C}</math>, give Paracetamol 1gm three times a day for 3 days (adults) (lower if liver injury or disease suspected)</p> <p>Tabs Vitamin C no longer recommended as it carries no therapeutic benefit.</p> <p>Give Vitamin D 1200 mg daily for one month among those demonstrated to be deficient by laboratory test or empirically among older persons who stay indoors</p> <ul style="list-style-type: none"> <li>• Tabs Zinc 20mg once daily for 14 days</li> </ul> <p><b>CHILDREN &lt; 12 years</b></p> <p><b>Supportive</b></p> <p>If fever <math>\geq 37^{\circ}\text{C}</math>, , give Paracetamol 10 - 15mg/</p>



<p><b>Moderate COVID-19 - Pneumonia</b></p>	<p>Patient with pneumonia without features of severe pneumonia and no signs of severe pneumonia.</p> <p><b>Child:</b> with non-severe pneumonia Symptoms: include has cough or difficulty breathing + tachypnea (fast breathing): and no signs of severe pneumonia <b>Tachypnea in children by age:</b> fast breathing</p> <table border="1" data-bbox="400 516 842 717"> <thead> <tr> <th>Age</th> <th>Respiratory rate Breaths /minute</th> </tr> </thead> <tbody> <tr> <td>&lt; 2 months</td> <td>≥ 60</td> </tr> <tr> <td>2 – 11 months</td> <td>≥ 50</td> </tr> <tr> <td>1 –5 years</td> <td>≥ 40</td> </tr> </tbody> </table>	Age	Respiratory rate Breaths /minute	< 2 months	≥ 60	2 – 11 months	≥ 50	1 –5 years	≥ 40	<p><b>ADULTS AND CHILDREN ≥ 12 YEARS</b></p> <ul style="list-style-type: none"> <li>• Start tabs Azithromycin 500mg once daily for 5 days</li> <li>OR Tabs Amoxicillin 500mg TDS for 1 week</li> <li>• Tabs Zinc 20mg once daily for 14 days</li> <li>• Vitamin D 800 IU once daily for 1 month</li> <li>• Tabs Vitamin C no longer recommended</li> </ul> <p><b>CHILDREN 6 -11 years</b></p> <p>Amoxicillin 500 mg-1 g every 8 hours for 5 days                  Tabs Zinc 20mg once daily for 14 days (&lt;6 months 10 mg daily for 14 days)                  Vitamin D 800 IU once a day for one month</p> <p><b>CHILDREN ≤ 5</b></p> <p>Oral amoxicillin dispersible tabs (DT) 40 mg/kg/dose every 12 hours for 5 days</p> <ul style="list-style-type: none"> <li>• 2 - 11 months 250 mg (1 tab) every 12 hours for 5 days</li> <li>• 1-3 years 500 mg (2 tabs) every 12 hours for 5 days</li> <li>• 4-5 years 750 mg (3 tabs) every 12 hours for 5 days</li> </ul>
Age	Respiratory rate Breaths /minute									
< 2 months	≥ 60									
2 – 11 months	≥ 50									
1 –5 years	≥ 40									

	<p><b>Adults' symptoms:</b> chest pain, fast breathing of <math>\geq 20</math> breath per minute but have normal SpO<sub>2</sub> in room air. +/- pulmonary infiltrate on Chest x-ray</p>	<ul style="list-style-type: none"> <li>- Dispersible tablet is preferred in younger Children</li> <li>- Vitamin D 400IU once daily for 1 month</li> <li>- Tabs Vitamin C no longer recommended</li> </ul>
<p><b>Monitoring for Mild and Moderate</b></p>	<ul style="list-style-type: none"> <li>·Temperature, mental state, heart rate, respiratory rate, blood pressure at least 2 to 3 times a day</li> <li>·Review any laboratory and imaging results done at baseline and repeat if indicated or clinical deterioration</li> <li>·Repeat RT-PCR test no longer recommended for cases whose symptoms have resolved</li> </ul>	
<p><b>Severe COVID-19 Severe Pneumonia</b></p>	<p>Adolescent or adult: fever or suspected respiratory infection, PLUS one of the following: ·respiratory rate &gt;30 breaths/min, ·severe respiratory distress, or ·SpO<sub>2</sub> &lt;92% on room air.</p> <p>Child: with cough or difficulty in breathing, PLUS at least one of the following:</p>	<p><b>ADULTS and CHILDREN <math>\geq 12</math> YEARS</b></p> <ul style="list-style-type: none"> <li>• Immediately give oxygen therapy if hypoxemia (SPO<sub>2</sub> &lt;92% on room air). Target SPO<sub>2</sub> &gt;92%-96%. Refer to 4.3 for more details</li> <li>• Azithromycin no longer recommended</li> <li>• Start tabs co-amoxiclavulanic acid 625mg twice a day for 7 days if the patient is able to take orally OR IV ceftriaxone 2g once a day for 7 days</li> </ul>

	<p>• central cyanosis or SpO<sub>2</sub> &lt;90%; •severe respiratory distress (e.g. grunting, very severe chest in drawing) •; signs of pneumonia with a general danger sign</p> <p>•: inability to breastfeed or drink •, lethargy or unconsciousness, or convulsions.</p> <p>•Other signs of pneumonia in children may be present: chest in drawing, fast breathing (in breaths/min) : &lt;2</p> <p>&lt; 2months; ≥ 60 breaths/min</p> <p>; 2–11 months; ≥ 50 breaths/min; 1–5 years: , ≥ 40.2 breaths/min</p> <p>The diagnosis is clinical; chest imaging can exclude complications (empyema, pleural effusion etc.).</p>	<p>(co-amoxiclavulanic acid or ceftriaxone may be changed as guided by culture and sensitivity results)</p> <ul style="list-style-type: none"> <li>• Tabs vitamin C no longer recommended</li> <li>• Tabs Zinc 20 mg daily for 14 days</li> <li>• IV dexamethasone 6-10 mg daily for up-to 10 days without tapering and while monitoring blood sugars</li> <li>• Sub cut Clexane ranging from 40 mg daily to 80 mg twice daily</li> <li>• Give Vitamin D 1200 mg daily for one month among those demonstrated to be deficient by laboratory test or empirically among older persons who stay indoors</li> </ul> <p><b>CHILDREN &lt; 12 years</b></p> <p>Give intravenous ampicillin (or benzyl penicillin) and gentamicin</p> <ul style="list-style-type: none"> <li>• Ampicillin 50 mg/kg IV every 6 h for at least 5 days.</li> <li>• Gentamicin 7.5 mg/kg IM or IV once a day for at least 5 days.</li> </ul> <p>If not improving better;</p> <ul style="list-style-type: none"> <li>• ceftriaxone 1 g IV or IM every 24 hours</li> <li>• Child: 50 mg/kg per dose (max: 1 g)</li> </ul> <p><b>Adjunctive Therapy</b></p> <p>-Tabs Zinc 20mg once daily for 14 days (&lt; 6 months 10 mg once daily for 14 days ) Dispersible tablet is preferred s in younger children</p> <p>•Tabs Vitamin C no longer recommended</p> <ul style="list-style-type: none"> <li>•1 month to 4 years – 125-250 mg daily in one or two divided doses</li> <li>•5-12 years – 250 - 500mg in one –two divided doses</li> </ul>
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**Monitoring for Severe disease (At least hourly)**

**Adults or Adolescents:** Use the NEWS 2 Score for monitoring, interpretation and intervention. Annex 3.

**Children (<12 years):** Use the PEWS score for monitoring, interpretation and intervention Annex 3.3

Review any other laboratory and imaging results done at baseline and repeat if indicated or If clinical deterioration

**Critical COVID-19**

**Acute Respiratory Distress Syndrome (ARDS)**

Onset: Within a week of a known clinical disease (i.e. pneumonia) or new worsening respiratory symptoms

**Chest imaging (CXR, CT or Lung US):** bilateral opacities not fully explained by volume overload, lobar or lung collapse

Bedside echo may be needed to exclude cardiac causes if risk factors are present.

**Oxygenation impairment on PEEP or CPAP  $\geq 5\text{cmH}_2\text{O}$  (Adults):**

In case blood gas analysis is available use  $\text{PaO}_2/\text{FiO}_2$  ratio;

Mild ARDS:  $\text{P}/\text{F}$  201 – 300 Moderate ARDS:  $\text{P}/\text{F}$  101 – 200 Severe ARDS:  $\text{P}/\text{F} \leq 100$

In case no blood gas analysis available, use  $\text{SpO}_2/\text{FiO}_2$  ratio (Ensure  $\text{FiO}_2$  is targeted to maintain  $\text{SpO}_2 < 97\%$ );

Mild ARDS:  $\text{S}/\text{F}$  236 – 315 Moderate ARDS:  $\text{S}/\text{F}$  151 – 235 Severe ARDS:  $\text{S}/\text{F} \leq 150$

**Oxygenation impairment on NIV or IPPV (Children):**

NIV ( $\geq 5\text{cmH}_2\text{O}$ ): P/F  $\leq 300$  or S/F  $\leq 264$

On invasive MV;

Mild PARDS:  $4 \leq \text{OI} < 8$  or  $5 \leq \text{OSI} < 7.5$  Mod PARDS:  $8 \leq \text{OI} < 16$  or  $7.5 \leq \text{OSI} < 12.3$  Severe PARDS:  $\text{OI} \geq 16$  or  $\text{OSI} \geq 12.3$

**Management**

**ARDS should be managed in an intensive care unit with appropriate facility and medical expertise. Critical care triage can be found in the Annex 1.2**

**A: Recognize severe hypoxemic respiratory failure refractory to conventional oxygen therapy.**

- This may manifest as patients continuing to have increased work of breathing or hypoxemia with  $\text{SpO}_2 < 92\%$  on  $\text{NRM} > 12\text{L}/\text{min}$

**B: Trial of High Flow Nasal Cannula (HFNC):** in relatively stable hypoxemic patients. Target  $\text{SpO}_2 \geq 80\%$  if patient remains stable (no other emergency signs).

**C: Trial of NIV (BiPAP, CPAP by nasal mask, face mask, nasal plugs):** in relatively stable hypoxemic patients with exacerbated COPD, cardiogenic pulmonary edema. Target  $\text{SpO}_2$  88-92% if the patient remains stable (and no other emergency signs).

**D:** Intubation should not be delayed if the patient acutely deteriorates or doesn't improve after a short trial.

**E: IF trained and experienced professional (anesthesiologist / critical care specialist) is present, endotracheal intubation should be performed IMMEDIATELY using airborne precautions.**

**F: Implement mechanical ventilation:** use low tidal volume (4–8 ml/kg predicted body weight, PBW) and low inspiratory pressures (plateau pressure  $\leq$  28 cmH<sub>2</sub>O and driving pressure  $\leq$  15 cmH<sub>2</sub>O). For patients with better preserved static compliance, we recommend high tidal volume (7-8ml/kg PBW). For children (<12 years); with preserved good compliance, 5-8ml/kg PBW and PARDS; 3-6ml/kg).

**G:** We recommend targeted sedation/analgesia to ventilator synchrony; when synchronous, target light sedation with RASS 0 to -2. When asynchronous, target deeper sedation to attain synchrony. Unless contraindicated, daily Spontaneous Awakening Trials (SAT) are strongly recommended.

**H:** We suggest PEEP individualization; titration of PEEP while monitoring patient's plateau pressure and driving pressure for benefit or harm is vital for COVID-19 ARDS

**I: In patients with severe ARDS P/F < 150 or S/F<150, prone ventilation for 12-16 hours per day is recommended and** application of prone ventilation is strongly recommended for adult and pediatric patients with severe ARDS.

**J:** In Severe ARDS (P/F <150); we recommend neuromuscular blockade for only refractory hypoxemia or hypercapnia, ventilator dyssynchrony despite adequate sedation. We recommend restricting neuromuscular blockade to 48 hours.

**K:** Use of a conservative fluid management strategy for ARDS patients without tissue hypo perfusion is strongly recommended.

**L:** Avoid disconnecting patient from the ventilator which results into loss of PEEP, atelectasis and increased risk of infection to Health care workers



**Give empirical broad-spectrum IV antimicrobials within the first hour. This is crucial.**

Obtain samples for gram staining and culture/sensitivity where possible prior to initiating antibiotic therapy BUT do not delay initiation antibiotic therapy for this reason. Use test result to guide subsequent antibiotic choice. **A: Adults & Adolescents:**

- **For patients without risk of MDROs (MRSA or Pseudomonas):** Give Ceftriaxone 1 g daily IV 30-60mins and Tabs Azithromycin 500mg once daily for 5-7 days
- **For patients with risk of MDROs:** Give IV Carbapenem (over 30-60mins) OR IV Gentamycin 7 mg/kg/ day for 7-10days OR IV Amikacin 15-20mg/kg/dose OD for 7 days.
- When staphylococcal infection is strongly suspected, give flucloxacillin at 2g every 6 h IV plus IV gentamicin at 7 mg/kg once a day (Consider risk of kidney injury with aminoglycosides)
- Monitoring of biomarkers like C - reactive protein and Procalcitonin is recommended where available.

**Adjunctive Therapy**

- Tabs Vitamin C 500mg via nasogastric tube (NGT).
- Tabs Zinc 20mg daily for 14 days or more

**B: Children <12 years**

**For children without risk of MDROs (MRSA or Pseudomonas):**

- Start antibiotics immediately.

- **Give IV ampicillin at 50 mg/kg every 6 h plus IV gentamicin 7.5 mg/kg once a day for 7–10** days; alternatively, give ceftriaxone at 80–100 mg/kg IV once daily over 30–60 min for 7–10 days.
- When staphylococcal infection is strongly suspected, give flucloxacillin at 50 mg/kg every 6 h IV plus IV gentamicin at 7.5 mg/kg once a day.

**For patients with risk of MDROs:** Give IV Piperacillin + Tazobactam (over 30-60mins) 80mg/kg 6-8hrly for 7-10 days OR IV Cefepime (over 30-60min) 50mg/kg 8hrly for 7-10 da

### **Adjunctive Therapy**

-Tabs Zinc 20mg once daily for 14 days (< 6 months 10 mg once daily for 14 days)

Preferably use dispersible tablets in younger children

Tabs Vitamin C ; 1 month to 4 years – 125-250 mg daily in one or two divided doses

5-12 years – 250 - 500mg in one –two divided doses

### **Fluid therapy;**

- Balanced solution (like Ringers) is preferred over Chloride-rich (like Normal saline) as crystalloid of choice.
- Adults & Adolescents: Give 250-500 ml isotonic crystalloid fluid as a rapid bolus over 15-30 min.
- **Children (<12 years): Give 10-20 ml/kg bolus in 30-60 min**
- **Every 30 minutes; monitor for fluid responsiveness using dynamic parameters during fluid resuscitation like skin temperature, capillary refill time and/or serum lactate. Volume overload may occur; monitor for signs of increasing oxygen requirement, worsening respiratory distress, raised JVP, hepatomegaly. Stop if present.**
- Use static parameters; targets MAP 60-65 (age-appropriate for children), Heart rate, urine out-put. (Refer to shock protocol for more details)
- Point of care echocardiography is recommended if no volume responsiveness is seen.

### **Vasopressor therapy;**

- Indicated in case of shock refractory to fluid resuscitation.
- Preferred route of administration is Central venous catheter however in low concentrations, peripheral IV access can be used with precautions.

#### **Adults;**

- **Norepinephrine (Noradrenaline) is first line vasopressor of choice.**
- **IV Norepinephrine (Noradrenaline) infusion; mix 16mcg/ml or 32mcg/ml of NS or D5; initiate:** 8-12mcg/min; titrate to MAP 60-65 mmHg, maintain at 2-4mcg/min. Weight -based dosing: 0.05-2mcg/kg/ min. If  $\geq 16$ mcg/min or 0.3mcg/kg/min is needed, add Adrenaline infusion.
- IV Epinephrine (adrenaline) infusion: mix 4mcg/ml or 16mcg/ml of NS can be used as an alternative or second line vasopressor. Dose: 0.01-1mcg/kg/min.

#### **Children & Adolescents;**

- For warm shock; IV Norepinephrine (Noradrenaline) is first choice. Mix 8mcg/ml or 16mcg/ml in NS or D5. Weight-based dosing: 0.05-2 mcg/kg/min
- For cold shock: IV Epinephrine (Adrenaline) is first choice. Mix 16mcg/ml or 32mcg/ml. Weight-based dosing: 0.1-1 mcg/kg/min

### **Vasopressor-refractory shock**

- Perform bedside ECHO to assess cardiac function where possible or add dobutamine. Mix 2mg/ml or 5mg/ ml. Weight-based dosing: 2-20mcg/kg/min.
- If serum calcium is unknown, consider IV Calcium 0.5-1 mmol/Kg over 30min then maintenance 2mmol/kg/ day. Stop if Serum Calcium is within normal limits or signs of toxicity (e.g. Bradycardia) are seen.

### **Monitoring for Critically ill;**

- Continuous monitoring (availability of a doctor or nurse at all times)
- Continuous monitoring of ECG, blood pressure, SPO<sub>2</sub>, capnography and temperature.
- Review the test results daily or whenever necessary
- Assess daily organ function with modified SOFA score or SOFA score (Details in Annex 1.1.1)

### **Adjunctive Therapy for critically ill COVID-19 patients**

- Implement routine ICU Care Protocols (FAST HUGS IN Bed Please): Fluid & feeding, Analgesia & antiemetics, Sedation & SBT, Thromboprophylaxis, Head-up position, Ulcer prophylaxis, Glucose control; Skin, eye care and suctioning; Indwelling catheters, Nasogastric tube, Bowel cares, Environment, De-escalation, Psychosocial support.
- SC LMWH 40mg OD for 7 days or more for prophylaxis (Consider 40mg BD for obese patients) and therapeutic for D-dimers >4000 or high suspicion of VTE. **[ENOXAPARIN NEEDS DOSE ADJUSTMENT IF CREATINE CLEARANCE < 30ML/MIN, Consider low-molecular-weight heparin 20mg or Unfractionated Heparin if available]**

### **CAUTION!**

- 1 - Do not use hypotonic crystalloids, starches, or gelatins for resuscitation.**
  - 2- If fever ( $\geq 38^{\circ}\text{C}$ ), give IV Paracetamol 1gm 3 times a day for maximum 3 days then tablets if still required**
- Do not give NSAIDS (Ibuprofen, Aspirin, Indomethacin, Piroxicam etc.)**

## 4.2 Oxygen Therapy

- Immediately give oxygen therapy if;
  - Emergency signs (unstable); target SpO<sub>2</sub> ≥ 94%
  - Stable with hypoxemia, SpO<sub>2</sub> <90%; Target SPO<sub>2</sub> > 90% and Pregnant women; Target SpO<sub>2</sub> ≥ 92-96%
- Pulse oximetry must be available for monitoring severe COVID-19 patients. If no pulse oximeter, monitor;
  - Level of conscious for alterations
  - Cyanosis
  - Decrease in respiratory distress & respiratory rate to <30breaths/min
- Initiate oxygen therapy at 5L/min using nasal prongs. If target achieved, titrate downwards to maintain SpO<sub>2</sub> ≥ 90% if stable
  - Nasal prongs flow rate 1-5L/min
  - Switch to simple face mask if there is need to dispense oxygen at 6-10L/ min to achieve the target
  - Switch to Non-rebreather mask (NRM) if there is need to dispense oxygen at >10-15mL/min
- ICU consultation when SpO<sub>2</sub> <92% on NRM >12L/min
- Consider combination of Nasal prongs 15L/min with NRM 15L/min
- Prone positioning is encouraged for 12-16 hours daily. For details refer to the awake prone algorithm.
  - Change of position every 30mins to 2 hours depending on patient tolerance
  - Lying on the belly then lateral side (left or right) then sitting upright (30-600) then lateral side (right or left)

### **Position on Selected drugs requiring more research**

There is scientific equipoise on the following drugs which must only be used in research or compassionate use settings. Research should be approved by relevant Research Ethics Committees, the Uganda National Council for Science and Technology and Uganda National Health Research Organization and the National Drug Authority. Compassionate use programs must be approved by the Director General Health Services and all patients' outcomes and data must be submitted to the National Drug Authority.

1. Ivermectin
2. Remdesvir
3. Tocilizumab
4. Colchicine
5. High titre Convalescent Plasma

### **Position on drugs no longer requiring research but to be withdrawn from further use**

1. Hydroxychloroquine
2. Standard Convalescent Plasma

### 4.3 Table 6, Prevention of COVID-19 complications in critically ill Patients

Anticipated Outcome	Intervention
Reduce days of invasive mechanical ventilation	<ul style="list-style-type: none"> <li>-- Use weaning protocols that include daily assessment for readiness to breath spontaneously</li> <li>- Minimize continuous or intermittent sedation targeting specific titration endpoints (light sedation unless contraindicated) or with daily interruption of continuous sedative infusions</li> <li>- Early mobilization</li> <li>- Implementation of the above as a bundle of care (may also reduce delirium); such as Awakening and Breathing, Coordination, Delirium assessment/management, and Early mobility (ABCDE)</li> </ul>
Reduce incidence of ventilator associated pneumonia	<ul style="list-style-type: none"> <li>- Oral intubation is preferred to nasal intubation in adolescents and adults</li> <li>- Keep patient in semi-recumbent position (head of bed elevation 30-40 degrees)</li> <li>- Use a closed suctioning system to periodically drain and discard condensate in tubing</li> <li>- Use a new ventilator circuit for each patient once patient is ventilated, change circuit if it is soiled or damaged but not routinely</li> <li>- Change heat moisture exchanger when it malfunctions, when soiled or every 5-7 days</li> </ul>
-Reduce incidence of venous thromboembolism	<ul style="list-style-type: none"> <li>- Use pharmacological prophylaxis (low molecular-weight heparin or heparin 5000 units subcutaneously once or twice daily in adolescents and adults without contraindications. For those with contraindications, use mechanical prophylaxis (intermittent pneumatic compression devices)</li> </ul>

<p>Reduce incidence of pressure ulcers</p>	<ul style="list-style-type: none"> <li>- Turn patient every 2 hours</li> <li>- Pad bony prominences</li> </ul>
<p>Reduce incidence of ventilator associated pneumonia</p>	<ul style="list-style-type: none"> <li>- Use a checklist with completion verified by a real-time observer as reminder of each step needed for sterile insertion and as a daily reminder to remove catheter if no longer needed</li> </ul>
<p>Reduce incidence of stress ulcers and gastrointestinal (GI) bleeding</p>	<ul style="list-style-type: none"> <li>- Give early enteral nutrition (within 24-48 hours of admission)</li> <li>- Administer proton pump inhibitors in patients with risk for GI bleeding. Risk factors for gastrointestinal bleeding includes mechanical ventilation for &gt;48 hours, coagulopathy, renal replacement therapy, liver disease, multiple comorbidities and higher organ failure scores</li> </ul>
<p>Reduce the development of antimicrobial resistance</p> <p>Reduce the development of adverse drug effects</p> <p>Promote appropriate antimicrobial prescribing and use during COVID-19 pandemic</p>	<ul style="list-style-type: none"> <li>- Utilize de-escalation protocols as soon as the patient is clinically stable and there is no evidence of bacterial infection</li> <li>- Expose patient to empiric antimicrobial therapy for the shortest time possible, to prevent nephrotoxicity, ototoxicity, cardiac and other side effects from unnecessary antimicrobial use.</li> <li>- Do not prescribe antibiotics to suspect or confirmed COVID-19 patients with a low index of suspicion a bacterial infection, to avoid more short-term side effects of antibiotics in patients and negative long-term sequelae of increased antimicrobial resistance.</li> </ul>



## 4.4 Management of COVID-19 with other commodities

There is a need for integrated management of commodities especially malaria, TB, hypertension, Cancer, Diabetes, Cardiovascular diseases. See; - Annex 9. for management of TB in COVID-19 context

- Annex 11. for management of Malaria in COVID-19 context
- Annex 8. for Maternal and Child health in COVID-19 context

## 4.5 Table 7 Discharge criteria for COVID-19 infection

This guidance is subject to change should testing supplies become limited or new data becomes available

Case category	Time to perform Discharge PCR1	Time to perform Discharge PCR2	Discharge if the following criteria are met
<b>Asymptomatic cases (Persons with laboratory-confirmed COVID-19 who have not had any symptoms)</b>	Day 8 after date of initial confirmed laboratory test	Day 10	<b>Both PCR tests are negative*</b>
<b>Symptomatic Cases (Persons with COVID-19 who developed any symptom(s))</b>	Day 8 after symptom onset  <b>AND</b>  Patient has been fever-free for 72 hours (without antipyretics)	Day 10	<b>Both PCR tests are negative*</b> <b>AND</b> Patient has been <b>fever-free for 72 hours</b> (without antipyretics) <b>AND Respiratory symptoms</b> have markedly <b>improved</b> <b>AND</b> Patient is <b>clinically stable</b>

**Note:**

- Patients who test positive at either the Discharge PCR1 or Discharge PCR2, should continue with isolation.
- o And a 3rd repeat test (discharge PCR3) should take place 5 days later, followed by a 4th repeat test (discharge PCR4) at least 24 hours later (if discharge PCR3 is negative). If the patient tests negative on both Discharge PCR3 and Discharge PCR4 tests, he/she should be discharged.
- If clinical criteria have been met and Discharge PCR 3 or 4 remain positive, consult MoH COVID-19 Case Management Pillar virtual support team

\* If laboratory testing cannot be done (e.g. stock out of test kits or reagents), and with MoH approval: *asymptomatic cases may be discharged 10 days after initial confirmed laboratory test symptomatic cases may be discharged 10 days after symptom onset* as long as patient has been fever-free for 72 hours (without antipyretics), respiratory symptoms have markedly improved, and patient is clinically stable

## **4.6 Recommendation for follow up**

Patients should be followed up one week after discharge, preferably by phone. The patient should be cautioned to return to the health facility if any symptoms return.

Psychosocial Support should continue for as long as needed. **Refer to Annex 14.**

## **5. Management of COVID-19 in designated locations outside of health facilities.**

Cases may come to the attention of VHTs, district surveillance teams, or other community members. The algorithm in Annex 7. provides a guide for lay providers and surveillance officers to identify suspect cases and address according to the severity of symptoms.

The number of confirmed COVID-19 non-severe cases may overwhelm the health facilities capacity to isolate (thresholds 2 and 3 above). Part of the plan for surge capacity is to use designated facilities for diagnostic evaluation and treatment of COVID-19.

There needs to be a plan to identify and support secondary isolation sites such as community facilities (e.g. schools, churches, stadium, gymnasium, hotel or tent). These sites may be used to manage non-severe, non-high risk cases, and could be turned into health facility overflow sites for higher-risk patients who currently have mild disease should the need arise. Potential sites will be designated by the district task force as guided by the National Task Force.

### **5.1 Guiding principles for other COVID-19 designated isolation sites.**

The designated site should meet the following minimum requirements;

1. Proximity to a health facility with readily available transport
2. Ability to monitor case progression i.e. Human resources in a recommended ratio of 100 patients: 1 health team (A nurse and a nursing aid) and logistics.
3. Transport plan in case of disease progression
4. Access to running water, toilets and bathrooms
5. Provision of food
6. Security personnel
7. Psychosocial support for the patients

## 5.2 Guiding Principles for Home Based care of COVID-19

This is when a patient confirmed to have COVID-19 is provided the required care directly in the home. The patient is mandated to restrict activities and movements outside their home unless when seeking medical care. During the entire period of home-based isolation, the patient should not go to public places like workplaces, school, market, churches, meetings etc. The patient should not also use public transport like taxis, buses and shared boda-boda rides.

The decision to care for a patient at home requires careful clinical judgment and should be informed by an assessment of the suitability of the patient's home environment.

### A. Entrance into HBC program

The entry point into HBC is the Laboratory result that is positive. The clinician that delivers the positive result to the patient is responsible for screening the patient for eligibility (Using the screening form) for HBC and thereafter registering the patient that qualifies in using their unique ID that was assigned on the Laboratory Investigation Form. ***The COVID-19 DATA INTEGRATION PLATFORM WILL CAPTURE ALL THIS INFORMATION WHEN READY***

### B. Patients eligible for HBC

Home-Based Care in Uganda may be considered for an adult or a child with confirmed COVID19 under the following circumstances:

- Patient has no symptoms or has mild illness
- Patient with no known risk of developing complications or progressing to severe COVID-19 disease.
- There a designated healthy adult to provide care and support
- Patient who lives in a home that meets the criteria for home-based isolation
- A patient who demonstrates understanding of the rationale of why people need to stay home when sick until cleared for discharge/de-isolation, and expresses willingness to comply with the home-based isolation and care guidelines until discharge/de-isolation.

### **C. Patients not eligible for HBC**

1. Patients with high risk of developing severe COVID-19 disease or developing complications due to COVID-19 illness
  - Patients who are Age < 1 yr or Age > 60 yrs
  - Patients having current co-morbid conditions below
  - Cardiovascular conditions such as heart attack or stroke
  - Diabetes
  - Cancer patients (with or without cancer treatment)
  - Liver disease
  - Persons with advanced HIV disease not virally suppressed
  - Lung diseases (e.g., asthma, TB, COPD)
  - Kidney disease
  - Severe Acute Malnutrition
2. Patient with any household member who is at high risk of severe COVID -19 disease (who has any of the co-morbidities listed above)
3. Patients with any ONE of the danger signs below:
  - Rapid breathing:
    - >30 per minute (adult/child >5years);
    - ≥ 40 breaths per minute for children 1-5 years,
    - ≥50 breaths per minute for children 2-11months and
    - ≥60 breaths per minute for children <2months.
  - Difficulty breathing and/or chest in drawing
  - Persistent high fever for 3 or more days
  - Disorientation
  - Lethargy (excessive weakness, tiredness)
  - Seizures or convulsions
  - Inability to drink or eat

### **D. Therapeutic options for HBC Guidelines**

#### **Adults**

1. Tabs Paracetamol 1g tds for 3 days (if fever or headache)
2. Vitamin D supplementation for those with evidence of deficiency (Clinical/Laboratory evidence)- i.e., 1000-4000IU daily depending on risk
3. Nasal decongestants



## Children

1. Tabs/Syrup Paracetamol (If fever  $\geq 38^{\circ}\text{C}$ , body aches or headache):
  - a. 10 – 15mg/kg/dose, three times a day for 3 days
2. Vitamin D supplementation (for those with evidence of deficiency (Clinical/Laboratory evidence) Infants up to 1 year; 400-1000IU, 1 year older; 800- 2000IU
3. Nasal decongestants

## E. Monitoring and referral

- mHealth platforms with automated daily calls/ USSD \*260# to generate Alerts
- All ALERTS generated based on symptoms will be further examined for escalation to EMS/District Teams for Evacuation.
- HCW/VHTs from the parent facility/where the patient was identified, will periodically make phone contacts/ physical visits to assess patients' condition while under isolation
- The caregiver is also expected to monitor the progress of the patient using the patient daily monitoring tool.
- Other services
  - Provide Psychosocial support
  - Provide nutritional support
  - Continue providing essential services

## F. Discharge/De-isolation from HOME-BASED ISOLATION

- Asymptomatic patients will be discharged from home isolation if they have completed 10 days from the date of their initial COVID -19 positive test
- The mildly symptomatic patients will be discharged from home isolation at least 10 days from the day the symptoms started and have had no fever for 24 hours.
- A discharge will be assigned by the parent facility/CTU, offer certificate of discharge, and patient will be followed up by the existing structures (CALL FOR LIFE/USSD \*260#).

## **6. National Prehospital Emergency Medical Services (Ems) Covid-19 Guidelines Summary**

### **Introduction:**

The Ministry of Health has developed the National Prehospital Emergency Medical Services (EMS) Covid-19 Guidelines that provide guidance for EMS preparedness and response to COVID-19 in the prehospital setting. They are aligned with current national and global recommendations and also consideration for the prehospital context in Uganda.

### **Challenges of working in an EMS environment:**

1. Uncontrolled environment (unlike a healthcare facility)
2. Enclosed moving space during transport
3. Frequent need for rapid medical decision-making
4. Interventions with limited Information
5. Varying range of patient acuity and healthcare resources

**How to use the guidelines:** The guidelines provide information for an organized coordinated and integrated and functionalized EMS system both Regional and National level for both COVI- 19 and none COVID-19 cases. They provide practical guidance to frontline EMS personnel providing care of patients in the community and during transportation on ambulances to health facilities. This summary captures key points. It is recommended to read the full guidelines when availed.

**PART ONE: GENERAL PREVENTIVE MEASURES; kindly refer to IPC guidelines in section 3**

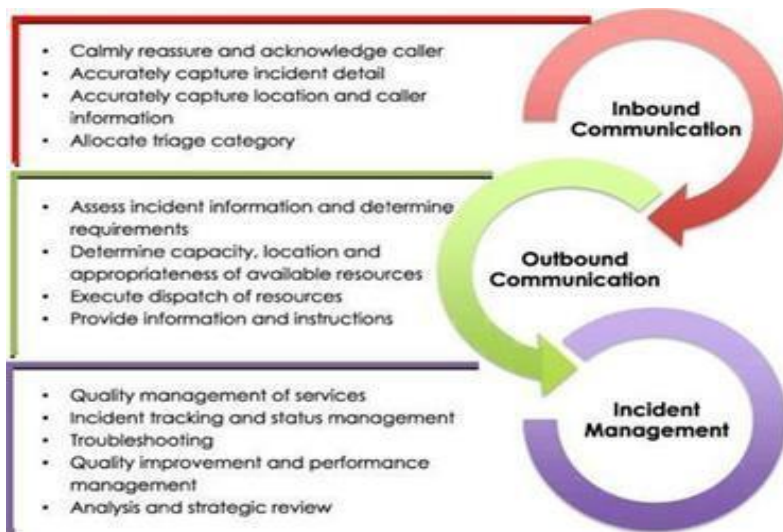
**PART TWO: EMS SPECIFIC PROCEDURES**

Section I: Roles of a Call and dispatch center:

- Identification of suspect cases or confirmed cases.
- Telephonic assessment of Disease severity and resource allocation.
- Communication and coordination.
- Activation and pre-notification of responding crew.



- Give pre-arrival instructions to caller.
- Maintain clean dispatch Environment and Equipment.



### **Pre-transport / EMS on Scene**

- Instruct any first responder to isolate the case.
- Approach scene professionally to avoid safety and psychosocial issues.
- Assess patient using the WHO Interagency Integrated triage tool (annexure)
- Patient disposition will be as per severity. Patients with comorbidities and at risk for severe disease should be taken to a facility with an ICU.
- Patient preparation for transport (patient and any family accompanying must be in PPE as previously recommended).

### **Transport Pre-transport considerations**

- Communication with integrated health service network for example the receiving hospital on expected time of arrival and patient stability.
- Secure and uncongested route to receiving facility should be arranged with security agencies as applicable.
- Ambulance ventilation. Do NOT set to recycle air.
- Air Medical Transport not routinely recommended as no barrier between pilot and patient compartments.

**Patient management during transport:** This will be supportive management. Details should be filled on patient care form (PCF).

**Patient handover shall be structured (DeMIST acronym; Demographics (Name, Age, Sex, Location of pick-up), Mechanism or Insult (if applicable), Illness/Injury (e.g COVID-19 PUI), Signs & Symptoms (Vital signs: Respiratory Rate, O2 Saturation etc), Treatment given)**

### **Post-transport**

- Waste management: Any ambulance wastes should be deposited at the receiving hospital in a controlled way.
- Doffing: Can be done at receiving facility if Ambulance will be decontaminated there OR at decontamination site if different from referral hospital.
- Documentation and Debriefing: Must be completed after each transfer. Keep documents in plastic back and complete after doffing to avoid contamination.
- Identify decontamination area either at a facility or other according to regional team preference.
- Decontamination procedures should be followed using recommended protocols

### **Administration**

- Setting up a regional Call & Dispatch centre: guidelines for this will be availed soon. For now, follow the structure provided in the guidelines.
- Protocols and training: All ECPS should receive education and training and demonstrate competencies for COVID-19 PPE and patient management as stipulated in these guidelines.
- Communication among providers: Secure lines of communication should be established to share sensitive information.
- Safety/security and environment: Any security threats should be communicated to the Dispatch center. ECPS should wait for police or other security agency to secure the scene before they approach.

- Ambulance supplies and procedures Ambulances should be stocked with an adequate inventory of supplies and appropriately sized PPE for the personnel who are assigned to the transport mission. Checklists may be used to ensure adequate supply.
- Follow-up and/or reporting measures; all the messages and information released should be coordinated through official Ministry of Health channels.

### **Special Considerations**

- Paediatric Considerations: Caregivers who follow infectious precautions may be kept with the child if they wear appropriate PPE, have been providing care for the child during the current illness, and there is no substantial risk of body fluid exposure during transport.
- Geriatric Considerations Elderly populations often have special needs which could affect COVID-19 pre-hospital protocol.
- Persons Living with Disability Consideration should be made for PLWD. They may require to travel with a caregiver. Any aides they require like wheel chair etc should be transported with them.
- Dead body management: In the event of death during transit, wrap body in body bag and inform the dispatcher who will give further instructions in accordance with burial committee recommendations.

## **7 Other provisions**

### **7.1. OSHE protocol**

Maintaining the health and well-being of healthcare personnel is essential for both practical and ethical reasons. They need to be healthy to function and have the same right to health as everyone else. During the COVID-19 pandemic, placing individuals or communities under quarantine will place additional demand and psychological strain on healthcare staff.

**Administration should therefore ensure:**

- 1) Pre deployment training and skills/competency assessment of health care staff

- 2) Healthcare staff and families have access to COVID-19 testing if exposed
- 3) Healthcare staff have appropriate PPE (Please see section on PPE)
- 4) Healthcare staff adhere to infection control practices (Please see section on IPC)
- 5) Work schedule should not exceed 8 hours per shift, especially at the hospital
- 6) Train healthcare staff to look for stress that could lead to burn-out in themselves, colleagues and report
- 7) Provide staff with psychosocial support and counselling
- 8) Organize regular briefings and de-briefings of staff
- 9) Explore optional ways of supporting healthcare personnel such as meals, accommodation and transport
- 10) Recruit and orient recently qualified, unemployed and postgraduate trainee medical personnel
- 11) Provide on-the-job refresher training for all personnel
- 12) Ensure infected and ill healthcare personnel are well cared for.
- 13) Provide suitable accommodation for healthcare staff for the duration he/she is on duty in highly infectious environment e.g. COVID-19 area.

***For details see Annex 15.***

## **7.2 Nutrition Care for Hospitalized COVID-19 Patients.**

Majority of people infected with Corona virus develop mild or uncomplicated illness. However, approximately 14% develop severe disease that requires hospitalization while 5% will require Intensive care management.

Good supportive care remains the cornerstone in managing COVID-19 patients. Adequate nutrition support can slow catabolism in critically ill patients and can improve patient outcome, reduce duration of recovery and length of hospital stay. Hospitals in Uganda should aim at including nutrition in the care of patients admitted with COVID-19.

**PURPOSE:** To provide guidance on the nutrition care of hospitalized COVID-19 patients including the critically ill receiving ICU management. Targeted Users: Physicians, Nutritionists, Clinicians, Nurses, Pharmacists, intern students directly involved in management of COVID-19 patients.

## **Objectives**

- To support the nutrition management of hospitalized COVID-19 patients to enhance recovery
- To help health care providers to correctly identify the most appropriate and timely nutrition care support for all COVID-19 patients admitted in health facilities
- To define recommendations for the provision of enteral/parenteral nutrition by healthcare providers

*For more details, please refer to Annex 10*

## **7.3 Guidelines on Providing Mental Health and Psychosocial During Covid-19 Pandemic Response**

Adequate provision of psychological support and access to services contributes to a sense of normalcy, foster the healing process and enhances resilience of the affected populations. This therefore means that the population should be supported to manage the stress, to prevent the negative psychological outcomes including anxiety, depression, panic attacks, and sleep disturbances.

The mental health professionals have put down some guidance and messages for the different sub-populations to support their mental and psychosocial well-being during this COVID-19 outbreak.

*Please refer to Annex 12 for more details*

## **7.5 Standard Operating procedures for Surgical Services during COVID-19 pandemic in Uganda.**

### **Introduction**

Although COVID-19 is not primarily a surgical disease, the pandemic has significantly affected delivery of surgical services countrywide. Local guidance and standard operating procedures (SOP) are in existence for the management of suspected, probable and confirmed COVID-19 at the various surgical service delivery points in the SOPD, Casualty or Emergency Unit, In-patient and Operating Theatre during the COVID-19 era. These SPOs are aimed at protecting surgical patients, staff and community from the risk of SARS-CoV2, by providing safe environment for surgical care in Uganda.

### **Section 1: Ambulatory/ Surgical Out Patient Department Services**

The SOPD should run different clinics on each day of the week. Clinicians should endeavor to review patients on an appointment basis.

### **Section 2: Surgical inpatient services**

Elective surgical admissions will be evaluated on a case-by-case basis with a plan to postpone or defer. Selected diagnostic/therapeutic procedures will be considered where delays may result into worse prognosis, prolonged duration of hospitalization or advancement of disease status.

By the time the patient leaves the admitting point i.e. Casualty or Surgical Outpatient should have a checklist with COVID-19 status.

### **Section 3: Operating Theatre.**

- The dedicated COVID-19 Operating Area should be identified for management of suspected, probable or confirmed.
- Nil Per os (NPO) for G.A, Early introduction of oral feeds, removal of urethral catheter and patient withdrawal from HDU or ICU, to enable ambulation, physiotherapy.

Cover patient with anti-coagulant due to pulmonary complications in severe or critical COVID-19, Enteral Tube feeding via NG-tube, feeding gastrostomy or jejunostomy and for critically sick COVID -19 patients parenteral nutrition is recommended and I.V. 10% Dextrose

- Discharge from Surgical COVID-19
- Nutritional rehabilitation done or continued accordingly post operatively.
- Discharged ASAP to either parent ward or home

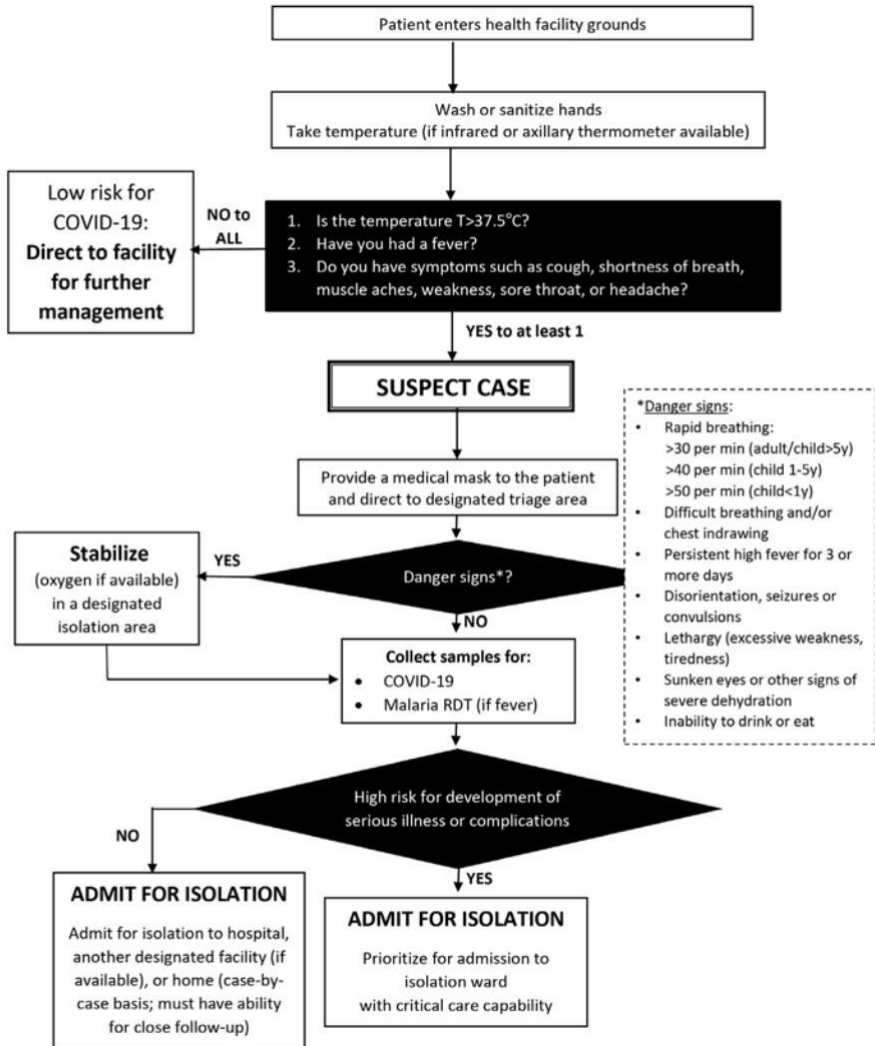


# ANNEXES

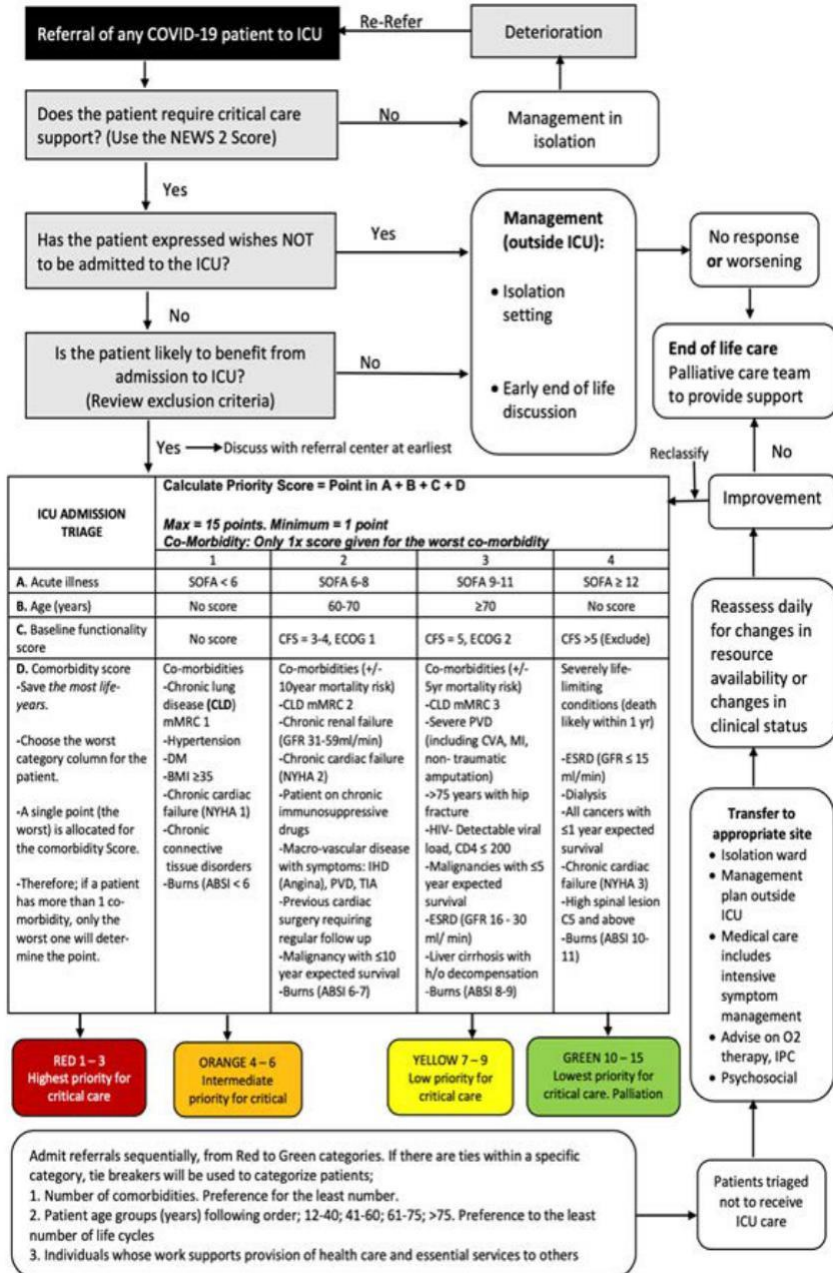




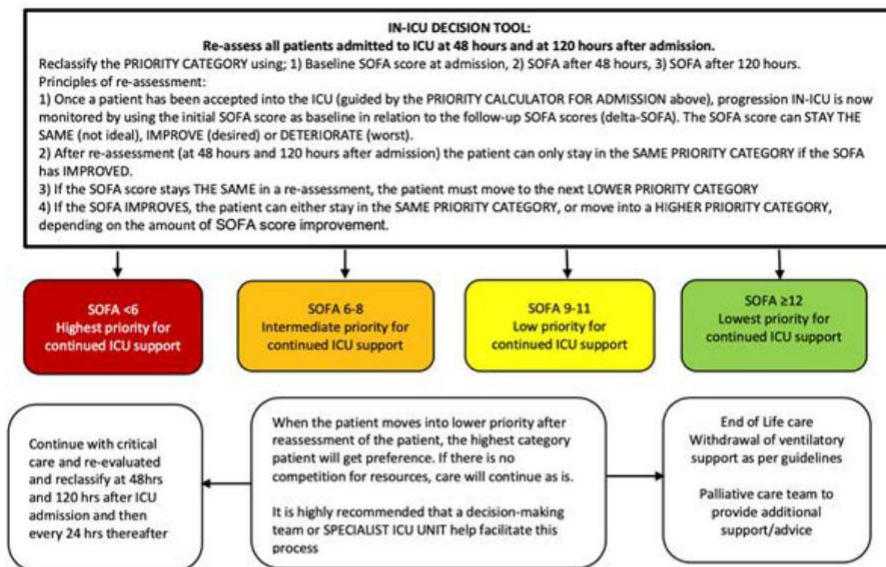
## Annex 1.1: Health facility triage algorithm for COVID-19; under conditions of community transmission



## Annex 1.2 ICU triage algorithm



## Annex 1.2.1 ICU triage algorithm



Exclusion criteria for ICU admission	
<ul style="list-style-type: none"> <li>Patient expressed wish to not be admitted to ICU/Advance directive</li> <li>Clinical Frailty score ≥ 6</li> <li>≤ 6 months life expectancy</li> <li>Unwitnessed cardiac arrest</li> <li>Severe irreversible neurologic injury (GCS &lt;6; Motor &lt;4)</li> <li>Vasopressor/Inotrope-refractory shock</li> <li>Severe baseline cognitive impairment</li> <li>ECOG score &gt;4</li> </ul>	<ul style="list-style-type: none"> <li>Chronic respiratory disease with poor functional capacity - m MRC 4</li> <li>Advanced cardiac disease NYHA 4 or poor EF on maximal medical therapy</li> <li>HIV/AIDS with AIDS defining illness</li> <li>CD4 ≤ 100 and/or VL&gt;10,000 c/ml</li> <li>Severe burns with high predicted mortality (ABSI ≥ 12)</li> <li>Liver cirrhosis – Child Pugh ≥7 or MELD ≥20</li> <li>Advanced untreatable neuromuscular disease</li> <li>Advanced CKD dependent on dialysis or not eligible for dialysis</li> <li>Multiple organ failure</li> </ul>

### Sequential Organ Failure Assessment Score

SOFA score	0	1	2	3	4
<b>Respiratory*</b>					
PaO <sub>2</sub> /FIO <sub>2</sub>	> 400	300 - 400	200 - 299	100 - 199	≤ 100
SpO <sub>2</sub> /FIO <sub>2</sub>		316 - 400	236 - 315	151 - 235	≤ 150
Coagulation (Platelets 10 <sup>3</sup> /mm <sup>3</sup> )	>150	<150	<100	<50	<20
<b>Liver</b>					
Bilirubin (mg/dl)	<1.2	1.2–1.9	2.0–5.9	6.0–11.9	>12.0
Scleral icterus/Jaundice*	No			Yes	
<b>Cardiovascular</b>					
Hypotension (mcg/kg/min)	No hypotension	MAP <70	Dobutamine (any dose)	Norepinephrine/Epinephrine ≤ 0.1	Norepinephrine/Epinephrine >0.1
<b>CNS</b>					
Glasgow Coma Score	15	13–14	10–12	6–9	<6
<b>Renal</b>					
Creatinine (mg/dl)	<1.2	1.2–1.9	2.0–3.4	3.5–4.9	>5.0
urine output(ml/d)				<500	<200

\*Modified to include SpO<sub>2</sub>/FIO<sub>2</sub> ratio, clinical jaundice for the Liver dysfunction if no blood gas analysis or Liver function tests.

# Annex 1.2.2 ICU triage algorithm

Clinical Frailty Scale

## Clinical Frailty Scale

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## Annex 2.: Infection and Prevention Control Practices

### Standard IPC precautions for all staff

IPC is a critical and integral part of clinical management of patients and should be initiated at the point of entry of the patient to hospital (typically the Emergency Department). Standard precautions should always be applied in all areas of health care facilities. Standard precautions

**include:**

- Hand hygiene;
- Use of PPE to avoid direct contact with patients' blood, body fluids, secretions (including respiratory secretions) and non-intact skin.
- Prevention of needle-stick or sharps injury;
- Safe waste management;
- Cleaning and disinfection of equipment;
- Cleaning of the environment.

### Infection prevention and control measures for patients with suspected or confirmed COVID-19 at the health facility

**a) At triage area:**

- Give suspect patient a medical mask and direct patient to separate area, an isolation room if available.
- Keep at least 2-meter distance between suspected patients and other patients.
- Instruct all patients to cover nose and mouth during coughing or sneezing by coughing/sneezing into a tissue or into a flexed Elbow.
- Perform hand hygiene after contact with respiratory secretions



### **b) Applying droplet precautions:**

Droplet precautions prevent large droplet transmission of respiratory viruses.

- Use a medical mask if working within 2 meters of the patient.
- For suspect cases, place patients in single rooms if available or separate patients by 2m spatial separation.
- 1 m is accepted for confirmed cases incases space is limited
- When providing care in close contact with a patient with respiratory symptoms (e.g. coughing or sneezing), use eye protection (face-mask or goggles).
- Limit patient movement within the institution and ensure that patients wear medical masks when outside their rooms.

### **c) Applying contact precautions**

Droplet and contact precautions prevent direct or indirect transmission from contact with contaminated surfaces or equipment (i.e. contact with contaminated oxygen tubing / interfaces).



- Use PPE (medical mask, eye protection, gloves and gown) when entering room and appropriately remove PPE when leaving. If possible, use either disposable or dedicated equipment (e.g. stethoscopes, blood pressure cuffs and thermometers).
- If equipment needs to be shared among patients, clean and disinfect between each patient use.
- Ensure that health care workers refrain from touching their eyes, nose, and mouth with potentially contaminated gloved or ungloved hands.
- Avoid contaminating environmental surfaces that are not directly related to patient care (e.g. door handles and light switches).
- Ensure adequate room ventilation.
- Avoid movement of patients or transport.
- Perform hand hygiene.




**d) Apply airborne precautions when performing an aerosol generating procedure**

- Ensure that healthcare workers performing aerosol-generating procedures (i.e. open suctioning of respiratory tract, intubation, bronchoscopy, cardiopulmonary resuscitation) use PPE, including gloves, long-sleeved gowns, eye protection and fit-tested particulate respirators (N95 or equivalent, or higher level of protection).
- Whenever possible, use adequately ventilated single rooms when performing aerosol-generating procedures.
- Avoid the presence of unnecessary individuals in the room. Care for the patient in the same type of room after mechanical ventilation commences.




## Annex 2.1 Recommended Personal Protective Equipment for COVID-19.

These guidelines are informed by WHO guidance on PPEs for COVID-19 and institutional experiences in US and the UK.

PPE		Characteristics and how to Use
1	<p>Eye protection (goggles/Face Shield )</p> 	<ul style="list-style-type: none"> <li>• Face shield or goggles can be used</li> <li>• Should adequately protect the healthcare workers conjunctival mucous membranes from splashes</li> <li>• Normal reading glasses are not acceptable as PPE for eye protection so a face shield with anti-fog should be worn over the glasses or goggles big enough to cover the glasses</li> <li>• Goggles must fit comfortably and securely;</li> <li>• Depending on the type of goggles and face shield can be decontaminated and reused.</li> </ul>
2	<p>Mouth and nose protection (surgical \ Medical face mask)</p> 	<ul style="list-style-type: none"> <li>• Healthcare workers must cover the mouth and nose to avoid body fluid splashes and droplet spread.</li> <li>• Medical-surgical mask should be fluid-resistant.</li> <li>• The mask should be removed safely and disposed appropriately when soiled to avoid transmissions.</li> </ul>

<p>3</p>	<p>Gloves</p> 	<ul style="list-style-type: none"> <li>• Correctly sized latex or nitrile examination gloves should be used to protect hands against both direct and indirect contact.</li> <li>• A new pair of gloves should be used for each patient. Remember that for invasive procedures you need sterile gloves.</li> <li>• DO NOT touch eyes, nose or mouth areas with gloved hands.</li> <li>• Hand washing/rubbing should be done before and after putting on gloves.</li> <li>• Double gloving technique should be utilized for all contact with patient under investigation for COVID-19 or patients with confirmed COVID-19.</li> </ul>
<p>4</p>	<p>Body protection (gowns)</p> 	<ul style="list-style-type: none"> <li>• Long-sleeved water-resistant gowns should be used.</li> <li>• Non water resistant gowns such as Cotton can be used if the resistant gowns aren't available.</li> <li>• This PPE does not need to be sterile, unless used in a sterile environment (e.g. operating room).</li> <li>• If the COVID-19 status of the patient is not known (suspect), the gown should be safely removed and disposed of between patients to prevent nosocomial spread.</li> </ul>
<p>5</p>	<p>Apron</p> 	<ul style="list-style-type: none"> <li>• Single-use plastic aprons can be used on top of the non-water-resistant gown to provide extra protection to the front part of the body in case of soiling.</li> </ul>



<p>6</p>	<p>Respiratory protection (N95 or FFP2)</p> 	<ul style="list-style-type: none"> <li>• The respirator protects from the inhalation of small airborne droplets and particles.</li> <li>• Given that the fitting of different types of respirator will vary for each user, the respirator will require a fitting test in order to find the best match of PPE to user.</li> <li>• A respirator should always be used when performing aerosol-generating procedures in a COVID-19 patient.</li> <li>• The mask should be removed safely and disposed appropriately when soiled to avoid transmissions.</li> <li>• Extended use should not extend beyond a day to reduce risk of transmissions.</li> <li>• Hand washing/rubbing is required in case the outside surface is touched.</li> </ul>
<p>7</p>	<p>Heavy-duty rubber gloves</p> 	<ul style="list-style-type: none"> <li>• Cleaners, laundry workers and healthcare workers when handling infectious waste should wear heavy duty rubber gloves over nitrile gloves.</li> <li>• Movement of human remains or performing environmental cleaning activities also requires the use of heavy-duty rubber gloves.</li> </ul>
<p>8</p>	<p>Boots</p> 	<ul style="list-style-type: none"> <li>• All Clinical staff, cleaners and visitors entering designated isolation units for COVID-19 should wear gumboots</li> <li>• Gumboots should be disinfected in a footbath before exiting the patient care area. Gumboots should not be taken home.</li> </ul> <p>Closed shoes are recommended in the rest of the healthcare settings as part of standard precautions</p>

- Before exiting isolation area, carefully remove PPE and dispose in waste containers in a designated doffing area.
- Place reusable equipment in bin for decontamination such as Face shields, Goggles and Heavy-Duty gloves.
- Do not recycle any single-use PPE such as Gloves, masks, gowns and aprons
- Remove PPE under supervision of a trained buddy.

**Annex 2.2.1 Health worker assessment tool**

<b>Name of the hospital/facility</b>		<b>Address:</b>		<b>Date:</b>		
<b>Name of</b>	<b>Type of</b>	<b>Time of</b>	<b>Symptoms</b>			
<b>HCW (last, F.I)</b>	<b>health care personnel (date)</b>	<b>entrance</b>	<b>Temperature</b>	<b>cough</b>	<b>Sore throat</b>	<b>Shortness of breath</b>
						<b>Other symptoms (document)</b>
<b>Filled by (name of IPC nurse/supervisor):</b>		<b>Time:</b>		<b>Telephone contact:</b>		

## Annex 2.2.2 Risk Assessment for Healthcare Workers Exposed to COVID-19 Cases

### I. INTERVIEWER INFORMATION

Interviewer name (Last, First)

Interview date (DDMM/YYYY)

Interviewer affiliation

### II. HEALTH CARE WORKER INFORMATION

Last name

First name

Sex  Male  Female  Prefer not to respond

Age (years)

Healthcare worker role (check all that apply)	<input checked="" type="radio"/> Facilities/maintenance worker	<input type="radio"/> Phlebotomist <input checked="" type="radio"/>
	<input type="radio"/> Food services worker	<input type="radio"/> Physical therapist <input type="radio"/>
	<input type="radio"/> Laboratory worker	<input checked="" type="radio"/> Physician assistant
	<input type="radio"/> Medical doctor (accrediting)	<input type="radio"/> Radiology technician
	<input type="radio"/> Medical doctor (intern/resident)	<input type="radio"/> Registered nurse (or equivalent)
	<input checked="" type="radio"/> Medical technician	<input type="radio"/> Clinical officer
	<input type="radio"/> Midwife	<input type="radio"/> Student
	<input checked="" type="radio"/> Nursing assistant or technician (or equivalent)	<input type="radio"/> Teacher/Preceptor
	<input checked="" type="radio"/> Nutritionist	<input type="radio"/> Ward clerk
	<input type="radio"/> Other, specify _____	
Healthcare facility type (select primary location)	<input type="radio"/> Hospital	
	<input type="radio"/> Primary health center, specify level _____	
	<input type="radio"/> Outpatient clinic, specify clinic type _____	
	<input checked="" type="radio"/> Nursing home or skilled nursing facility	
	<input checked="" type="radio"/> Home care	
	<input type="radio"/> Other, specify _____	
Are you involved in health care interaction(s) (paid or unpaid) in another health care facility during this period?	<input type="checkbox"/> Other health care facility (public or private) <input type="checkbox"/> others specify _____	



I. COVID-19 EXPOSURE

Healthcare workers who respond "Yes" to any of the questions in this section should be considered as having had a high-risk exposure in the community.

"Uncertain" responses should be considered on a case-by-case basis.

Date of most recent community exposure to COVID-19 case(s)  
(DD/MM/YYYY)

In the past 14 days, did you live in the same household as a COVID-19 case?  Yes  No  Uncertain

In the past 14 days, were you within one meter of a COVID-19 case for 15 minutes or longer (e.g., meeting room, workspace, classroom, or traveling in any type of conveyance), outside of a healthcare facility?  Yes  No  Uncertain

In the past 14 days, did you have direct physical contact with a COVID-19 case (e.g., shake hands) or with their infectious secretions (e.g., being coughed on or touching used tissues), outside of a healthcare facility?  Yes  No  Uncertain

II. HEALTHCARE WORKER ACTIVITY EXPOSURE

Date of most recent exposure to known COVID-19 case(s) in a healthcare setting (DD/MM/YYYY)

Name of health care facility where exposure occurred

Health unit type(s) where exposure to COVID-19 case(s) occurred (check all that apply)

<input type="checkbox"/> Cleaning services	<input type="checkbox"/> Outpatient area	<input type="checkbox"/> Operating room	<input type="checkbox"/> Pharmacy
<input type="checkbox"/> Emergency room	<input type="checkbox"/> Inpatient ward	<input type="checkbox"/> Laboratory	<input type="checkbox"/> Reception
<input type="checkbox"/> Radiology/imaging	<input type="checkbox"/> Intensive care unit	<input type="checkbox"/> Transport	<input type="checkbox"/> Unknown
<input type="checkbox"/> Other			

Healthcare workers who respond "Yes" to any of the questions in this section should be considered as having had a high-risk exposure. Healthcare workers who respond "No" to all of the questions in this section should be considered as having had a low-risk exposure. "Uncertain" responses should be considered on a case-by-case basis.

Did you have any direct skin-to-skin exposure to a COVID-19 case?  Yes  No  Uncertain

Did you have any direct exposure (to your skin or mucous membrane) to a COVID-19 case's respiratory secretions or bodily fluid?  Yes  No  Uncertain

Did you have any exposure (e.g., needle stick, cut, puncture) with material potentially contaminated with body fluid, blood, or respiratory secretions?  Yes  No  Uncertain

Were you within one meter of a COVID-19 case ...

While not wearing appropriate personal protective equipment (PPE)?  Yes  No  Uncertain

<sup>1</sup> Guidance on defining close contacts of COVID-19 cases includes being in the same closed environment for 15 minutes or more at a distance of less than 2 meters, per EEOC (<https://www.eecdc.europa.eu/sites/default/files/documents/COVID-19-public-health-maiaEment-contact-novel-coronavirus-cases-EU.pdf>); face-to-face contact within 1 meter (or more than 15 minutes, per WHO ([https://www.who.int/publications-detail/global-surveillance-for-human-infection-with-novel-coronavirus-\(2019-nCoV\)](https://www.who.int/publications-detail/global-surveillance-for-human-infection-with-novel-coronavirus-(2019-nCoV))); or being within approximately 2 meters for a prolonged period of time, per CDC (<https://www.cdc.gov/coronavirus/2019-nCoV/php/risk-assessment.htm>).

<sup>2</sup> If COVID-19 case had source control during these interactions [e.g., facemask, N95 respirator, or intubation] then exposure would be considered low-risk.



Or had issues with your PPE (e.g., tears, removed while in patient area)?	DYes	0 No	0 Uncertain
Did you provide direct care <sup>1</sup> to a COVID-19 case <sup>1</sup> ...			
While not wearing appropriate personal protective equipment (PPE), <sup>1</sup>	DYes	<input type="radio"/> No	<input type="radio"/> Uncertain
Or had issues with your PPE (e.g., tears, removed while in patient area)?	DYes	<input type="radio"/> No	<input type="radio"/> Uncertain
Did you perform or assist with any aerosol-generating procedure (AGP) <sup>2</sup> on a COVID-19 case, or were you present in the room when one was performed ...			
While not wearing appropriate personal protective equipment (PPE)?	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Uncertain
Or had issues with your PPE (e.g., tears, removed while in patient area)?	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Uncertain
Did you handle body fluids <sup>3</sup> or other specimens from a COVID-19 case ...			
While not wearing appropriate personal protective equipment (PPE)?	DYes	0 No	0 Uncertain
Or had issues with your PPE (e.g., tears, removed while handling specimen)?	DYes	0 No	0 Uncertain
Did you have direct contact with environment where a COVID-19 case received care (e.g., bed, linens, medical equipment, frequently touched surfaces, bathroom) ...			
While not wearing appropriate personal protective equipment (PPE), <sup>1</sup>	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Uncertain
Or had issues with your PPE (e.g., tears, removed while in patient area)?	DYes	<input type="radio"/> No	<input type="radio"/> Uncertain
Did you fail to perform hand hygiene after providing direct patient care?	DYes	DNo	D Uncertain
Did you fail to perform hand hygiene after removing your PPE?	DYes	ONo	O Uncertain
Did you fail to perform hand hygiene after having direct contact with the environment where a COVID-19 case received care?	DYes	DNa	O Uncertain

Use this section to describe healthcare interactions with COVID-19 cases and determine whether appropriate PPE was worn. Record details about PPE the healthcare worker<sup>4</sup> wore, and determine if it was appropriate based on guidance on the use of PPE.<sup>1</sup> Please see the provided examples.

Interactant | Was PPE worn by healthcare worker?

<sup>1</sup> Information on the use of personal protective equipment is available at: [https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-\(ncov\)-infection-is-suspected-20100125](https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-(ncov)-infection-is-suspected-20100125)

<sup>2</sup> Patient care activities include, but are not limited to: taking vital signs or medical history, performing physical exam, providing medication, bathing, feeding, emptying bedpan, changing linens, drawing blood, performing x-ray, collecting respiratory specimens, inserting central or peripheral line, inserting nasogastric tubes, placing urinary catheter, providing injection, and providing tracheostomy care.

<sup>3</sup> Aerosol-generating procedures include, but are not limited to: open airway suctioning, non-invasive or manual ventilation, nebulizer treatment, intubation, high-frequency oscillatory ventilation, chest physiotherapy, manipulating or disconnecting ventilator circuit, sputum induction, bronchoscopy, tracheostomy, and cardiopulmonary resuscitation. High-flow oxygen therapy, such as non-rebreather and venturi masks, while not traditionally considered AGPs, could pose a theoretical risk of aerosolized respiratory secretions and could be considered in the list of high-risk exposure activities.

<sup>4</sup> Information on infection prevention and control and the use of personal protective equipment is available at: [https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-\(ncov\)-infection-is-suspected-20200125](https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-(ncov)-infection-is-suspected-20200125)

<b>Provided direct patient care</b>	Gloves	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
	Gown	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
	Medical mask	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
	N95 respirator, or equivalent	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
	Goggles or face shield	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
	Other, specify _____	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
<b>Performed an aerosol-generating procedure</b>	Gloves	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
	Gown	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
	Medical mask	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
	N95 respirator, or equivalent	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
	Goggles or face shield	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
	PAPR	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
	Other, specify _____	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
<b>Handled laboratory samples</b>	Gloves	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
	Gown	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
	Medical mask	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
	N95 respirator, or equivalent	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
	Goggles or face shield	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
	PAPR	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
	Other, specify _____	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
<b>Involved in transportation</b>	Gloves	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
	Gown	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
	Medical mask	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
	N95 respirator, or equivalent	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
	Goggles or face shield	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
	Other, specify _____	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
<b>Involved in cleaning and laundry</b>	Gloves	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
	Gown	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
	Medical mask	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
	N95 respirator, or equivalent	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
	Goggles or face shield	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
	Other, specify _____	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain



## **Annex 3. 0 CASE RECORD FORM (CRF)**

### **DESIGN OF THIS CASE RECORD FORM (CRF)**

This CRF has 3 modules:

**Module 1** to be completed on the first day of contact with a suspected or confirmed case.

**Module 2** to be completed on first day of admission and daily for as many days as resources allow. Continue to follow-up patients who transfer between admission facilities.

**Module 3** to be completed at discharge or death.

**Module 4.** To be filled during patient follow up

### **GENERAL GUIDANCE**

- The CRF is designed to collect data obtained through examination, interview and review of admission facility notes. Data may be collected retrospectively if the patient is enrolled after the admission date.
- Participant Identification Numbers consist of a site code and a participant number.
- Complete every section. Questions marked "If yes." should be left blank when they do not apply (i.e. when the answer is not yes).
- Selections with square boxes ( ) are single selection answers (choose one answer only).
- Mark 'Unknown' for any data that are not available or unknown.
- Avoid recording data outside of the dedicated areas.
- If using paper CRFs, we recommend writing clearly in ink, using BLOCK-CAPITAL LETTERS.
- Place an (X) in the boxes to mark the answer. To make corrections, strike through ( ) the data you wish to Delete and write the correct data above it. Please initial and date all corrections.
- Please keep all of the sheets for a single participant together e.g. with a staple or participant-unique folder.
- Please transfer all paper CRF data to the electronic database. All paper CRFs can be stored by the institution responsible for them. All data should be transferred to the secure electronic database.

# COVID-19: A Clinical Case Report

## 1. Introduction

The patient is a 55-year-old male with a history of hypertension and diabetes mellitus, who presented to the emergency department with a 10-day history of fever, cough, and shortness of breath.

The patient's symptoms began with a low-grade fever and dry cough, followed by progressive shortness of breath and a productive cough with yellow-green sputum. He denied any recent travel, contact with sick individuals, or exposure to animals.

On physical examination, the patient was tachypneic and had bilateral lower lobe crackles on auscultation. There were no signs of pleural effusion or pulmonary hypertension.

## 2. History of Present Illness

The patient's symptoms were insidious in onset and progressively worsened over the course of two weeks. He had no chest pain, hemoptysis, or weight loss.

Initial laboratory tests showed leukopenia and elevated inflammatory markers, including a high C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR). A chest X-ray revealed bilateral lower lobe infiltrates.

Given the clinical presentation and radiographic findings, a diagnosis of COVID-19 was suspected. A nasopharyngeal swab was collected for viral testing.

## 3. Physical Examination

Vital signs: Temperature 38.3°C, Heart rate 100 bpm, Respiratory rate 22 breaths per minute, Blood pressure 140/90 mmHg, Oxygen saturation 92% on room air.

General: Patient appears ill but is alert and oriented. No focal neurological deficits.

## 4. Diagnostic Tests

Initial laboratory tests showed leukopenia and elevated inflammatory markers, including a high C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR). A chest X-ray revealed bilateral lower lobe infiltrates.

**MODULE 1: Case investigation form (cont)**

1. Name of the patient	2. Age	3. Sex	4. Date of birth
5. Address	6. Telephone number	7. Occupation	8. Education level
9. Date of onset of symptoms	10. Date of admission to hospital	11. Date of discharge	12. Date of death (if applicable)
13. Clinical history	14. Physical examination	15. Investigations	16. Management
17. Contact tracing	18. Risk factors	19. Outcome	20. Comments





**If confirmed:** Date of positive lab test: [D\_] [D\_] [M\_] [M\_] [Y\_] [Y\_] [RDT Ag] [RDT Ab] [PCR]

**If suspect:** Date tested: [D\_] [D\_] [M\_] [M\_] [Y\_] [Y\_] or [No test done]

Contact of known case: [Yes] [No] [Unknown]

**DEMOGRAPHICS**

**Sex** [Male] [Female] [Not specified]

**Date of birth** [D\_] [D\_] [M\_] [M\_] [Y\_] [Y\_] or **Age** [ ] [ ] years OR [ ] [ ] months OR [ ] [ ] days if < 1m

**Occupation:** [Healthcare Worker] [Truck Driver] [Surveillance officer/contact tracer] [Other] \_\_\_\_\_

**Country of residence:** [Uganda] [Kenya] [Tanzania] [Rwanda] [DRC] [S-Sudan] [Other] \_\_\_\_\_

**Symptoms (Tick as applicable)**

Is patient symptomatic: [Yes] [No]		Date onset of first symptom: [D_] [D_] [M_] [M_] [Y_] [Y_] [ ] [ ]
History of fever or chills	[ ]	Conjunctivitis (red eyes) [ ]
Cough	[ ]	Abdominal pain [ ]
Sore throat	[ ]	Myalgia (muscle pain) [ ]
Runny nose	[ ]	Arthralgia (Joint pain) [ ]
Headache	[ ]	Skin rash [ ]
Chest pain	[ ]	General weakness [ ]
Shortness of breath	[ ]	Seizures [ ]
Vomiting / Nausea	[ ]	Confusion/altered consciousness [ ]
Diarrhoea	[ ]	Recent inability to walk [ ]
		Bleeding (site: _____) [ ]
		Other, specify: _____ [ ]

Age Group	Asymptomatic	Mild to Moderate	Severe	Critical
0-12 years	<p>Observation and supportive care</p> <p>Hydration</p> <p>Antipyretics for fever</p> <p>Antibiotics only if bacterial infection is confirmed</p>	<p>Observation and supportive care</p> <p>Hydration</p> <p>Antipyretics for fever</p> <p>Antibiotics only if bacterial infection is confirmed</p>	<p>Observation and supportive care</p> <p>Hydration</p> <p>Antipyretics for fever</p> <p>Antibiotics only if bacterial infection is confirmed</p>	<p>Observation and supportive care</p> <p>Hydration</p> <p>Antipyretics for fever</p> <p>Antibiotics only if bacterial infection is confirmed</p>
13-18 years	<p>Observation and supportive care</p> <p>Hydration</p> <p>Antipyretics for fever</p> <p>Antibiotics only if bacterial infection is confirmed</p>	<p>Observation and supportive care</p> <p>Hydration</p> <p>Antipyretics for fever</p> <p>Antibiotics only if bacterial infection is confirmed</p>	<p>Observation and supportive care</p> <p>Hydration</p> <p>Antipyretics for fever</p> <p>Antibiotics only if bacterial infection is confirmed</p>	<p>Observation and supportive care</p> <p>Hydration</p> <p>Antipyretics for fever</p> <p>Antibiotics only if bacterial infection is confirmed</p>
19-64 years	<p>Observation and supportive care</p> <p>Hydration</p> <p>Antipyretics for fever</p> <p>Antibiotics only if bacterial infection is confirmed</p>	<p>Observation and supportive care</p> <p>Hydration</p> <p>Antipyretics for fever</p> <p>Antibiotics only if bacterial infection is confirmed</p>	<p>Observation and supportive care</p> <p>Hydration</p> <p>Antipyretics for fever</p> <p>Antibiotics only if bacterial infection is confirmed</p>	<p>Observation and supportive care</p> <p>Hydration</p> <p>Antipyretics for fever</p> <p>Antibiotics only if bacterial infection is confirmed</p>
65 years and older	<p>Observation and supportive care</p> <p>Hydration</p> <p>Antipyretics for fever</p> <p>Antibiotics only if bacterial infection is confirmed</p>	<p>Observation and supportive care</p> <p>Hydration</p> <p>Antipyretics for fever</p> <p>Antibiotics only if bacterial infection is confirmed</p>	<p>Observation and supportive care</p> <p>Hydration</p> <p>Antipyretics for fever</p> <p>Antibiotics only if bacterial infection is confirmed</p>	<p>Observation and supportive care</p> <p>Hydration</p> <p>Antipyretics for fever</p> <p>Antibiotics only if bacterial infection is confirmed</p>



### Travel history

Yes  No  
 No  Yes  No  Yes  No  
 No  Yes  No  Yes  No

#### Travel history

- Yes
- No
- Yes
- No

#### Travel history

- Yes
- No
- Yes
- No

- Yes
- No
- Yes
- No

- Yes
- No

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<p><b>ICU or High Dependency Unit admission:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown  <b>Oxygen therapy:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <b>If yes, complete all below</b>  <b>O2 flow:</b> <input type="checkbox"/> 1-5 L/min <input type="checkbox"/> 6-10 L/min <input type="checkbox"/> 11-15 L/min <input type="checkbox"/> &gt;15 L/min <input type="checkbox"/> Unknown (document worst value of the day)  <b>Source of oxygen:</b> <input type="checkbox"/> Piped <input type="checkbox"/> Cylinder <input type="checkbox"/> Concentrator <input type="checkbox"/> Unknown  <b>Interface:</b> <input type="checkbox"/> Nasal prongs <input type="checkbox"/> Mask with reservoir <input type="checkbox"/> CPAP/NIV mask, <input type="checkbox"/> HF nasal cannula  <b>Non-invasive ventilation: (e.g. BiPAP/CPAP)</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <b>If yes, worst pressure support required.....cm H2o</b>  <b>Invasive ventilation (Any)?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <b>If yes, worst SPO<sub>2</sub>/FIO<sub>2</sub> ratio of day</b>  <b>Intropes/vasopressors:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown  <b>Blood gas done:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>If yes, Insert worst values of day pH..... PaO<sub>2</sub>.....PCO<sub>2</sub>.....HCO<sub>3</sub>.....</b>  <b>Extracorporeal (ECMO) support:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <b>Prone position:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown  <b>Renal replacement therapy (RRT) or dialysis?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown  <b>COMPLICATIONS: Does the patient have signs related to any of the following complications?</b></p>			
Shock	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	Bacteremia	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Seizure	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	Bleeding	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Meningitis/Encephalitis	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	Endocarditis	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Anaemia	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	Myocarditis/Pericarditis	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Cardiac arrhythmia	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	Acute renal injury	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Cardiac arrest	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	Pancreatitis	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Pneumonia	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	Liver dysfunction	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Bronchiolitis	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	Cardiomyopathy	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Acute Respiratory Distress Syndrome	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	Other If Yes, specify	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Shock	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown

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**MODULE 3: complete at discharge/death**

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100



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### Annex 3.2 THE MODIFIED NEWS2 SCORE (National Early Warning Score (NEWS))

The score is to aid the clinician in monitoring the admitted COVID-19 patients.

Physiological parameter	SCORE						
	3	2	1	0	1	2	3
Respiration rate (per minute)	≤ 8		9 - 11	12- 20		21 - 24	≥25
SpO <sub>2</sub>	≤ 91	92 - 93	94 - 95	≥96			
Air or Oxygen	-	Oxygen		Air			
Systolic BP (mm Hg)	≤ 90	91 - 100	101 - 110	111 – 219*			≥ 220
Pulse (per minute)	≤ 40		41 – 50**	51 – 90	91 - 110	111 - 130	≥ 131
Consciousness				Alert			CVPU <sup>1</sup>
Temperature (°C)	≤ 35.0		25.1 - 36.0	36.1 - 38.0	38.1 - 39.0	≥ 39.1	

\*Systolic BP >160mmHg alert the physician, \*\* Pulse rate < 50 beats/min alert the physician

ICVPU- Confused, Verbal response, Pain response, Unconscious

2.4.3. CLINICAL RESPONSE TO DIFFERENT NEWS2 SCORES

NEWS2 SCORE	Frequency of monitoring	Clinical response
0	Minimum 12 hourly	continuous monitoring
Total 1-4	Minimum 4-6 hourly	<ul style="list-style-type: none"> <li>Inform the RN who must assess the patient.</li> <li>RN decides whether increased frequency of monitoring and or escalation of care is required</li> </ul>
3 in single parameter	Minimum 1 hourly	<ul style="list-style-type: none"> <li>RN to inform the medical team caring for the patient, who will review and decide whether escalation of care is necessary</li> </ul>
Total 5 or more Urgent response threshold	Minimum 1 hourly	<ul style="list-style-type: none"> <li>RN to immediately inform the medical team caring for the patient.</li> <li>RN to request urgent assessment by the physician or team with core competencies in the care of the acutely ill patient.</li> <li>Provide clinical care in an environment with monitoring facilities.</li> <li>Consider transfer to a facility with ICU level care</li> </ul>
Total 7 or more Emergency response threshold	continuous monitoring of vital signs	<ul style="list-style-type: none"> <li>MO to immediately inform the medical team caring for the patient - this should be at least a specialist.</li> <li>Emergency assessment by the ICURT.</li> <li>Clinical care in an environment with monitoring facilities.</li> </ul>

**NB: For systolic BP >160mmHg alert the physician, pulse rate < 50beats/min alert the physician**



### Annex 3.3 Paediatric Early Warning Score

	0	1	2	3
Behavior	Playing/Appropriate	Sleeping	Irritable <b>OR</b> Parents concerned	Lethargic <b>OR</b> Confused <b>OR</b> Reduced response to pain
Cardiovascular	Pink <b>OR</b> Capillary Refill Time $\leq$ 2 seconds	Pale <b>OR</b> Capillary Refill Time 3 seconds	Grey <b>OR</b> Capillary Refill Time 4 seconds <b>OR</b> Tachycardia $\geq$ 20 above the normal	Grey and mottled <b>OR</b> Capillary Refill Time $\geq$ 5 seconds <b>OR</b> Tachycardia $\geq$ 30 above the normal <b>OR</b> Bradycardia
Respiratory	Normal rate, no recessions, no tracheal tug	Rate $>$ 10 above the normal <b>OR</b> Using accessory muscles <b>OR</b> Oxygen requirement FiO2 30-39% or 4-6L/min O2	Rate $>$ 20 above the normal <b>OR</b> Using accessory muscles <b>OR</b> Oxygen requirement FiO2 40-49% or 6-8L/min O2	Rate 30 above or 5 below the normal <b>OR</b> Sternal recession <b>OR</b> Tracheal tug <b>OR</b> Grunting <b>OR</b> Oxygen requirement FiO2 $>$ 50% or $>$ 8L/min O2
Add 2 extra points for:	$\frac{1}{4}$ hourly nebulizations		Persistent vomiting following surgery	

### Annex 3.4 modified SOFA score and SOFA score

SOFA score	0	1	2	3	4
<b>Respiratory*</b> PaO <sub>2</sub> /FiO <sub>2</sub> SpO <sub>2</sub> /FiO <sub>2</sub>	>400	< 400 316 - 400	< 300 236 - 315	< 200 151 - 235	< 100 ≤ 150
Coagulation Platelets 10 <sup>3</sup> /mm <sup>3</sup>	>150	<150	<100	<50	<20
Liver Bilirubin (mg/dL) Scleral icterus/Jaundice	<1.2 No	1.2–1.9	2.0–5.9	6.0–11.9 Yes	>12.0
Cardiovascular Hypotension	No hypotension	MAP <70	Dopamine <=5ug/kg/ min or dobutamine (any dose)	Dopamine >5ug/kg/min or norepinephrine/ epinephrine </=0.1ug/kg/min	Dopamine >15ug/kg/min or norepinephrine/epinephrine >0.1ug/kg/min
CNS Glasgow Coma Score	15	13–14	10–12	6–9	<6
Renal Creatinine (mg/dL) urine output(ml/d)	<1.2	1.2–1.9	2.0–3.4	3.5–4.9 <500	>5.0 <200

## Annex 4. COVID-19 Waste Management

### Safe management of health care waste

Waste management is the collection, handling, treatment, transportation, processing, recycling or disposal, and monitoring of waste materials.

Safe health-care waste management is fundamental for the provision of quality, people-centered care, protecting patient and staff safety and safeguarding the environment.

Best practices for safely managing health care waste should be followed, including assigning responsibility and sufficient human and material resources to dispose of such waste safely.

There is no evidence at the time of developing these guidelines that direct, unprotected human contact during the handling of health care waste has resulted in the transmission of the COVID-19 virus therefore necessary IPC Precautions should be observed.

All health care waste produced during the care of COVID 19 patients should be collected safely in designated containers and bags, treated, and then safely disposed of or treated, or both, preferably onsite. *See below for different types of wastes.*

### Categories of Waste

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<b>Health Care Waste (HCW)</b>	This is the total waste stream from health care service delivery or research facilities and includes both potential risk and non-risk waste materials.
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<b>Hazardous Health Care Waste</b>	This is waste with a potential to cause harm to both humans and the environment if exposed or improperly handled or disposed of. Approximately 20% of all HCW is estimated to be hazardous and 1% is estimated to be sharps waste.
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<b>Non-hazardous Waste</b>	The largest component of HCW (80%) is non-hazardous waste. However, this can cause a nuisance or create breeding sites of disease vectors like flies and rats. It includes domestic waste, office or compound sweepings and wrappings, and containers of medicines.
<b>Infectious</b>	Has living organisms in it that are capable of causing disease.
<b>Pathological</b>	These are parts of the human body that are removed because they are diseased, usually for identifying the cause of disease.
<b>Sharps</b>	These are objects that can penetrate skin easily and include needle/syringes.
<b>Pharmaceuticals</b>	Related to manufacturing, dispensing, and disposing of unusable medicines and consumables.

## Segregation of Waste in Color Coded Bags

- Black**  Non-hazardous HCW (Household waste).
- Yellow**  Any kind of container filled with infectious HCW, sharps and radioactive waste. 3.
- Red**  Any kind of container filled with highly infectious, pathological, anatomical waste, or effluent and heavy metals.
- Brown**  Filled with Pharmaceutical and cytotoxic waste or heavy metals. Include the effluents.

If waste is moved off-site, it is critical to understand where and how it will be treated and destroyed.

All who handle health care waste should wear appropriate PPE (boots, apron, long-sleeved gown, thick gloves, mask, and goggles or a face shield) and perform hand hygiene after removing it.

## **Annex 5.: Safe and Dignified Burial of a Patient Who Has Died From Suspected or Confirmed COVID-19**

These have been guided by CDCs Infection Prevention and Control for the safe management of a dead body in the context of COVID-19 <https://www.cdc.gov/coronavirus/2019-ncov/downloads/global-covid-19/COVID19vsEbola-burial-guide.pdf>

During the epidemic of COVID-19, the dead bodies of infected persons may constitute a biological risk if they are handled without appropriate protection; that is why the management of burials should be incumbent upon the case management team. In addition; burial ceremonies may attract so some many people; making the guidance on social distancing very difficult to implement and hence the need for a trained burial team to supervise the conduct of the burial ceremony.

The Case Management committee is in charge of creating an expert team that will be responsible for the safe conduct of burials of victims.

The team will be guided by the following main principles:

1. Burials should be conducted as a funeral ceremony, with due respect to the deceased, to facilitate the mourning by the families;
2. During the funeral rites, the team should explain the concept of disinfection and put it into practice;
3. The medical team should present its condolences to the families of the victims;
4. The funeral team should carry out appropriate disinfection the articles in home of the victim that the victim was using especially if the victim has died from home.

### ***a) Safely prepare the dead bodies***

The burial must take place as early as possible after preparation of remains at the hospital. The hospital staff should:

- Prepare the body with care and with appropriate PPE protection in order to avoid getting contaminated;

- Strive to respect the cultural practices and religious beliefs of the family, so long as they do not result in a risk of transmission. Let the family understand that certain practices, that entail a risk of transmission should be abandoned;
- Advise the family and the community about actions to take in order to protect themselves against the disease. If the body is prepared without information nor support to the family and the community, the members of the community would not be willing to bring other relatives to the hospital for fear of not receiving the dead body once the patient has died;
- Find an influential member of the family and get him to ensure that dangerous practices like touching and washing the dead body are avoided.

***To prepare the body at the hospital:***

- Wear full protective PPE recommended for COVID-19 including eye protection and a second pair of rubber gloves;
- 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 put it in a body bag and transfer it as soon as possible to the mortuary area or to the ambulance whichever is applicable.
- There is no need to disinfect the body before putting in the body bag.
- Disinfect the outside of the body bag after the body has been put in it.
- The body should be put in Body bag to avoid any leakage of excessive fluids from the dead body.
- No special transport equipment or vehicle is required to transport
- Preferably there should be separate transport for the burial team; if available.

***b) Safely transport the body.***

- 1.The infection control measures for COVID-19 should remain in force during the transportation of the body to the burial site.
- 2.The body should be transported to the burial place as quickly as possible. Designate a health worker or a member of staff of the establishment to accompany the remains in order to be sure all safety precautions are observed
- 3.Take the shortest route possible for safety reasons and also to limit any possibility of transmission through accidental contact;
- 4.If he has no contact with the body, the driver of the vehicle does not need to wear protective clothes;
- 5.Take along a spray containing household bleach at 0.5% in case of accidental contact with the body or infectious body fluids. Also use it to clean liquids spilled in the vehicle.

***c) Prepare the burial site***

- 1.The tomb must be prepared well in advance and should be deep enough; but at least 2 meters deep;
- 2.The burial site should be cleared to ensure that there is enough space for the family members participating in the burial ceremony to ensure that they can practice social distancing during the burial.

***d) Conduct of the burial at the burial site.***

1. Only immediate members of the family of the deceased should be allowed to attend the burial ceremony, in any case not more than 50 people to attend the burial.
2. Adults >60 years and immunosuppressed persons and people with other risk factors should be discouraged from attending the burial and should not directly interact with the body.
3. People who have died from COVID-19 should be given a dignified burial with appropriate a religious ceremony as appropriate; based on the wished of the relatives. Strict social distancing rules should be followed and Holy Communion should not be administered by the priest during the burial ceremony.

4. Facility for IPC including hand washing facility and/or hand sanitizers should be made available at the burial site.
5. All people attending the burial ceremony to wash / sanitize their hands before entering the burial ground and again wash / sanitize their hands after attending the burial ceremony.
6. A person/person with IPC knowledge should be deployed to observe and ensure that COVID-19 specific IPC measures are adhered to during the ceremony.
7. 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;
8. The parents surrounding the coffin placed on the plateau do not need personal protection equipment, except the pall bearers who should wear thick gloves;
9. The people carrying the body bag to the grave only need gloves
10. and face masks (due to the close proximity of the people carrying the coffin or body bag) as long as the outside of the body bag is decontaminated.

***e) Disinfection the vehicle and other artifacts after transporting and burial of the body***

1. The members of burial team who will disinfect the vehicle should wear protective clothes;
2. Wash the interior of the vehicle where the body was placed with a household bleach solution at 0.5% Concentration;
3. Leave to act for 10 minutes;
4. Rinse abundantly with clean water and let it dry. Be careful: rinse well as household bleach is corrosive.
5. Burn the non-reusable PPE; that is potentially infectious that was used during the burial after the burial ceremony.
6. The clothing and beddings used by the deceased should be disinfected using 0.5% Chlorine Solution.





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## **Annex 6. Institutional Quarantine**

### **What is Institutional Quarantine?**

This is a transparent restriction of persons' activities when they are not ill with COVID-19 for the purpose of protecting unexposed members of the communities from contracting the disease should any person at risk become sick?

This is particularly important for persons who may have been in contact with a person who has signs and symptoms of COVID-19 or is suffering from the disease or has travelled from one of the areas with high transmission of COVID-19.

This means one will stay at a facility identified by the Government without mixing with family members or the general public for the mandatory period of 14 days. However, individuals will be required to interact only with surveillance officers dressed in appropriate Personal Protective Equipment (PPE) who will come daily to carry out a medical check-up.

Institutional quarantine is intended to facilitate early detection of ill health due to COVID-19 and to prevent its spread in the communities, to loved ones and/or other countries or areas.

### **Who should undergo institutional quarantine?**

- Travelers coming from countries/territories/areas with active transmission of COVID-19 as analyzed and designated by the Ministry of Health (refer to the list of Category 1 countries) shall be quarantined for 14 days at a facility identified by Government.
- Any individual who has been in close contact with a person confirmed to be having coronavirus disease will be quarantined for 14 days?

### **How will I travel from the Point of Entry to the place of quarantine?**

- Government is providing transport to all travelers from the high-risk countries from the point of entry to the designated facility

- Ensure adequate ventilation throughout your trip
- Avoid contact with the driver or any other support staff.

### **How will I be monitored during institutional quarantine?**

The Ministry of Health surveillance team will come to the designated facility to monitor you daily for 14 days.

Do family members or other people I live with also need institutional Quarantine?

No family members or friends are allowed to visit you while you are under institutional quarantine. However, if there is any financial support that you require during this period, your next of kin can send it through the management of the institution.

### **What should I do for effective institutional quarantine?**

- If you are under quarantine, you are advised to observe the following prevention and control measures
- Stay in a well-ventilated room **ALONE** with separate hygiene and toilet facilities. Ensure you disinfect it after use using the provided disinfectants or soap and water.
- Ensure that you have adequate food, water, hygiene provisions and appropriate medical treatment for existing medical conditions while in quarantine.
- Ensure that you have the necessary communication facilities e.g. mobile telephone to communicate with family members and other people while in quarantine.
- Always wash your hands with soap and water regularly or use an alcohol-based hand rub.
- Cover your nose and mouth with a handkerchief or tissue when coughing and sneezing. Throw away used tissue immediately into a dustbin or burn it and wash your hands immediately with soap and water or an alcohol-based hand rub. The handkerchief must be washed, dried and ironed by you daily.
- Avoid sharing toothbrushes, utensils, dishes, drinks, towels, clothes or bed linen with anybody in your home.

- Clean and disinfect frequently touched surfaces such as doorknobs/handles, bedside tables, bedframes, and other bedroom furniture daily with regular disinfectant or soap and water.
- Clean and disinfect bathroom and toilet surfaces at least once a day with available disinfectants or soap and water.
- If you develop symptoms of acute respiratory infection, including fever, cough, sore throat and difficulty in breathing, please call the Ministry of Health toll free lines on **0800-100-066 or 0800-203-033** or any other contact provided by the surveillance team for immediate help.

### **What happens if individuals do not comply with institutional quarantine orders?**

Institutional quarantine is **MANDATORY** for a period of 14 days however, should a positive case be identified during the period of quarantine, the duration of quarantine will be extended for a further 14 days. All those who will not comply with these guidelines will be dealt with as provided for in the laws of Uganda.

What should individuals do to keep my spirit up under quarantine? Being under quarantine can be frightening. The following should be done to reduce anxiety:

- Talk to the other members of the family about the COVID-19. Understanding this disease will reduce anxiety.
- Reassure young children using age-appropriate language.
- Think about how you have coped with difficult situations in the past and reassure yourself that you will cope with this situation too. Remember that quarantine won't last for long.
- Keep in touch with family members and friends via telephone, email or social media.
- Exercise regularly from your quarantine area.
- Ensure that you drink at least 8 glasses of water every day to keep hydrated.
- Eat all your meals in a timely manner.

## **What happens when I complete the 14 days of quarantine?**

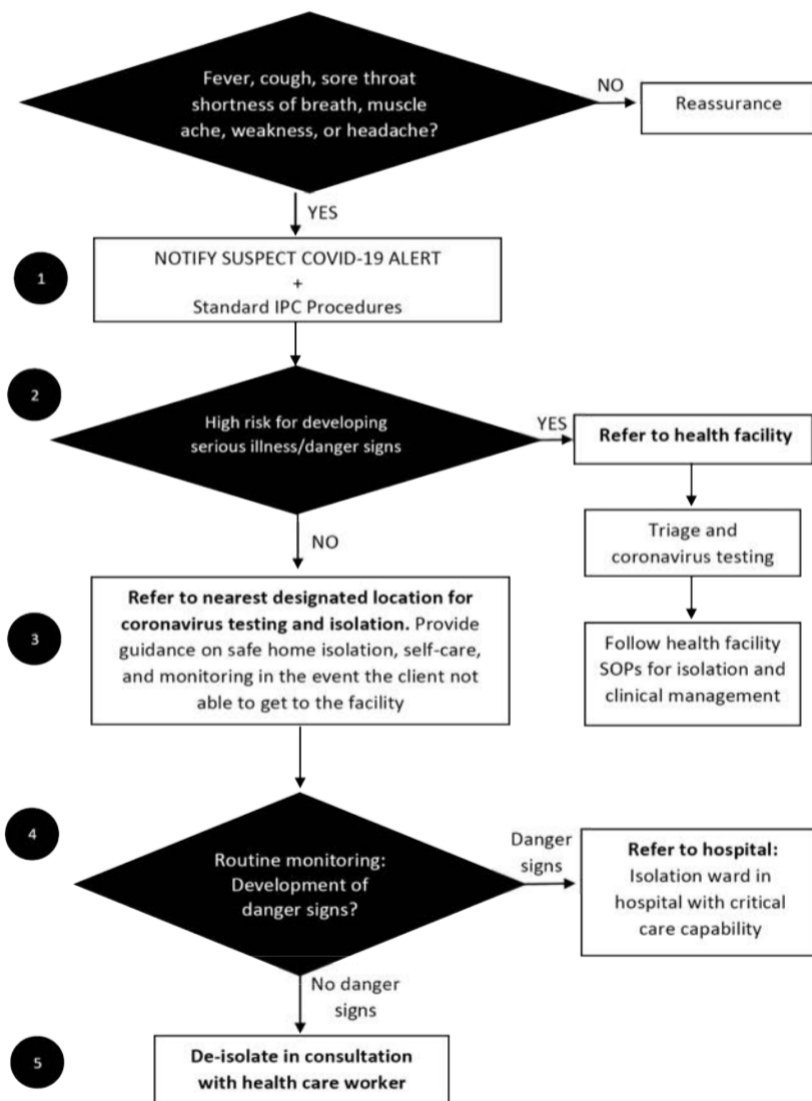
- If you complete the 14 days of quarantine without any symptoms, the surveillance team/health authorities will formally discharge you from follow up and you will be free to go about your usual activities.
- A medical certificate of completion of quarantine will be issued to you.

What happens if I develop symptoms during the 14 days of quarantine? If at any time during your 14 days of self-quarantine, you develop symptoms, you should seek medical attention immediately by calling the following officers,  
call the Ministry of Health toll free lines on: **0800-100-066, 0800 2030**





**Annex 7.** Community Triage Algorithm for VHT and/or district surveillance team







## Community Triage Algorithm for VHT and/or district surveillance team

- 1 **Standard IPC procedures:**
  - Wear a medical mask
  - Thoroughly wash hands before and after visit
  - Give suspect patient a medical mask
  - Keep at least a 2 meter distance from the suspected patient
  - Minimize touching surfaces.
  
- 2 **If any ONE danger sign or listed comorbidity, prioritize for hospital admission:**

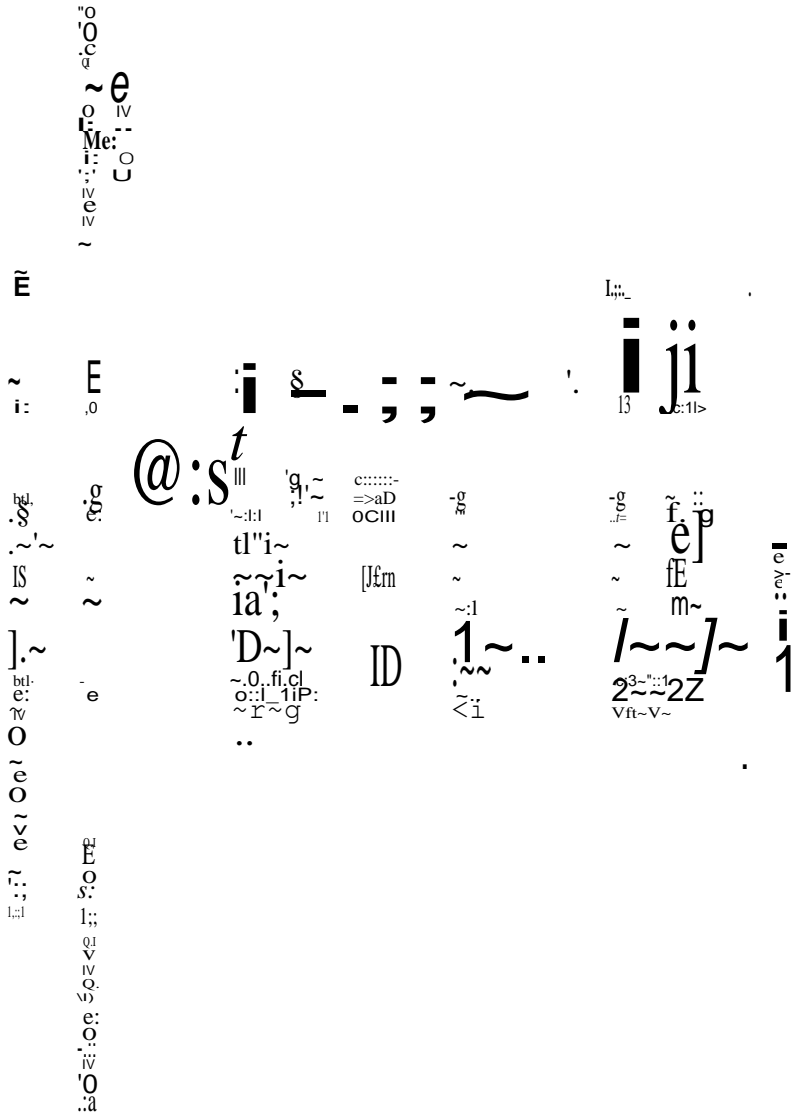
Danger signs	High risk of developing severe disease or complications
<ul style="list-style-type: none"> <li>• <b>Rapid breathing: &gt;30 per minute (adult/child&gt;5y); ≥ 40 breaths per minute for children 1-5 years, ≥50 breaths per minute for children 2-11months.</b></li> <li>• <b>Difficulty breathing and/or chest in drawing</b></li> <li>• <b>Persistent high fever for 3 or more days</b></li> <li>• <b>Disorientation</b></li> <li>• <b>Lethargy (excessive weakness, tiredness)</b></li> <li>• <b>Seizures or convulsions</b></li> <li>• <b>Sunken eyes or other signs of severe dehydration</b></li> <li>• <b>Inability to drink or eat</b></li> </ul>	<ul style="list-style-type: none"> <li>• Age &lt; 1 year or Age &gt; 65 years</li> <li>• Heart conditions such as history of heart attack or stroke</li> <li>• Diabetes</li> <li>• Sickle cell disease</li> <li>• Cancer patients whether or not on chemotherapy</li> <li>• Advanced liver disease</li> <li>• Person living with HIV</li> <li>• Lung diseases (e.g. asthma, TB, COPD)</li> <li>• Kidney disease</li> <li>• Severe Acute Malnutrition</li> </ul>

### 3 Guidance on safe home isolation

- There should be NO person in the patient’s household in a high-risk group (See community algorithm in Annex 1.1).
- The patient should be placed in a separate room if at all possible
- Preferably the patient should have a separate toilet from the rest of the family.
- There should be a designated adult caregiver.
- A health facility should be within 2 hours reach.
- The patient or caregiver should have immediate access to a functioning telephone
- A source of clean water should be readily available
- The patients should have access to separate toilet/pit latrine if possible
- The home should have a door and a window for adequate cross-ventilation
- Soap (or other hand-hygiene products) should be available

**Monitoring cases in the community** – Patients should be monitored daily, preferably by phone, for the development of danger signs, and for any household members who may be developing symptoms.

### Annex 7.1 Guidance on Isolating and Monitoring patients at home



## **Annex 7.2 General Guidelines for Non-Traditional Isolation Facilities**

The facility needs to be set up for cohorting, where suspect and confirmed cases can be separated. More guidance to come on this. IPC and standard Precautions need to be followed to protect the staff. The committee suggests the following guidelines to guide in running the facilities.

- Hand sanitizers and hand washing facilities should be available at multiple points throughout the isolation facility.
- Mattresses, bedding, meals, drinking water and insecticide treated bed nets will be provided by the government to ease compliance
- Any mild case whose symptoms worsen should be triaged by the Health Worker.
- The cases should clean their own dormitory or rooms and do their own laundry.
- IEC materials should be pinned where center staff move the most so that the walls talk to them about COVID 19 signs, symptoms, prevention and who to call.
- Food preparers and servers should be kept to a minimum number needed to prepare food without additional staff. Servers should wear gloves and masks when cleaning away dishes or plates.
- Dishes and plates should first be soaked in warm soapy water for 1 hour before they can be washed to allow for virus to get killed. All dining hall or cafeteria surfaces must be cleaned and disinfected between each meal.
- Staff interaction with isolated cases should also be kept to a minimum number. They should keep a minimum distance of at least 2 meter when interacting with cases and they must wear medical masks and plastic aprons which must be disinfected daily at the end of a shift for use the next day.
- Proper waste collection and disposable protocols should be followed

## **Patient Monitoring at the NTIF**

Twice daily and also as per need follow-up of persons in isolation should be conducted for the duration of their stay. Follow up entails taking body temperatures and screening for symptoms and their severity.

The Health worker should be a trained person designated by the Ministry of Health and should ideally be the same person for one facility to avoid multiple exposures if different persons are used to conduct the activity.

## **Occupational Health**

- All staff should be trained on the basics of infection prevention and control (IPC) procedures for non-medical facilities, as well as how to don and doff PPE.
- Special disposal bins should be provided for PPE disposal.
- All staff should maintain a minimum distance of 2m from all other persons in the isolation center at all times.
- All staff should undergo temperature and symptom screening on entry to and exit from work each day. These screenings should be logged in a paper log, to be checked by the Ministry of Health surveillance officer / symptom monitor who visits the isolation facility.
- Anyone feeling ill should report symptoms immediately to the quarantine site focal point.

## **Annex 8. Guidelines for the Management of Pregnant, Breastfeeding Women, and Infants**

### **BACKGROUND**

- Sexual and reproductive health is a significant public health issue during epidemics, and safe pregnancy and childbirth
- The COVID-19 pandemic has raised specific concerns regarding the management of pregnant, breast feeding women and infants.
- There is limited data on effects of the COVID-19 virus among pregnant, breastfeeding feeding women and infants.
- There is no evidence that pregnant women present with different signs or symptoms or are at higher risk of severe illness. There is currently no known difference between the clinical manifestations of COVID-19 pregnant and non-pregnant women or adults of reproductive age.
- So far, there is no evidence on mother-to-child transmission. Increased severe maternal or neonatal outcomes is uncertain, and limited to infection in the third trimester, with some cases of premature rupture of membranes, foetal distress, and preterm birth reported.

### **Advice for health workers to share with pregnant women during Antenatal Care**

- Health workers should provide psychosocial counseling and support to suspected, probable or confirmed pregnant women with COVID-19.

### **Key messages**

- o If you are infected with COVID-19, you are still most likely to have no symptoms or a mild illness from which you will make a full recovery. o If you develop more severe symptoms or your recovery is delayed, this may be a sign that you are developing a more significant chest infection that requires enhanced care, you should contact your health worker for further information and advice.
- Health workers should encourage pregnant women to increase their social distancing to reduce the risk of infection during their stay at the health facility and in the community.



- Pregnant women should pay particular attention to avoiding contact with people who are known to have COVID-19 or those who exhibit possible symptoms. Women above 28 weeks' gestation should be particularly attentive to social distancing and minimizing contact with others.

### **Advice for health workers while giving caring to pregnant women**

- Care for pregnant and postnatal women is an essential service and should be planned for along with other essential services.
- Health workers should continue to provide antenatal, delivery and postnatal care as a routine package but should practice appropriate IPC measures for COVID-19, including personal protective wear.
- Women should be advised to attend routine antenatal care unless they meet current self-quarantine guidance for individuals and households of individuals with symptoms of new continuous cough or fever.
- While in the community, if a pregnant woman develops symptoms suggestive of COVID-19, and fits the criteria for case definition for suspect or probable case for COVID-19, she should contact the midwife or obstetrician attending to her at the health facility to postpone the routine ANC visits. The health worker will contact surveillance teams to continue checking on the suspected, probable pregnant woman to ensure they comply with the self-quarantine measures.
- At the health facility, if a pregnant woman is a suspected, probable case and fits the criteria for case definition of COVID-19, the health worker shall inform the laboratory staff who shall initiate testing for COVID-19. If the patient is negative but has been exposed, she should start self-quarantine for 14 days. She should contact the health workers at the health facility to postpone routine visits and the health worker should ensure that the health surveillance team conducts follow up checks until after the self-quarantine period is over.
- If a pregnant woman is a confirmed case, the health worker will refer her to the isolation unit for further management. The patient needs to continue receiving obstetric care when in isolation.

- Maternity departments with direct entry for patients and the public should have in place a system for identification of potential cases as soon as possible to prevent potential transmission to other patients and staff. This should be at first point of contact (either near the entrance or at reception) to ensure early recognition and infection control. This should be employed before a patient sits in the maternity waiting area.
- In the event of a pregnant woman attending with an obstetric emergency and being suspected or confirmed to have COVID-19, maternity staff must first follow IPC guidance. This includes transferring the woman to an isolation room and wearing appropriate PPE. Once IPC measures are in place, the obstetric emergency should be dealt with as the priority.
- Do not delay emergency obstetric and newborn care (EMONC) service delivery in order to test for COVID-19.
- Health workers should continue providing care for a woman with COVID-19, until a negative test result is obtained.
- If ultrasound equipment is used, this should be decontaminated after use in line with IPC guidance
- All pregnant women with or recovering from COVID-19 should be provided with psychosocial counselling and information related to the potential risk of adverse pregnancy outcomes.

### **Advice for health workers while giving caring to pregnant women during delivery**

- Health workers should encourage pregnant women to deliver from health facilities for their safety and that of their newborns.
- Once settled in an isolation room, a full maternal and fetal assessment should be conducted to include: Assessment of the severity of COVID-19 symptoms should follow a multi-disciplinary team approach including an infectious diseases or medical specialist, Maternal observations including temperature, respiratory rate and oxygen saturations; Confirmation of the onset of labor, as per standard care and electronic fetal monitoring.
- If labor is confirmed, then care in labor should continue in the same isolation room, ensuring privacy, respect and dignity for the mother.

- Maternal observations and assessment should be continued as per standard practice has been ‘topped-up’ for an emergency caesarean birth or a woman with a newly sited spinal anesthetic that was inserted without difficulty and became effective in the expected timeframe.
- Where women with suspected or confirmed symptoms of COVID-19, or confirmed COVID-19 have scheduled appointments for pre-operative care and elective caesarean birth, an individual assessment should be made to determine whether it is safe to delay the appointment to minimize the risk of infectious transmission to other women, healthcare workers and, post-natally, to her infant.
- If a pregnant woman is diagnosed with COVID-19, without respiratory distress and requires delivery by cesarean section, the health worker should **administer spinal anesthesia**.
- If the pregnant woman is diagnosed with COVID-19, and is critically ill, with features of respiratory distress, and requires ventilation, the mother should be delivered by Caesarean section under general anesthesia with ventilation.

### **Advice for health workers while giving care to breast feeding mothers and their infants**

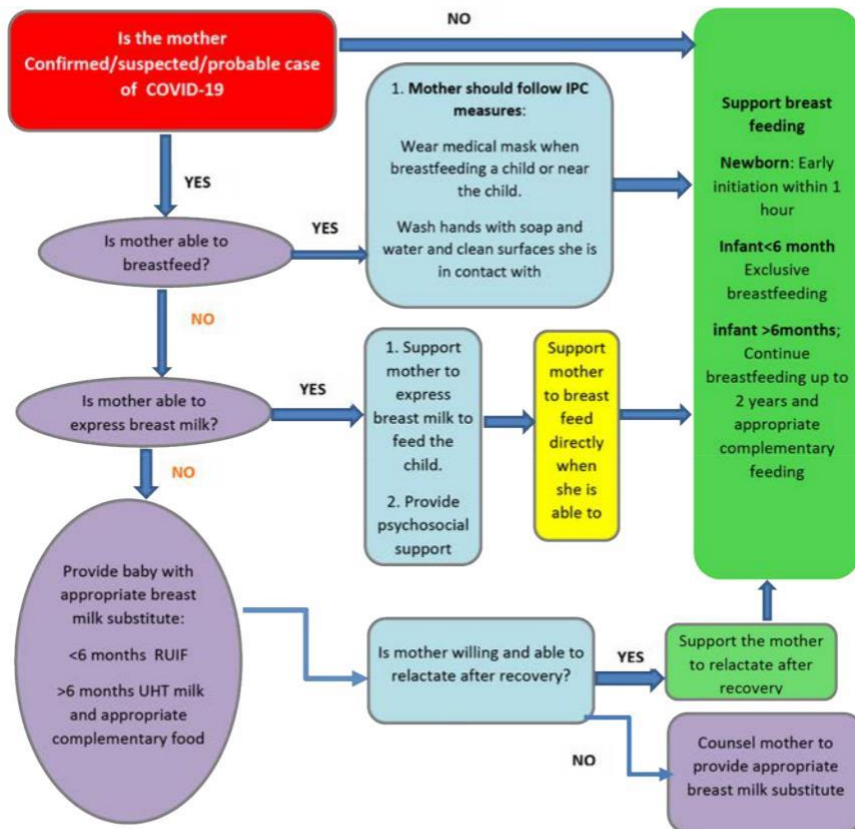
- Health workers should encourage women who are COVID-19 positive to breastfeed and take necessary precautions to limit viral spread to the baby. Hand washing before touching the baby, breast pump; avoiding coughing or sneezing on the baby while feeding at the breast; considering wearing a face mask while breastfeeding.
- In cases where a breastfeeding baby is COVID-19 positive and the mother is negative it recommended that the mother continues to breastfeed, and it is preferable to isolate the baby and mother away from other COVID patients on the ward; if possible in a side room. In case a side room is not available, a designated section of the ward should be reserved for only mothers and their children. The mother should be given full PPE (**medical mask, eye protection, gown and gloves**) to wear to avoid contracting COVID-19 infection from other positive patients on the ward.
- In cases where a non-breastfeeding child (or child greater than 2 years of age) is COVID-19 positive and the mother is negative, priority should be given to nursing the child in a side room.

## Two options can be considered:

- o The children can be separated from the mother and the child nursed and taken care of by the nursing staff on the ward.
- o The mother can be taught and given clear instructions and provided with full PPE (medical mask, eye protection, gown and gloves) to protect her from getting infected by the baby other positive patients on the ward BUT allowed to take care of her child on the ward. Regular enforcing of the message on proper PPE use to her is important. The mother should be encouraged to undertake regular hand hygiene with soap and water or alcohol-based hand rub after handling the child.
- All post-natal mothers who were confirmed cases of COVID-19 should be managed according to the standard management guidelines.
- All postnatal women with or recovering from COVID-19 should be provided with psychosocial counselling and information related to the potential risk of adverse pregnancy outcomes.
- Women's choices and rights to sexual and reproductive health care should be respected regardless of COVID-19 status, including access to contraception.
- Infants born to mothers with suspected, probable, or confirmed COVID-19 should be fed according to standard infant feeding guidelines, while applying necessary precautions for IPC.
- Breastfeeding counselling, basic psychosocial support, and practical feeding support should be provided to all pregnant women and mothers with infants and young children, whether they or their infants and young children have suspected or confirmed COVID-19.
- Breastfeeding women should not be separated from their newborns, as there is no evidence to show that respiratory viruses can be transmitted through breast milk. The mother can continue breastfeeding, as long as the necessary IPC precautions are applied:
- Symptomatic mothers well enough to breastfeed should wear a mask when near a child (including during feeding), wash hands before and after contact with the child (including feeding), and clean/disinfect contaminated surfaces, avoid touching the baby's eyes, mouth or nose.
- If the mother does not have a mask, she should still be encouraged to continue breastfeeding while applying other IPC measures.

- All recently pregnant women with COVID-19 or who have recovered from COVID-19 should be provided with information and counselling on safe infant feeding and appropriate IPC measures to prevent COVID-19 virus transmission.

## ANNEX 8.1 DECISION TREE FOR BREAST FEEDING AND COMPLEMENTARY FEEDING FOR CHILDREN AGED 6-23 MONTHS IN CONTEXT OF COVID-19



## **Annex 9. TB COVID Co management**

### **Background**

The World Health Organization declared COVID 19 a pandemic on March 11th 2020 and Uganda reported its first patient on Mar 21, 2020. Two hundred forty new TB disease patients occur every day in Uganda and about 30 of these die from the disease. COVID 19 affects the respiratory system and signs/symptoms are similar of TB with most confirmed symptomatic cases in Uganda presenting with a cough. Cough is a cardinal symptom of active tuberculosis disease. Unless a patient is carefully assessed, it is hard to exclude TB from someone suspected or confirmed with COVID. The main difference in the presentation of Covid-19 and TB is in the duration of symptoms. TB symptoms are of slow onset compared to COVID which is an acute disease with symptoms occurring within days of exposure. TB is an airborne transmission from an infected individual, therefore prevention measures for TB are similar to those of COVID and strengthening prevention of COVID will go a long way to prevent tuberculosis as well.

There is therefore a need to integrate COVID 19 and TB surveillance and treatment to minimize missed opportunities and enhances recovery from both TB and COVID for better outcomes.

### **Infection prevention and control for TB**

- Similarly, implementation of TB infection control practices should continue as recommended to minimize the risk of transmission in treatment centers
- Health workers managing TB patients require use of N95 to prevent the transmission of TB.
- All persons with TB also require to use masks (non-medical) to minimize transmission to other people.

## **TB screening**

- TB symptom screening (cough, fever for 2 or more weeks, night sweats, history of contact, weight loss) should be done for all people with suspected or confirmed COVID.
- Sputum examination for TB diagnosis with or without X-ray is recommended for all confirmed COVID cases with a positive symptom screen for TB.

## **Presumptive TB case (positive symptom screen is**

- Any person with cough of 2 or more weeks and/or fever of 2 or more weeks and/or noticeable weight loss and/or contact with TB patient or a child who is not growing well, excessive night sweats,

## **TB diagnosis**

- Sputum examination should be performed to confirm TB diagnosis

## **Confirmed TB (lab confirmed)**

Any person in whom mycobacterium tuberculosis complex (MTC) is positive in a biological specimen by:

- smear microscopy, Xpert MTB/RIF, TB LAMP or TB LAM (for PLHIV with CD4<200 OR HIV positive who is critically ill) or culture

## **TB treatment and follow up**

- COVID TB co-infected patients should be initiated on TB treatment immediately as per national guidelines
- COVID patients already on TB treatment should continue with treatment at all times to completion
- and educated/counselling prior to dispensing of medicines
- Treatment and management of COVID as per national guidelines
- Patients monitoring for any adverse events should be done routinely
- Treatment for COVID TB patients should be done from the COVID center by the designated health workers in the unit.

## **MDR-TB**

- The appropriate treatment for MDR-TB should be determined by the panel and administered to the patients daily in the COVID treatment center.

## **Follow - up**

- If admitted COVID 19-TB patients stay in the hospitals for more than 2 months, the sputum follow up at 2 months should be collected for lab testing to determine progress
- On discharge, COVID 19-TB co-infected patients should be linked to the TB treatment unit nearest to their home to continue with care or if admission is deemed necessary after COVID 19 discharge treatment should continue on the TB unit.

## **TB preventive therapy**

- Patients on preventive therapy should be maintained on treatment during COVID management

## **Contacts management and community level activities**

- All confirmed TB cases should have their contacts screened for TB. In this case TB/COVID contacts management should be conducted following prevention guidelines
- Following discharge from the COVID treatment center, the TB patients will continue treatment at home and must be linked with a community member to support them to complete treatment.

## **TB medicines Stock**

- Once TB is diagnosed in a COVID patient/suspect, the treatment center staff should link up with the TB unit to access treatment for the patient.



## **Monitoring COVID TB co-management;**

The COVID case report form/summary should highlight the suspects under isolation/quarantine or confirmed COVID patients with TB. The specific indicators include;

#Presumed/Suspected TB among COVID suspects

#Confirmed TB among COVID suspects

#confirmed TB cases among COVID patients

#TB/COVID patients in care (cumulative)

## **Annex 10: Procedures for Nutrition Care for Hospitalized COVID-19 Patients.**

### **INTRODUCTION**

Majority of people who get infected with Corona virus develop mild or uncomplicated illness. However, approximately 14% develop severe disease that requires hospitalization while 5% will require Intensive care management.

Good supportive care remains the cornerstone in managing ill patients with COVID-19. Adequate nutrition support can slow catabolism in critically ill patients and can improve patient outcome, reduce duration of recovery and length of hospital stay. Hospitals in Uganda should aim at including nutrition in the care of inpatients admitted with COVID-19.

**PURPOSE:** To provide guidance on the nutrition care of hospitalized COVID-19 patients including the critically ill receiving ICU management.

**Targeted Users:** Physicians, Nutritionists, Clinicians, Nurses, Pharmacists, intern students directly involved in management of COVID-19 patients.

### **Objectives**

- To support the nutrition management of hospitalized COVID-19 patients to enhance recovery.
- To help health care providers to correctly identify the most appropriate and timely nutrition care support for all COVID-19 patients admitted in health facilities.
- To define recommendations for the provision of enteral/parenteral nutrition by healthcare providers.

**Target Population:** All patients hospitalized with COVID-19 disease.

## **Key Organizational Priorities**

A multidisciplinary nutrition support team working within the clinical guidelines and members drawn from senior representation from medical staff, Specialists, Clinicians, Nutritionists, nursing, pharmacy, medical Social worker, catering and other healthcare professionals as appropriate, for example, speech and language therapists.

All health workers who are directly involved in patient care should receive education and training on the importance of providing adequate nutrition to admitted patients.

Health workers should ensure that all people who need nutrition support receive coordinated care from a multidisciplinary team.

<b>Key Recommendations</b>	
<b>Nutritional Assessment</b>	<ul style="list-style-type: none"> <li>• The assessment should consider: Anthropometry and dietary history of the patient; level of disease severity; co-morbid conditions; functioning of gastro intestinal tract or recent weight loss.</li> <li>• Nutrition screening and assessment should be done as soon as possible to identify the patient’s nutrition status before feeding.</li> <li>• The use of Mid Upper Arm Circumference (MUAC) using color coded tapes is recommended for all patients 6 months of age and above</li> <li>• MUAC tapes <b>MUST</b> be cleaned with disinfectants after each measurement</li> <li>• The elderly and polymorbid, patients are at greatest risk of poor nutrition outcomes and higher mortality following infection with COVID-19</li> <li>• Assessment findings should be documented and the Nutritionist should collaborate and coordinate with the medical teams to develop a safe nutrition care plan for the patient</li> </ul> <p><b>All Health Care Providers involved in the nutrition assessment should be provided with PPE and adhere to MOH IPC recommendations.</b></p>
<b>Nutritional care for hospitalized COVID-19 patients</b>	
<b>Mild or moderate cases</b>	<ul style="list-style-type: none"> <li>• Feeding should start immediately following admission</li> <li>• Patients should be fed on a variety of locally available foods to give balanced diets including foods with added nutrients (fortified foods) such as porridges made from fortified flours.</li> <li>• A balanced diet includes energy giving foods, body building and protective foods)</li> <li>• Provide more Vitamin C rich fruits and vegies (e.g. Lemon, orange juice, limes, tomatoes, pineapples, water melons, tangerines, mangoes, sweet bananas etc.)</li> <li>• Feed the patients at least 3 meals (breakfast, lunch supper) and 2 snacks (mid-morning and evening)                         <ul style="list-style-type: none"> <li>• Provide patients with adequate intake of fluids; at least 8 glasses of clean safe water spread through the day</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>• Ensure that drinks and snacks are accessible.</li> <li>• Patients with no appetite should be given small frequent portions.</li> <li>• Food can be mashed/blended depending on the patient’s condition and age</li> <li>• Supplementation with micronutrients is encouraged according to recommended daily allowances (RDA) and depending on individual needs.</li> <li>• Individualized diets, meal planning and common dietary modifications needed to address COVID-19 symptoms and patients with comorbidities (e.g. diabetes, kidney diseases, liver disease, allergy, intolerances) guided and supervised by the Nutrition Expert- Annex 1</li> <li>• Nutritional treatment should continue after hospital discharge with provision of food package of dry rations (for 1 month) and individualized nutritional meal plans.</li> </ul>
<p><b>Severe or critically ill patients</b></p>	<p>Patients who present with history/symptoms or complications that can affect oral food intake e.g. dysphagia, severe anorexia, nausea or vomiting should be reviewed by a clinician</p> <p>Determine the nutritional adequacy of a patient’s dietary intake and make the decision on the alternative ways to ensure patient receives adequate nutrition either through oral nutrition support, enteral or parenteral nutrition</p> <p><b>Timing of Delivery of Nutrition Therapy</b>          Nutrition Therapy should start early within 24-36 hours of admission to the ICU or within 12 hours of intubation and placement on mechanical ventilation</p> <p>In patients unable to maintain volitional oral intake, early enteral nutrition is recommended</p> <p><b>Oral Nutrition Support</b></p> <ul style="list-style-type: none"> <li>• It is indicated for patients who are able to swallow safely</li> <li>• Home-made and/or commercially available products can be used to improve nutritional outcomes of critically ill patients.</li> </ul>

- Should be high energy, diverse nutrient dense fresh foods/mashed or blended; specialized nutritious foods (fortified/bio fortified legumes, cereals/ flours and medium quantity Lipid-based Nutrient Supplements can be used.

### **Enteral Nutrition**

Consider enteral **tube feeding** in people who are malnourished or at risk of malnutrition with 1) inadequate or unsafe oral intake, and 2) a functional, accessible gastrointestinal tract.

- Home-made and/or commercially available products can be used for EN
- Producing feeds locally should be done under supervision by a Nutritionist to ensure reduced infective risks and potential poor nutritional quality (especially the micronutrients).
- Sole-source nutrition should be used under medical supervision by a Nutritionist expert and should consider patient's condition and presence of comorbidity
- Selection criteria for commercial formula products for enteral nutrition (Annex 2)

### **Monitoring Enteral feeding**

Patients receiving ETF should be closely monitored, particularly early after instigation. Monitoring allows:

- Quantification of losses to enable daily estimation of replacement requirements
- Maintenance of metabolic balance
- Detection of toxicity/deficiency states and early detection of complications.
- Recording the volume and type of feed administered
- Early monitoring requires blood glucose to be checked at 4–6 hour intervals and plasma sodium, potassium, magnesium, and phosphate to be checked daily.

### **Stopping enteral tube feeding (ETF)**

Wean the patient off enteral nutrition once the patient has recovered, can swallow and the GIT or general function permits adequate oral intake. Review and closely observe the patient during the transition to oral feeding.

	<p><b>Parenteral Nutrition</b> is indicated for critically ill patients when there is;</p> <ul style="list-style-type: none"> <li>o Inadequate or unsafe oral and/or enteral nutritional intake</li> <li>o A non-functional, inaccessible or perforated gastrointestinal tract</li> <li>o High risk of aspiration; and Paralytic ileus</li> </ul> <ul style="list-style-type: none"> <li>• Feeding should be introduced progressively and closely monitored; start with 50% of estimated needs for the first 24–48 hours.</li> <li>• Before using parenteral nutrition products, ensure that the product meets the dietary requirements of the patient</li> <li>• Any adjustments should be made under appropriate pharmaceutically controlled conditions</li> <li>• Once adequate oral or enteral nutrition is tolerated and nutritional status is stable, plan a stepwise withdrawal with a daily review of the patient’s progress.</li> <li>• Stop parenteral feeding once the patient is fully established on adequate oral and/or enteral support.</li> <li>• Daily dosages in parenteral nutrition given in Annex 10.3</li> </ul>
<p><b>Critically Ill patients with comorbidities (Diabetes, Hypertension, Heart Disease etc.)</b></p>	<p><b>Special feeding recommendation for patients with comorbid conditions (Annex 4)</b></p> <ul style="list-style-type: none"> <li>• These patients may be at-risk of refeeding syndrome and the first 72 hours of feeding is the period of highest risk</li> <li>• Start slow feeding; give 25% of energy goal (<math>\leq 10</math> kcal/kg/day, increase levels slowly to meet or exceed full requirements by day 4 to 7.</li> <li>• Consider 5 kcal/kg/day in extreme cases, such as anorexia nervosa patients</li> <li>• In the first week of critical illness, aim at energy goal of 15-20 kcal/kg body weight (BW)/day; 70-80% of energy requirements and protein goal of 1.2-2.0 gm/kg BW/day</li> <li>• Consider hypocaloric feeding in critically ill obese (BMI <math>&gt;30</math>kg/m<sup>2</sup>), e.g. 60-70% of target energy requirements</li> <li>• Monitor electrolytes (Annex 10.5)</li> </ul>





	<p>Administer histamine – 2 receptor blockers or proton pump inhibitors in patients with high risk factors for GIT bleeding, coagulopathy, renal replacement therapy, liver disease, multiple comorbidities and higher organ failure score.</p>
<p><b>Severely malnourished</b></p>	<ul style="list-style-type: none"> <li>• Suspected COVID-19 children who also have Severe Acute Malnutrition (SAM) should be isolated from other SAM children</li> <li>• Conduct the Emergency Triage, Assessment and Treatment (ETAT) procedures for the seriously ill patient with COVID-19</li> </ul> <p><b>Therapeutic Feeding</b></p> <ul style="list-style-type: none"> <li>• Feeding in severely malnourished patients with COVID-19 must be started cautiously, in frequent, small amounts</li> <li>• The diet used in the stabilization-phase of treatment is F-75 (milk-based formula containing 75 kcal/100 ml and 0.9 g protein/100 ml)</li> <li>• Patients should NOT gain weight on F-75. The diet allows their biochemical, physiological and immunological function to start to recover before they have the additional stress of making new tissues.</li> </ul> <p>Give 130ml per kg per day for both edematous and non-edematous children.</p> <p>Children should not be given any other food apart from prescribed F-75</p> <p>F75 is replaced by Ready to Use Therapeutic Food, (or if the RUTF is not accepted) by F-100 once the patient has stabilized and moved to transition phase</p> <p>The recommended milk-based F-100 contains 100 kcal and 2.9 g protein/100 ml</p> <p><b><i>Refer to the Integrated Management of Acute Malnutrition guidelines (2019) for more details on the nutrition care for malnourished patients</i></b></p>

<b>IPC measures</b>	<p>Nutrition personnel reviewing patients' feeding should be provided with protective clothing and practice safety measures as provided for all healthcare providers</p> <p>Before preparing, serving or eating food, hospital kitchen staff should wash their hands thoroughly with clean water and soap for a minimum of 20 seconds</p> <p>Safe handling of food packaging materials; COVID-19 can remain on materials (e.g. cardboard packages for up to 24 hours; polythene bags, sacks or boxes)</p> <p>Procurement of disposable feeding utensils could be considered in the isolation wards</p>
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all age

**6-11 months and 12-24 months 1. Sample meal plan for hospitalized covid-19 breastfeeding children aged groups including diabetic patients Annex 1:10. Sample meal Plans for hospitalized covid-19 patients across**

Foods	6-11 months Breastfeeding		12-24 months Breastfeeding	
	Serving size (g)	Household unit size	serving size	Household unit size
ground nut cooked	100	5 tablespoons	100	5 tablespoons
Cooked dry beans	90	4 and 1/2 tablespoons	100	5 Tablespoons
cow milk boiled	250	1/2 cup	250	1/2 cup
maize porridge	125	1/4 cup	200	1/2 cup
Maize bread/posho			50	3 tablespoons
Green leafy vegetables	30	2 tablespoons	30	2 tablespoons
Boiled egg	30	1 egg	N/A	N/A
Orange fruit	N/A	N/A	30	1/4 fruit
<b>Limiting nutrients</b>	<b>Iron 48% and Zn 76% RNI IS met</b>			
<b>Note: Child should continue breastfeeding on demand</b>				

**2. Sample meal plan for hospitalized covid-19 non breastfeeding children aged 12-24 months**

<b>12-23 months Non breastfeeding children</b>		
<b>Foods</b>	<b>Serving size (g)</b>	<b>Household unit size</b>
ground nut cooked	120	6 tablespoons
Cooked dry beans	100	5 table spoon
cow’s milk boiled	500	1 cup
maize porridge	250	1/2 cup
Maize bread/posho	50	1/8 cup
Green leafy vegetables	40	2 and 1/2 tablespoons
Boiled egg	30	1 egg
Orange fruit	30	1/4 fruit
<b>Limiting nutrient</b>	<b>Iron 89% and zinc 80%</b>	

Foods	3-6 YEARS		7-9 YEARS-		10-12 YEARS	
	Serving size (g)	HH units	Servin g size (g)	HH units	Serving size (g)	HH size
Cooked dry beans	100	5 table spoons	100	5 table spoons	100	5 tablespoons
Maize porridge	250	1/2 cup	250	1/2 cup	500	1 cup
Boiled cows milk	500	1 cup	550	1 and 1/8 cup	700	1 and 1/2 cup
Maize bread/posho	200	1/2 cup	300	3/4 cup	220	1/2 cup
cooked green leafy vegetables	60	3tablespoons	70	3 and 1/2 tablespoons	80	4 tablespoons
Boiled egg	30	1 egg	30	1 egg	30	1 egg
orange fruit	80	1/2 medium	100	3/4 fruit	130	1 medium
Cooked groundnut sauce	80	4 tablespoons	100	5 table spoons	120	6 tablespoon
safe drinking water (ml)	800	4 glasses	1000	5 glasses		
Limiting nutrient	Potassium-87.7% RNI is met					

Foods	13-19 YEARS BOYS		13-19 YEARS GIRLS	
	Serving size (g)	HH units	Serving size (g)	HH units
Cooked dry beans	150	1 serving spoon	100	3/4 serving spoon
Maize porridge	250	1/2 cup	250	1/2 cup
Boiled cows milk	700	1 and 1/2 cups	600	1 and 1/4 cup
Maize bread	250	1/2 cup	180	1/3 cup
cooked green leafy vegetables	130	1/4 cup	180	1/4 cup
Boiled egg	30	1 egg	30	1 3 egg
orange fruit	100	1 fruit	100	1 3 fruit
Cooked groundnut sauce	120	1/4 cup	100	1/3 cup
safe drinking water (ml)	1800	9 glasses	1800	9 glasses
<b>Limiting nutrients</b>	Mg 62.7% and potassium 83.1% RNI is met; can be met by adding 2 fresh bananas		Potassium 55% and mg 65% and Mg 68% RNI is met. Add fresh bananas, cabbage to meet gaps	

	20-50 MALES		20-50 FEMALES	
<b>Foods</b>	<b>Serving size (g)</b>	<b>HH size</b>	<b>Serving size (g)</b>	<b>HH size</b>
cooked groundnut sauce	100	3/4 Serving spoon	100	3/4 serving spoon
cows milk boiled	650	1 and 1/4 cup	650	1 and 1/4 cup
maize porridge	500	1 cup	500	1 cup
Maize bread/posho	350	3/4 cup	250	1/2 cup
cooked dry beans	350	3/4 cup	250	1/2 cup
Cooked green leafy vegetables	50	2 tablespoons	100	1 serving spoon
Orange	100	1 medium fruit	100	1 medium fruit
Boiled egg	N/A	N/A	N/A	N/A
safe drinking water (ml)	1800	9 glasses	1800	9 glasses
<b>Limiting nutrients</b>	Potassium 45.0%, Mg 61.9 %, Vitamin B6 86 RNI met		Potassium 59.1%, Mg 62.9%, Vitamin B6 89 is met	

Foods	51-65 MALES		51-65 FEMALES	
	Serving size (g)	Household unit	Serving size (g)	Household unit
cooked groundnut sauce	100	3/4 Serving spoon	90	1/2 serving spoon
cows milk boiled	550	1 and 1/4 cup	500	1 cup
maize porridge	500	1 cup	250	1/2 cup
Maize bread/posho	200	1/2 cup	200	1/2 cup
cooked dry beans	130	1/4 cup	130	1/4 cup
Cooked green leafy vegetables	100	6 tablespoons	80	4 tablespoons
Orange	125	1 medium fruit	120	1 medium fruit
Boiled egg	N/A	N/A	N/A	N/A
safe drinking water (ml)	1400	7 glasses	1450	7 and 1/4 glasses
<b>Limiting nutrients</b>	Potassium 49%, Mg 63.9 % RNI met		Potassium 59.1%, Mg 62.9%, Vitamin B6 89 RNI is met	



Food type	Male		Female	
	Serving size (g)	household units	Serving size (g)	household units
Whole meal bread	60	2 slices	60	2 slices
Cows boiled milk	500	1 tumpeco	500	1 tumpeco
Fresh banana	180	1 medium sized banana	100	1 medium sized banana
Boiled egg	30	1 egg	30	1 egg
green leafy vegetables (dodo)	200	1/2 cup	120	four heaped tablespoons
cooked matooke	220	1/2 cup	300	3/4 cup
Posho	100	1/4 cup	100	1/4 cup
cooked dry beans	120	1 serving spoon (beans only)	130	1 and 1/4 serving spoon
Orange fruit	120	1 medium sized orange	150	1 medium sized orange
Cooked groundnut sauce	160	1 and 1/2 serving spoon	180	1 and 1/2 serving spoon
Boiled drinking water	1400	7 glasses	1400	7 glasses

**Note: An equivalent of a cup is a plastic tumpeco (500ml)**

## Annex 2: Guide on selection of commercial enteral feeding solution

Condition	Yes	No
<b>Normal GIT function</b>	Choose whole protein feed	Consider semi-element /elemental product
<b>Restricted fluid volume/higher energy containing feed needed</b>	Choose high energy feed  Consider when a disease specific formula will be needed	Choose a standard formula
<b>Patient constipated</b>	Choose standard feed containing insoluble fiber	Consider standard feed containing soluble fiber/  Soluble fiber could be given instead of standard feed as additional benefit included glycemic content.
<b>Specific diet restriction/special nutritional need</b>	Consider a disease specific or paced formulation	Choose a standard feed

Source: Pat Howard, *Basics in clinical nutrition: Enteral nutrition e-SPEN, the European e-Journal of Clinical Nutrition and Metabolism* 4 (2009) e223–e225; <http://www.elsevier.com/locate/clnu>

### Annex 10. 3: Daily dosages of substrates and characteristics of some systems for parenteral nutrition

Condition	Nitrogen	Glucose,	Fat,	Energy	Na	K	Ca	Mg	P	Trace elements	Vitamins	Volume, MI
	g	Kcal	g	kcal	mmol	mmol	mmol	mmol	mmol			
Peripheral	8–10	200–250	50–70	1300–1700	80	50	5	8	10–12	Basal	B1	2500–3000
Standard	10–14	250–400	50–100	1500–2200	100	60–80	5	8	12–16	Basal	Basal + B1	2250–3000
Moderate stress	12–16	250–400	50–100	1500–2200	100–120	75–100	5	10	10–20	Basal	Basal + B1	2500–3000
Severe stress	12–18	250–350	50–100	1500–2200	100–120	80–100	6	10	10–20	Basal, Zn, Se	Basal+ B1	2500–3500
Renal failure	6–8	250–400	50–70	1500–2200	individualized	individualized	6	individualized	individualized	individualized	Basal+B1	individualized
Liver failure	4–8	200–350	25–60	1200–2000	80	40–60	6	ind.	10–16	Basal+ Se, Zn	B1	2000–3000
Sepsis	10–16	200–400	50–70	1300–2200	100	60–100	5	6–8	10–20	Basal+ Zn, Se	Basal+ B1	2500–3000
Severe malnutrition	8–12	150–400	50–80	1200–2400	50–70	80–100	6	10–16	20–40	Basal+ Zn, Se, Cu	Basal +B1	2000–2500
Cardiac failure	10–12	150–400	50–70	1200–2200	50–70	80–100	6	10–12	15–25	Basal +Zn, Se	Basal +B1	2000–2250
Diabetes	10–14	200–350	50–70	1300–2200	100	80	6	8–10	15–40	Basal	B1	2500–3000
Fat intolerance	10–14	300–450	0–20	1500–1600	100	80	6	8–10	10–20	Basal	Basal +B1	2500–3000
Short bowel	7–14	200–400	20–100	1000–2400	50–250	50	9	10	10	Basal+ Zn, Cu	Basal + B1	1500–2500

(Source: M. Pertkiewicz et al. / e-SPEN, the European e-Journal of Clinical Nutrition and Metabolism 4 (2009) e161–e163; <http://intl.elsevierhealth.com/journals/espen>)

## Annex 10.4. Special Considerations for Nutrition Support for Patients with Medical Comorbid Conditions

Ailment	Prescription	Caution
<b>Diabetes</b>	<ul style="list-style-type: none"> <li>• Maintain glucose levels between 100 - 220 mg/dL</li> <li>• Give 30% of total kcal as fat</li> <li>• Gastric atony and delayed emptying is typical in type 1 diabetes</li> </ul>	<p>Neither relative nor absolute contraindication</p> <ul style="list-style-type: none"> <li>o Careful monitoring to avoid hyperglycaemia</li> <li>o Establish immediate metabolic needs</li> <li>o Insulin may be added to TP admixture &amp; combined with sliding-scale insulin administration</li> <li>o Glucose control to ensure blood glucose level of &gt; 100 mg/dl &lt; 220 mg/dL</li> </ul>
<b>Acute Renal Failure</b>	<ul style="list-style-type: none"> <li>• Fluid restriction (2 kcal/ml formula)</li> <li>• Pre-dialysis= low protein (0.6 - 0.8 g/kg/day)</li> <li>• Dialysis= standard protein (1 - 1.2 g/kg/day)</li> </ul> <p>Patients usually hypercatabolic, hypermetabolic, often with multiple organ subsystem failure</p>	<p>Nutrition substrates administered cautiously in accordance with metabolic needs:</p> <ul style="list-style-type: none"> <li>o No arbitrary limitation of proteins</li> <li>o Patient may not have reduced daily need for protein.</li> <li>o Underfeeding may worsen catabolism &amp; exacerbate the unstable condition</li> <li>o <b>MUST</b> be assessed carefully for signs of fluid overload, electrolyte imbalance, hyperkalaemia, hyper phosphataemia, hypermagnesaemia</li> <li>o Specialized amino acids formulations may be needed</li> </ul>

<p><b>Pulmonary Disease</b></p>	<ul style="list-style-type: none"> <li>• Calories: 20 - 30 kcal/kg</li> <li>• Give 30% - 50% of total kcal as fat</li> <li>• Protein: 1 - 2 g/kg</li> </ul>	<ul style="list-style-type: none"> <li>o Underfeeding may pose threats to pulmonary musculature</li> <li>o Overfeeding increases CO<sub>2</sub> production &amp; lead to hypercapnia &amp; further degradation of respiratory function</li> <li>o Provide adequate carbohydrate calories to meet energy needs using fats</li> </ul>
<p><b>Hepatic disease</b></p>	<ul style="list-style-type: none"> <li>• High calorie intake (35 kcal/kg/day)</li> <li>• If no encephalopathy, standard protein (1 - 1.2 g/kg/day)</li> <li>• If encephalopathy, protein restriction (0.6 g/kg/day)</li> <li>• Sodium restriction if ascites or edema</li> </ul>	<p>The condition poses profound consequences on nutritional status, exacerbated by illnesses, surgery &amp; stressors.</p> <ul style="list-style-type: none"> <li>o Lipid clearance is defective.</li> <li>o Fluid overload may require restriction of TPN volume.</li> <li>o Protein need in mild or no encephalopathy should be calculated at 1.5g/kg/day.</li> <li>o They can tolerate conventional amino acid formula, especially essential amino acids</li> <li>o In state of severe encephalopathy, modified amino acid formula containing high % of BCAAs</li> </ul>
<p><b>Cardiac disease</b></p>	<ul style="list-style-type: none"> <li>• Avoid overfeeding</li> <li>• Fluid restriction (2 kcal/ml formula)</li> </ul>	<ul style="list-style-type: none"> <li>o Long standing cardiac disease predispose to wasting (Cardiac cachexia)</li> </ul>

Source: Gomes F, et al., ESPEN guidelines on nutritional support for polymorbid internal medicine patients, Clinical Nutrition (2017), <http://dx.doi.org/10.1016/j.clnu.2017.06.025>

## Annex 10.5: Protocol for laboratory monitoring of nutrition support

Parameter	Frequency	Rationale	Interpretation
<b>Sodium, potassium, urea, creatinine</b>	Baseline Daily until stable Then 1 or 2 times a week	Assessment of renal function, fluid status, and Na and K status	Interpret with knowledge of fluid balance and medication  Urinary sodium may be helpful in complex cases with gastrointestinal fluid loss
<b>Glucose</b>	Baseline 1 or 2 times a day (or more if needed) until stable (Then weekly)	Glucose intolerance is common	Good glycaemic control is necessary
<b>Magnesium, phosphate</b>	Baseline, Daily if risk of refeeding syndrome  Three times a week until stable (Then weekly)	Depletion is common and under recognized	Low concentrations indicate poor status
<b>Calcium, albumin</b>	Baseline, Then weekly	Hypocalcaemia or hypercalcaemia may occur	Correct measured serum calcium concentration for albumin  Hypocalcaemia may be secondary to Mg deficiency  Low albumin reflects disease not protein status

<b>C-reactive protein</b>	Baseline  Then 2 or 3 times a week until stable	Assists interpretation of protein, trace element and vitamin results	To assess the presence of an acute phase reaction (APR). The trend of results is important
<b>Zinc, copper</b>	Baseline,  then every 2–4 weeks, depending on results	Deficiency common, especially when increased losses	People most at risk when anabolic  APR causes Zn decrease and Cu increase
<b>Selenium<sup>a</sup></b>	Baseline if risk of depletion  Further testing dependent on baseline	Se deficiency likely in severe illness and sepsis, or long-term nutrition support	APR causes Se decrease  Long-term status better assessed by glutathione peroxidase
<b>Full blood count and MCV</b>	Baseline  1 - 2 times a week until stable (then weekly)	Anaemia due to iron or folate deficiency is common	Effects of sepsis may be important
<b>Iron, ferritin</b>	Baseline,  then every 3–6 months	Iron deficiency common in long-term parenteral nutrition	Iron status difficult if APR (Fe decrease, ferritin increase)
<b>Folate, B12</b>	Baseline,  then every 2–4 weeks	Iron deficiency is common	Serum folate/B12 sufficient, with full blood count
<b>Manganese<sup>b</sup></b>	Every 3–6 months if on home parenteral nutrition	Excess provision to be avoided, more likely if liver disease	Red blood cell or whole blood better measure of excess than plasma
<b>25-OH Vit D<sup>b</sup></b>	6 monthly if on long-term support	Low if housebound	Requires normal kidney function for effect

<b>Calcium, albumin</b>	Baseline, Then weekly	Hypocalcaemia or hypercalcaemia may occur	Correct measured serum calcium concentration for albumin
<b>Bone densitometry<sup>b</sup></b>	On starting home parenteral nutrition (then every 2 years)	Metabolic bone disease diagnosis	Together with lab tests for metabolic bone disease

<sup>a</sup> These tests are needed primarily for people having parenteral nutrition in the community.

<sup>b</sup> These tests are rarely needed for people having enteral tube feeding (in hospital or in the community), unless there is cause for concern.

Source: Alan Shenkin, Biochemical monitoring of nutrition support. *Ann Clin Biochem* 2006; 43: 269–272. <https://doi.org/10.1258%2F000456306777695609>



## **Annex 11: Guidance on Malaria prevention, diagnostic and treatment activities**

Malaria remains the leading cause of morbidity and mortality in Uganda and negatively impacts the health and productivity of the population. 13.4 million cases of Malaria were confirmed in 2019 alone of which 4000 Ugandans died.

Malaria and COVID 19 have some similarities. The early symptoms of COVID-19, including fever, myalgia, and fatigue might be confused with malaria and other febrile infections. This can lead to challenges in early clinical diagnosis and management. There is need to consider the preventive measures against not only the COVID 19 but also likely impact on existing malaria control efforts.

**Main Objective:** To prevent malaria infection and ensure access to care and treatment for all people at risk as well as preventing Corona virus (COVID-19) transmission.

- All patients including pregnant women that present with a fever should be screened at the facility entry, appropriately triaged and comprehensively assessed (through history taking, physical exam and laboratory investigation) and treated based on findings, recommended WHO/MOH guidelines.
- Ensure malaria treatment is done according to the COVID guidelines like hand washing with soap, use of gloves, facial masks, social distancing (at least 1m between patient and health worker) Maintain the 3 Ts (Test, Treat and Track) both at health facilities and community level
- Preferably use RDT for malaria testing for outpatient because it takes a shorter time and reduces congestion in health facilities, but for isolation centers, microscopy is preferred
- \* For every COVID suspect, first rule out Malaria since the two diseases have similar symptomatology (fever, malaise) Health facilities will continue to support VHTs with necessary medicines and supplies in a safe way in respect to social distancing

- Redistribution of commodities will continue to take place in respect with COVID guidelines. For severe Malaria at community, Rectal Artesunate should be inserted with gloves as usual, and referred immediately to Health facility.
- Malaria in Pregnancy control interventions (IPTp, ITN for prevention plus diagnosis and treatment) are key in reducing Maternal, new born, infant mortality and morbidity and should continuously be provided to all targeted persons in respect to COVID-19 guidelines.
- Private sector alongside public sector is critical in ensuring delivery of malaria case management in the COVID-19 era Drug shops, pharmacies and clinics are encouraged to screen all cases reporting with fever for testing, reporting and management.
- iCCM has a vital role to play in decongesting facilities during the pandemic, facilities and VHTs continue to work hand in hand "remotely" in keeping OPDs safe and running smoothly.
- Temporary suspension of activities that require mass gatherings (that require more than 10 people), however mentorships and support supervision will continue to be done virtually through E-platforms or over phone to ensure quality of care.
- Health facilities will continue to support VHTs with necessary medicines and supplies in a safe way in respect to social distancing.
- Health facilities should use channel of VHT parish coordinators to enable dissemination of health messages to fellow VHTs on COVID 19 prevention within the communities and replenishment of medicines and supplies and preventive gears

## Community (iCCM)

CHWs/VHTs are encouraged to follow the ICCM guidelines to assess to possibility of malaria, pneumonia, diarrhea or exposure to TB, HIV and malnutrition.

**Temporary suspension** of classroom trainings, routine home visits, VHT quarterly review meetings community outreaches and dialogues that require mass gatherings.

Malaria

Test and treat for Malaria at the community will continue in respect with the COVID guidelines.

If VHT finds a fever that tests positive for malaria, VHT should treat malaria and patient isolates at home until symptoms abate. If fever does not resolve from ACT, VHT should instruct patient to go to the facility within 3 days after management for malaria or pneumonia (and/or sample collection hub) as Covid-19 suspect.

**NO touch iCCM will be instituted if the threshold of COVID cases goes beyond the required** as per NTF guidelines, CHWs will then therefore classify suspected malaria cases only on a history of fever, and provide appropriate antimalarial treatment with artemisinin combination therapy (ACTs), i.e. “presumptive” treatment of malaria. Suspect malaria

cases will be treated empirically with full dose ACTs and clinical response to ACT expected within 48hrs. No response to ACT treatment (absence of fever clearance within 48hrs) virtually excludes malaria as a cause of fever and strengthens the likelihood of other febrile illnesses, including COVID 19. Therefore, active follow-up of fever cases will be required, and if symptoms have not resolved by 48 hours then referral to the nearest health facility for further investigation will be required.

The VHT will take contacts of clients for follow up and easy identification in case of an identified suspect.

For a child with a danger sign, The CHW should continue to use appropriate measures such as gloves to insert rectal Artesunate or ask the care giver to insert the RAS for a child with fever and a danger sign and refer the child to the health facility for further assessment.

VHTs are advised to see the children where possible outside rather than inside the house and encourage hand washing with soap before patient is seen, use of gloves and masks or any cloth mask improvised.

PPE will be provided to the CHWs/VHTs and they will be trained on how to use the PPE as well their safe disposal.

Targeted support supervision and mentorship will be conducted virtually on e-platforms or by phone calls to enhance quality of care.

## **Annex 12. Guidelines on Providing Mental Health And Psychosocial During Covid-19**

Uganda registered her first case of COVID-19 on March 21st, 2020; and since then the cases of COVID-19 have continued to slowly increase. The government has put in place strict measures to contain the COVID-19 outbreak at the population level. However, the unprecedented measures undertaken to break the chain of transmission are causing public panic and unrest and generating psychological stress in the population.

Adequate provision of psychological support and access to services contributes to a sense of normalcy, foster the healing process and enhances resilience of the affected populations. This therefore means that the population should be supported to manage the stress, to prevent the negative psychological outcomes including anxiety, depression, panic attacks, and sleep disturbances.

The mental health professionals have put down some guidance and messages for the different sub-populations to support their mental and psychosocial well-being during this COVID-19 outbreak.

### **HEALTH CARE WORKERS**

1. Feeling pressured is a likely experience during management of epidemics and is not a reflection that you cannot do your job or that you are weak. Some optimum level of stress is necessary to maintain vigilance and for maximum functioning.
2. Understand the sources of stress during this time including risk of contracting the disease and contaminating others and the strict bio security measures to be taken; conflicting personal and professional demands and stigma.
3. Prepare yourself through training or widely reading about the basic specific details about COVID-19 and the available Uganda MoH protocols and guidelines for screening, PPE, quarantine, isolation and case management.
4. Manage your mental health and psychosocial wellbeing during this time as well as your physical health.

5. Be honest with yourself and sure you are ready to be a responder.  
This is important because it helps you reduce on the fear and anxiety.
6. Take care of yourself. Use helpful coping strategies such as ensuring sufficient rest and respite during work or between shifts, eat sufficient and healthy food, and engage in physical activity.
7. Avoid using tobacco, alcohol or other drugs as a coping strategy. In the long term, these can worsen your mental and physical wellbeing. Use appropriate and helpful strategies that have worked for you in the past to manage times of stress.
8. Staying connected with your loved ones, with family and friends through digital methods and explain to them if possible about COVID-19 so as to reduce on the stigma.
9. Turn to your colleagues, your manager or other trusted persons for social support but be mindful that your colleagues may also turn to you for help in case they are having problems.
10. Use understandable ways to share messages with people with intellectual, cognitive and psychosocial disabilities.
11. Know how to provide support to people who are affected with COVID-19 and know how to link them with available resources.
12. At the end of the pandemic, follow up with a mental health professional if you experience problems with; sleeping, eating and getting integrated back into your family, community and workplace.

## **HEALTH FACILITY MANAGERS OR TEAM LEADERS**

1. Keeping all staff protected from chronic stress and poor mental health during this response means that they will have a better capacity to fulfill their roles. Be sure to keep in mind that the current situation will not go away overnight and you should focus on longer term occupational capacity rather than repeated short-term crisis responses.
2. Ensure good quality communication and accurate information updates are provided to all staff. Use different forms of communication other than written information.
3. Rotate workers from higher-stress to lower-stress functions. Partner inexperienced workers with their more experienced colleagues.
4. Create and facilitate the buddy system which helps to provide support, reduce stress and reinforce safety procedures.

5. Ensure there is time for colleagues to provide social support to each other.
6. Ensure that outreach personnel enter the community in pairs.
7. Initiate, encourage and monitor work breaks.
8. Implement flexible schedules for workers who are directly impacted or have a family member impacted by a stressful event.
9. Facilitate access to, and ensure that both workers and managers are aware of where they can access mental health and psychosocial support services.
10. Orient responders, including nurses, ambulance drivers, volunteers, case identifiers, teachers and community leaders and workers in quarantine sites, on how to provide basic emotional and practical support to affected people using psychological first aid
11. Manage urgent mental health and neurological complaints (e.g. delirium, psychosis, severe anxiety or depression) within emergency or general health care facilities.
12. Deploy appropriate trained and qualified staff and ensure that general health care staff can provide basic mental health and psychosocial support.
13. Ensure availability of essential, basic psychotropic medications at all levels of health care. People living with long-term mental health conditions or epileptic seizures will need uninterrupted access to their medication, and sudden discontinuation should be avoided.

## **CARE PROVIDERS FOR CHILDREN**

1. As a Care provider for children, learn to manage your anxiety and tolerate uncertainties by being mindful of the present. This will help you stay grounded and calm in the present and not the past or the future.
2. Help children find positive ways to express feelings such as fear and sadness. Every child has their own way to express emotions including: seeking reassurance, tantrums and meltdowns, trouble sleeping and complaints of headaches and stomachaches. Sometimes engaging in a creative activity, such as playing, and drawing can facilitate this process. Children feel relieved if they can express and communicate their feelings in a safe and supportive environment.
3. Keep children close to their parents and family, if considered safe for the child, and avoid separating children and their caregivers as much as possible.
4. If a child needs to be separated from their primary caregiver, ensure that appropriate alternative care is provided and that a social worker, or equivalent, will regularly follow up on the child.
5. During periods of separation, regular contact with parents and caregivers is maintained, such as twice-daily scheduled phone or video calls or other age-appropriate communication (e.g., social media depending on the age of the child).
6. Maintain familiar routines in daily life as much as possible, or create new routines, especially if children must stay at home.
7. Engage children into age appropriate activities, including activities for their learning. Encourage children to play and socialize with others, or within the family when advised to restrict social contact.
8. Avoid giving too much reassurance because this is not sustainable and it makes anxiety worse when caregivers are not able to provide reassurance. Instead reinforce and remind them of the precautions they are taking to stay safe e.g frequent hand washing and physical distancing. Support them to stay in the moment by practicing mindfulness
9. Discuss COVID-19 with children using honest and age- appropriate ways. Address their concerns, to ease anxiety. Children will observe adults' behaviors and emotions for cues on how to manage their own emotions during difficult times.





## **OLDER ADULTS, AND PEOPLE WITH UNDERLYING HEALTH CONDITIONS**

1. Older adults, especially in isolation and those with cognitive decline/dementia may become more anxious, angry, stressed, agitated, and withdrawn during the outbreak/while in quarantine.
2. Health professionals and care takers should provide practical and emotional support through sharing simple facts about what is going on and giving clear information about how to reduce risk of infection that older people with/without memory disturbances can understand.
3. Instructions need to be communicated in a clear, concise, respectful and patient ways. Repeat the information whenever necessary.
4. Engage their family and other support networks in providing information and helping them practice prevention measures (e.g. handwashing etc.)
5. If you have an underlying health condition, make sure to have access to any medications that you are currently using. Activate your social contacts to provide you with assistance, if needed.
6. Be prepared and know in advance where and how to get practical help if needed, like calling a friend/ family member, having access to near-by food stores and requesting medical care. Make sure you have up to 2 weeks of all your regular medicines that you may require.
7. Learn simple daily physical exercises to perform at home, in quarantine or isolation to maintain mobility and reduce boredom.
8. Keep regular routines and schedules as much as possible or help create new ones in a new environment, including regular exercising, cleaning, daily chores, singing, reading, maintaining the compound etc. Keep regular contact with loved ones (e.g. via phone or other accesses).

## **PEOPLE IN ISOLATION**

1. Stay connected with family and friends and maintain your social networks via e-mail, social media, video conference, telephone, etc
2. Keep your personal daily routines or where possible create new routines.
3. During times of stress, pay attention to your own needs and feelings.
4. Engage in healthy activities that you enjoy and find relaxing.
5. Exercise regularly in appropriate ways that suit your age and situation
6. Keep regular sleep routines and eat healthy food.
7. Keep things in perspective it may not be possible to be provided with everything as you want it.
8. Seek information updates and practical guidance from trusted health professionals and WHO website and avoid listening to or following rumors that make you feel uncomfortable.

<b>PATIENT DETAILS</b>	
Name: _____	Age: _____ Sex: _____
Contact (phone number): _____	
Address: Village: _____ Parish: _____	Sub-county: _____
District: _____	
<b>PATIENT ORIGIN: Tick Applicable Option (If Health facility, give details)</b>	
Health Facility	Residence:
Name of facility:	Other (give details)
Referring Health worker (Designation):	
Time of arrival to pick patient:	
<b>PATIENT CARE:</b>	
Patient counselled (Yes or No)	
Patient residence decontaminated (Yes or No)	
Initial Clinical evaluation	BP: _____ HR: _____ RR: _____ O <sub>2</sub> saturation: _____ GCS: _____
Treatment given during transport	





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## EMERGENCY CARE OF COVID-19 IN ADULTS IN LOW RESOURCE SETTINGS

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## **ANNEX 13.2: AMBULANCE DECONTAMINATION PROTOCOL**

### **Before Decontamination and Disinfection:**

Following patient transfer, the back doors of the ambulance should be left open so that sufficient air exchange may occur. Appropriate supplies must be available.

1. Yellow caution tape, string or alternative system for marking off decontamination area
2. PPE
3. Leak proof biohazard bags
4. Garbage bags
5. Spray bottles
6. Disposable rags
7. Alcohol based hand sanitizer
8. Absorbent towels
9. Bleach or alcohol-based cleaning solution or disinfectant wipes



## **Annex 14: COVID-19 TREATMENT UNIT DISCHARGE AND FOLLOW UP SOP**

### **Background**

- The COVID-19 treatment guidelines lay out the conditions for discharge, including at least two negative RT PCR tests more than 24hrs apart, and clinical stability.
- In addition to confirming clinical and laboratory eligibility for discharge, psychosocial assessment and counseling should be done to help prepare both the patient and their family for discharge and reintegration into the community.
- Completion of the Case Management Form and Discharge Certificate are mandatory elements of the discharge process for COVID-19 patients.
- Appropriate environmental cleaning following patient discharge is paramount to eliminate risk of transmission COVID-19 and other pathogens via fomites to healthcare workers and the community given that SARS-CoV2 may persist in the environment up to 72 hours post exposure.
- Follow-up of the patient at 48h, 2 weeks, and 6 weeks after discharge to assess for any new symptoms or psychosocial distress is recommended.

### **Objectives**

1. To guide HCWs on the appropriate steps to undertake as part of the discharge procedure
2. To guide appropriate psychosocial assessment and preparation of the patient being discharged and their family
3. To outline the follow up procedure for the discharged patients.
4. To outline the documentation required for discharge and follow-up

## **Roles and responsibilities**

- The isolation unit team – doctors, clinical officers, nurses, psychosocial staff – are responsible for completing the discharge requirements
- The isolation unit in-charge ensures that all aspects of the SOP have been completed

## **Required documents**

- Medical Discharge Form
- Case Management Form – Modules 3 and 4
- Discharge Certificate
- Discharge IEC materials
- Prescription (where necessary)
- Medical or psychosocial referral (where necessary)

## **Procedure**

The SOP is organized into four sections: Preparing for discharge, time of discharge, follow-up and documentation and reporting of the follow -up outcomes as detailed below.

## **PREPARING FOR DISCHARGE**

### **Conduct psychosocial preparation**

- Inform patient that the session is intended to help prepare him/her for discharge
- Identify and address any fears or anxieties related to the pending tests and results
- Establish and discuss concerns the patient may have regarding rejoining his/her family or community
- Prepare the family and community to receive the patient (may work with risk communication)
- o Establish and discuss any concerns/fears that the family/community might have regarding discharge and address them accordingly
- If family/community environment is not conducive to patient return, liaise with Ministry of Gender, Labor, and Social Development and/or district probation office on alternative placement options.
- Give feedback to the clinical team including recommendations on the psychosocial fitness for discharge and disposition of patient

### ***Other preparatory activities***

- If patient needs to be repatriated, liaise with Ministry of Internal Affairs
- Assess patient for any physical/occupational/speech therapy rehabilitation needs
- The day prior to discharge, clean the patient's personal linen, clothing, and footwear by soaking in 0.05% chlorine for 30 min and laundered. Provide the patient with scrubs and sandals for this period.

## **DAY OF DISCHARGE**

### ***Conduct discharge counseling***

- Confirm that patient understands that they have met eligibility for discharge and can safely and fully reintegrate into the community.
- Remind the patient to practice standard COVID-19 precautions including hand hygiene, social distancing, and wearing a MoH-approved mask in public.

- Review dosing, indication, and side effects of any discharge medications. Remind the patient to report any adverse drug reactions immediately
- Caution the patient on self-prescription of both over the counter medicines and herbal remedies and the related consequences.
- Provide information for following up any co-morbid conditions, psychosocial needs, physical/occupational/speech therapy needs, or palliative care.
- Advise patient to return to a health care facility if they experience any new symptoms.
- Discuss preferred follow-up “check-in”: Call for Life automated phone call system vs home visit by VHT or para-social worker (especially if the client has no phone)
- If agree to Call for Life, assist patient to register using the toll-free number (To be determined )

### ***Complete discharge paperwork***

- Standard medical discharge form (as per routine hospital discharge protocol)
- COVID-19 Case Management Record (CMR) Form Module 3 – Discharge Module (refer to COVID-19 National Guidelines).
- Obtain agreement for: 1) participation in automated Call for Life follow-up service and 2) future potential contact for longer-term follow-up (patient may decline)
- Confirm contact information for patient and next of kin
- Send copies to: facility biostatistician for data entry and filing
- Discharge certificate
- Prescriptions (including for patient’s routine medications)
- Medical, physical/occupational/speech therapy, or psychosocial referrals

## ***Exiting the isolation unit***

- The patient should bathe and change into personal clothes that have been soaked in 0.05% chlorine and washed (as above), and then immediately be guided out of the isolation unit, either through the designated patient exit area or through the doffing lane, washing hands prior to exiting.
- o Patient's personal footwear should be put on outside the red zone/treatment area.
- o The scrubs and sandals should be retained and managed according to the unit linen management protocol
- The discharging health care worker should wipe down water-sensitive items that have been in the treatment area such as mobile phones, chargers, books, etc with a 70% alcohol solution and return to patient once they have exited the red zone/treatment area.

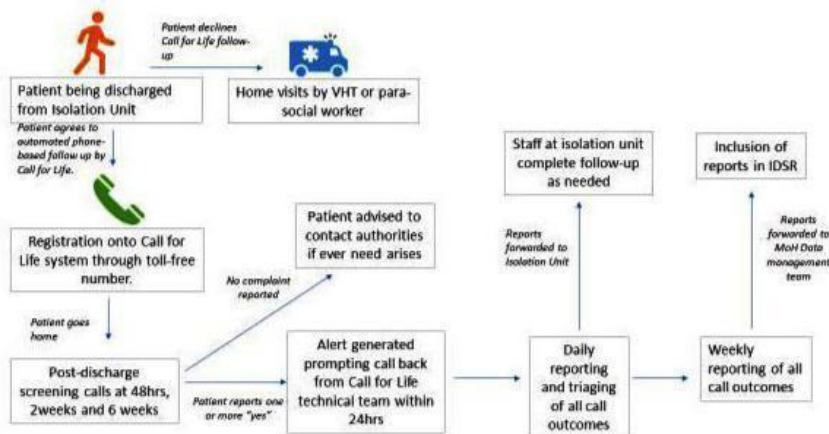
## ***Provide discharge package (outside of the red zone/treatment area)***

- Standard medical discharge form
- Signed discharge certificate
- Patient's personal belongings (cleaned as per above)
- o Clothing and linens should have been soaked on 0.05% chlorine and washed
- o Water-sensitive items such as mobile phones, chargers, books, etc, should have been cleaned with a 70% alcohol solution
- Medications and/or prescriptions (if needed)
- Referral letter(s) for any medical or psychosocial follow-up needs
- Coordinate with district task team for provision of food and hygiene supplies (if needed)
- Written follow-up instructions, including
  - o Reminders of home hygiene practices
  - o Follow-up plan based on disease severity, comorbidities, rehabilitation and psychosocial needs
  - o Phone number of facility and/or district task team point of contact for any questions or concerns
  - o Call for Life registration toll free number (to be determined), if not registered before discharge

## Disinfecting the patient area

- The area vacated by the patient and medical equipment used should be disinfected starting with low-touch surfaces, high-touch surfaces, floors (in that order), waste and linens removed, bed thoroughly cleaned and disinfected, and the room/bed prepared for a new admission following the facility environmental cleaning and disinfection procedures

## POST-DISCHARGE FOLLOW-UP



## Follow-up Process

- Patients who consented will receive a standard post-discharge follow-up “wellbeing check-in” call through Call for Life automatic voice response system (or a home visit by a VHT or para-social worker for those without phones).
  - o These check-ins will occur at 48 hours, 2 weeks and at 6 weeks post discharge.
  - o At each call or visit, a standard set of questions will be asked to screen for any clinical or psychosocial concerns.
- Patients who had severe COVID-19 disease, other comorbidities, rehabilitation and psychosocial needs will also be followed up as per the discharge plan

## Questions to be asked at follow-up

### **Clinical feedback**

- Have you had any NEW symptoms since discharge?  
Yes No

### **Psychosocial feedback:**

- Are you experiencing stigma or rejection by the community?  
Yes No
- Are you experiencing violence by the community?  
Yes No
- Are you experiencing family or household violence?  
Yes No

Screening for	Problems	Responses				Total score	Score $\geq 3$ ?
		Not at all	Several days	More than half the days	Nearly every day		
Anxiety	Feeling nervous, anxious, or on edge	0	1	2	3		<input type="checkbox"/> Yes <input type="checkbox"/> No
	Not being able to stop or control worrying	0	1	2	3		
Depression	Feeling down, depressed, or hopeless	0	1	2	3		<input type="checkbox"/> Yes <input type="checkbox"/> No
	Little interest or pleasure in doing things	0	1	2	3		

*\*Four-item patient health questionnaire for anxiety and depression (PHQ-4) validated tool*





- Is there any other problem you wish to discuss with a health care or psychosocial provider?

Yes No

### ***Actions based on response to follow-up screening questions***

- **If ALL answers are “no”**, patient informed to contact their nearest health facility, the district rapid response team, or the isolation center from which they were discharged if any issues arise
- **One or more “yes” responses** will be flagged as an alert and will trigger a rapid (within 24h) call back by a Call for Life technical resource person (or the VHT will address if a home visit is being done) o Household violence will be reported immediately to through the Child Help Line **(To be determined)**
  - o Call for Life will prioritize the needed follow-up and inform the isolation unit from which the patient was discharged.
  - o The staff at the isolation unit is responsible for ensuring that the follow-up is completed.
- Engage the RDC, LC, or police if patient is experiencing violence, stigma, or rejection by the community
- Link to appropriate clinical, psychosocial, or community services as per need

## **DOCUMENTATION AND REPORTING OF FOLLOW-UP OUTCOME:**

Documentation and reporting of data from call for life automated system:

- a) The follow up questions will be in built into the call for life automated system and will be administered to the patients on a scheduled frequency at 48hrs, then 2 weeks and 6 weeks post discharge
- b) Upon receipt of the automated calls, the patients will either respond with “Yes” or “No” answers to the administered questions c) The responses (“Yes” or “No”) will automatically be recorded into the call for life data base

- d) On the same day of the call, the technical resource persons at the call for life will run queries on the data base and summarize the data as detailed below
  - Number of patients due for follow up that received the automated phone call (disaggregated: 48hrs, 2wks and 6wks).
  - Number of patients who never had any symptoms at follow-up (number of “No” responses)
  - Number of patients who reported symptoms/problems (number of positive alerts with “Yes” responses)
- e) On the next day, the technical resource persons at “call for life” will document the types/categories of signs/symptoms or positive alerts that the patients are experiencing through making targeted in person phone calls
- f) Using a standard form, the alerts generated will be recorded as follows. See examples below

PT IDP	HONE NO.	ospital D	ISTRICTA	LERT TYPEA	lert date	ALERT DETAILS	JURATION OF SW	VISIT TO OTHER H/C	COMMENTS DURING THE CALL	ACTION TAKEN
SireethMMH-1231128	256782176655	RRHK	AGADI	violence from the community0	1/06/20201	6:11:16 community threatened to burn up the house if he didn't	2 week	NN	needs Urgent help	Alerted the Facility to trace case and inform police
MbaleRRH 7689123	256772820974M	bale RRH	INJAS	ymptom reported0	1/06/20201	8:02:07 Anxiety other medical condition	1 week	r	patient had fever treated in malaria in HF and getting better. Has a anxiety over possible COVID recurrence	Re assured and linked to psychiatric services through HF
MbaleRRH 7689199	256779254308M	bale RRH	Mbale	violence from the community1	2/07/20202	0:09:06 anymore1	month	Nf	feels like livin the area	linked to psychosocial support at facility

- g) The technical resource persons at call for life will generate summaries of the experiences as follows
  - oThe number or frequencies of the problems/alerts generated through the “in-person calls” and the actions
  - oThe number of alerts or issues that are related to COVID-19.
- h) Alert reports will be sent to designate points of contact at each CTU (by email and/or WhatsApp) each day by Call for Life.
- i) On a weekly basis, the call for life personnel will make GLOBAL summaries in (d) and (g) above and send them to the MOH for inclusion or reporting in the IDSR or any other relevant HMIS.

### ***Data from the home based follow up:***

- a) Using a standard paper form, the HCWs & Psycho-social teams will make home visits to the FEW discharged clients who did not consent to “the call for life” AND will administer the clinical and psycho-social follow-up questions at their home on a scheduled frequency at 48 hrs, then 2 weeks and 6 weeks post discharge
- b) During the home visit, the patients’ responses (“Yes” or “No”) to the follow up questions will be recorded on the standard paper form
- c) Upon return to the HF, the HCWs & Psycho-social teams will populate the follow up register that will be situated at the COVID-19 treatment center
- d) On a weekly basis, the HCWs & the PSS teams will make weekly summaries as detailed below
  - Number of patients due for home visit follow up that were visited (disaggregated: 48hrs, 2wks and 6wks).
  - Number of patients who never had any symptoms at home follow-up (number of “No” responses)
  - Number of patients who reported symptoms/problems (number of positive alerts with “Yes” responses)
  - The number or frequencies of the symptoms/problems/alerts identified during the home visits and the actions that are taken
  - The number of alerts or issues that are related to COVID-19 and the actions taken
- e) The summaries will be submitted to the HIS department for inclusion into the IDSR systems.

## **Annex 15. Occupational Health Guidance for Health Workers managing COVID 19 Patients**

General health and wellbeing of health workers in emergencies

### **Background:**

Maintaining the health and wellbeing of healthcare personnel is essential for both practical and ethical reasons. They must be healthy in order to function and should have the same right to health as everyone else. During the COVID-19 pandemic, placing individuals or communities under quarantine will place added time and practice loads on healthcare staff and expose them to additional psychological pressure.

### **Administration should therefore ensure:**

- 1) Pre deployment training and skills/competency assessment of health care staff
- 2) Healthcare staff and families have access to COVID-19 testing on the account of exposure
- 3) Healthcare staff have appropriate PPE (Please see section on PPE in section 3)
- 4) Healthcare staff adhere to infection control practices (Please see section on IPC section 3 )
- 5) Eight working hours per shift, especially in hospital
- 6) Train healthcare staff to look for stress that could lead to burn-out in themselves, colleagues and report.
- 7) Provide staff with psychosocial support, counselling
- 8) Organize regular briefings and de-briefings of staff
- 9) Explore optional ways of supporting healthcare personnel such as meals, accommodation and transport
- 10) Recruit and up-date recently qualified, unemployed and postgraduate trainee medical personnel
- 11) Provide on-the-job refresher training for all personnel
- 12) Ensure infected and ill healthcare personnel are well cared for.

- 13) Provide suitable accommodation for healthcare staff for the duration he/she is on duty in highly infectious environment e.g. COVID-19 area.

Management of the occupational health of emergency workers should be integrated into the overall emergency response, including the stages of preparedness, response and recovery and an Occupational Health Management System should be put in place through the Incident Command System (ICS).

The following measures should be implemented as part of the ICS health and safety management.

**a) Risk assessment and management**

- Risk assessments should cover all possible hazards and risks that COVID-19 response workers may encounter.
- Early planning should anticipate the likely response requirements and should establish necessary preventive measures.
- Specific risk management tasks or possible disasters should be identified and assigned to persons in order to make disaster control easier.
- Employees should take reasonable care of themselves and others and cooperate with their employer to control hazards/ risks as far as is reasonably practicable.

**b) Work organization**

- Limit exposure to risk by limiting the numbers of personnel to the minimum necessary and creation of “protective-action zones”.
- Job or task rotation may also reduce exposure to risks and overstrain

**c) Training:**

- Staff must be provided with both subject specific knowledge of COVID-19 and the OSH hazards they may encounter, the consequences of those risks, possible preventive measures and the proper selection, use, care and maintenance of PPE.
- Mental health and psychosocial support including Psychological First Aid
- Record keeping, documentation and reporting.

**d) Vaccination against relevant and possible exposures.**

**e) Maintenance and storage of personal protective equipment:**

The correct PPE must be selected according to guidelines, be available at the scene and workers must be familiar with it to be able to use it properly. A responsible person should be in charge.

**f) Use of ergonomic equipment**

- Ergonomic equipment (e.g., syringes with safety features) can reduce workers' exposure to risks and should be used wherever possible.

**g) Ergonomics of health worker back injury prevention**

The carrying and turning of patients may cause injury to the back of health care workers. As much as possible the stretchers, trolleys and beds in the health facilities and in ambulances should be maneuverable to reduce the need for health workers to bend excessively when handling patients. As such, the mechanical state of the moving elements of the stretchers, trolleys and beds should be regularly checked and serviced. Any faulty one equipment should be swiftly repaired or replaced.

As much as possible at least two health workers should be involved in lifting and turning patients, so as to reduce the load on the back of each of the health workers. The health workers should be trained and supervised on correct patient handling techniques that are protective of the back.

**h) Psychological preparedness**

There is need for an established psychosocial unit with qualified staff including experienced clinical psychologists in every hospital and any other COVID-19 response setting to help health workers cope with the emotional burdens of their jobs.

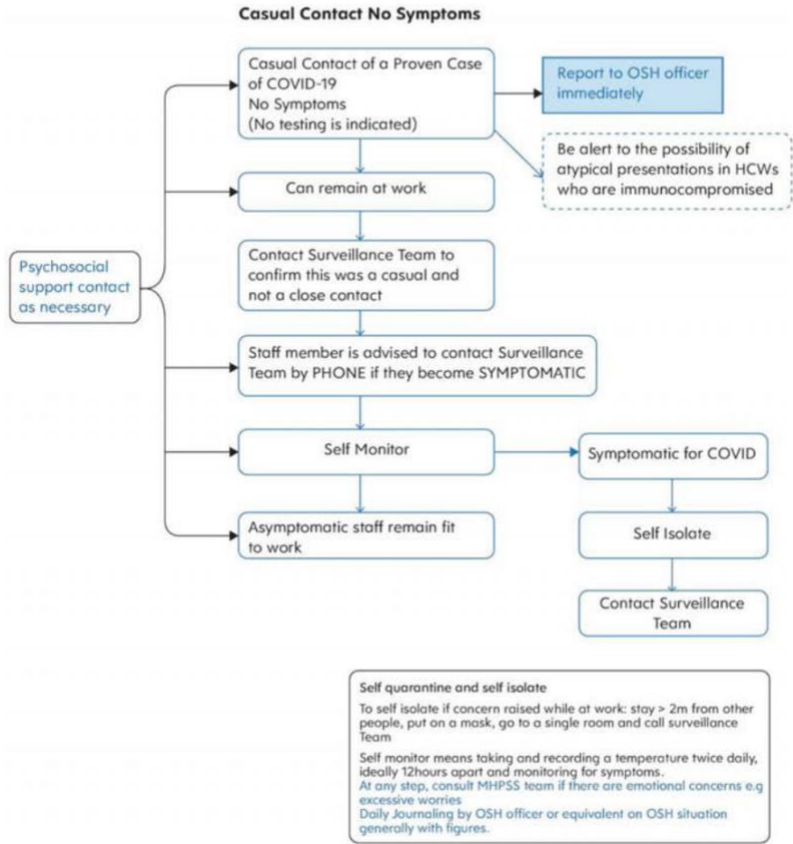
### OSH intervention levels and stages of response

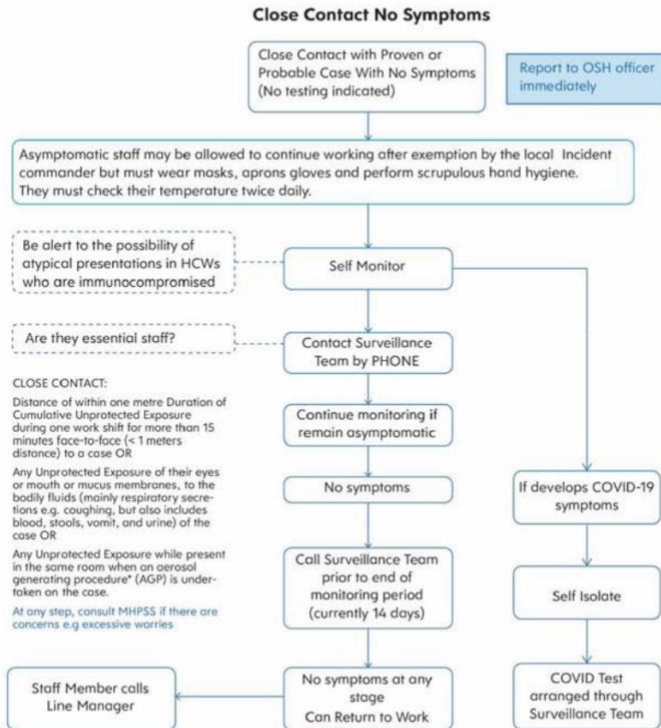


The diagrams below illustrate what should be done in case of contact with COVID -19 patient



## The diagrams below illustrate what should be done in case of contact with COVID -19 patient





### **Return to Work Algorithm**

Staff Member is advised to contact the surveillance Team again when they are SYMPTOM FREE

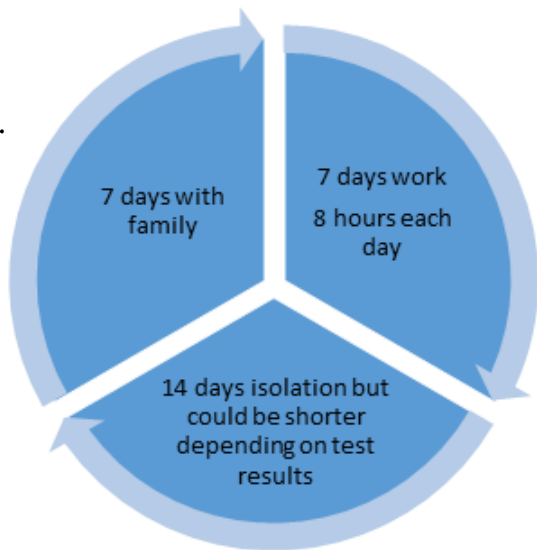
- If staff had a positive test they must be fever-free for 5 days AND it must be 14 days since symptom onset or diagnosis if they had no symptoms. Please contact the COVID-19 Case Management Team on day 10 onwards to update them on status.
- If COVID-19 was undetectable in their test or they had no test they need to have been symptom free for the previous 2 days before return to work
- Staff who did not have a positive test may seek an exemption by contacting the Surveillance Team but must be asymptomatic for 2 days before returning to work.

Staff will not be re-tested prior to return to work if they fulfil the above criteria.

Please note that anyone who was admitted to hospital generally has a more prolonged /serious infection and is considered a higher risk for transmission and continuing infectivity.

## Scheduling of work shifts

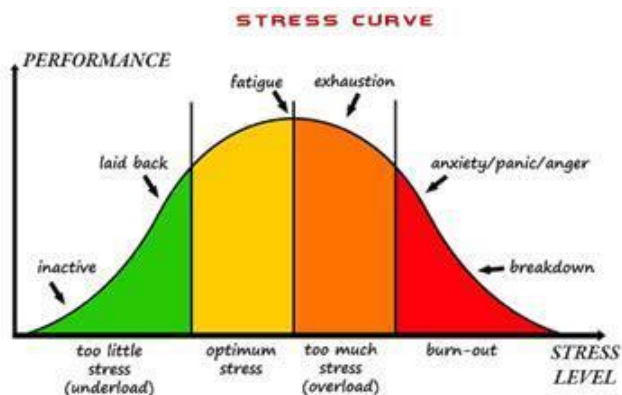
*The HW could use the 14 days in isolation  
To perform other duties as given by the supervisor*



## Mental Health and Psychosocial Support during COVID-19 Pandemic

### Background:

Health workers responding to COVID-19 pandemic will encounter many sources of stress. Such “wear and tear” may affect health workers both physically and emotionally creating negative feelings. Not all stress is problematic; some level of stress helps a person to keep safe by maintaining some vigilance to work well in challenging situations. The effects may be minimized before deployment. To get appropriate support, it is important to know the point at which one is moving away from the optimum stress levels to overload and finally burn out (see performance-stress graph). After the pandemic, assessments should also be done.



High stress and the problems associated with it are normal in difficult situations. It may be that the health worker does not take enough time to care for himself or herself. Other problems in life – such as challenges at home, lack of social supports, health problems or other uncertainties

– can make the work stress harder to deal with. Stress can be kept manageable making the health workers more effective in their roles and minimize mistakes.

## **Sources of stress related to during deployment include:**

- 1) Fear for one's own well-being, that of family members or co-workers who might contract disease.
- 2) Work-related pressures such as strict bio-security measures:
  - Physical strain of protective equipment
  - Physical isolation and adhering to a no touch policy
  - Constant awareness and vigilance required
  - Strict procedures to follow leaving out spontaneity
- 3) Physical exertion compounded by cumbersome equipment (e.g. PPE), often accompanied by heat stress, dehydration and exhaustion;
- 4) Lack of basic safety equipment for personal protection
- 5) Stigmatization of people working in high-risk areas which may lead to being shunned by family or community or even exposed to violence
- 6) Lack of social support or social networks;
- 7) Tension between established safety protocols and the desire to care for or support individuals  
(E.g. ensuring safe burial practices, isolation, and implementing no-touch policies);
- 8) Difficulty in maintaining self-care activities such as exercise, good eating habits and getting enough rest;

## **Following deployment, factors that may cause stress include;**

- 1) Memories related to the adverse events and human tragedy during the response.
- 2) Fear of long-term effects of exposure to COVID-19.
- 3) Difficulties in readjusting to life after deployment.

**People may react to stress as in the COVID-19 pandemic in a continuum.**

<b>Domains</b>	<b>Healthy</b>	<b>Concerns</b>	<b>Injured</b>	<b>Ill</b>
<b>Sleep</b>	Normal sleep	Trouble sleeping	Disturbed sleep	Unable to fall or stay asleep
<b>Appetite</b>	Normal	Food tastes like grass/glass	Loss of appetite	Complete loss of appetite
<b>Mood</b>	Normal mood fluctuations	Irritability, sadness	Anger, hopelessness  Persistent sadness	Easily enraged, depressed mood
<b>Anxiety levels</b>	Calm and takes things in stride	Nervous	Anxiety	Excessive anxiety/panic attacks
<b>Work performance</b>	Persistent performance	Procrastination	Decrease performance/ presenteeism	Absenteeism
<b>Social activity</b>	Socially active	decreased	withdrawal	Isolation
<b>Physical health</b>	Well	Tired/low energy/ muscle tensions/ headaches	Fatigue	Exhaustion
<b>Alcohol use</b>	NO/limited	Regular/controlled	Out of control	Addiction
<b>Intervention</b>	Nurture support, lifestyle, focus	Rest/exercise, coping strategies	Identify own risk distress/ seek help	Psychiatric consultation

## Measures to prevent workplace stress

In most cases, stress related to work will be manageable with good organizational and managerial support.

### a) Team-based practices

**Sharing up-to-date information with the workforce:** There should be a clear mechanism for the flow of information about the hazard and protective measures for the workers. Information should also be shared with the community and should be regularly updated. It is especially important to inform health-care workers promptly if their co-workers become ill, ask questions, express concerns and make suggestions. .

**A venue to express concerns and ask questions:** It is especially important that workers have a place where they can ask questions and express concerns about the health risks to themselves and colleagues. Care should be taken to ensure confidentiality of people's health status. For instance, a manager may convey to a team that a colleague is unwell but is not in a critical condition without divulging the details of the health problems.

**Multidisciplinary team sessions:** The multidisciplinary team of direct caregivers and other staff should meet frequently to exchange concerns. This could be a meeting of the supervisors of each of these groups. The purpose of these meetings is to identify concerns, including about the well-being of staff, and to work together on strategies to solve problems.

**Checklist and buddy system:** Health workers should assess and understand their own strengths, weaknesses and limitations, including recognizing signs of stress and burnout in them and in others. General measures to assist individual coping mechanisms should be explained. They should have an opportunity to register their concerns and complaints confidentially, yet in a manner that will maximize the likelihood that these concerns are addressed. The buddy system is a useful way in which psychological support can be provided and is a good way to monitor stress and burnout.



Individual practices and regulated rest periods: Managers need to be familiar with, and convey to staff, health and safety practices and procedures, including the need for sufficient rest and breaks during the workday.

**Basic needs:** Managers need to ensure that there are opportunities to promote physical health, including exercise, and the workers can maintain healthy eating habits.

**Psychological support:** A venue should be provided where health workers can share fears and worries confidentially. A psychologist/Psychiatrist should be available to go to the worksite at particularly stressful times, such as when a member of the team dies.

**Role-modelling by organization and field managers:** Managers should be role models for staff under their supervision and should conduct themselves in ways that show how to mitigate stress. The leadership must ensure that the basic needs of staff are met and protective equipment provided, that the workforce is valued, and that its efforts are appreciated.

There should be ongoing support for staff adversely affected by exposure to stress, trauma or disease during their deployment. In some cases, health workers may present with symptoms of a mental health condition which may be related to the high-stress environment. Assessment of Such a problem by a Psychiatrist should be considered if the person asks for an assessment or his/her functioning and the ability to undertake a number of tasks is impaired or above symptoms become persistent beyond concerns.

## **Measures of managing stress during stages of the COVID-19 response**

### **Minimizing stress before deployment**

- 1) Become familiar with the overall COVID-19 response system and the roles and responsibilities of key teams including your own,
- 2) Establish clear lines of authority and responsibility to minimize stress by eliminating confusion about who reports to whom.

- 3) Provide regular training on stress management techniques.
- 4) Provide ongoing training to ensure that workers are thoroughly familiar with safety procedures and policies.
- 5) Develop guidelines to help workers prepare for deployment.
- 6) Maintain an updated list of family members' contact information for each employee.

## **Minimizing stress after the COVID-19 Pandemic**

The aim of psychological support is to prevent and manage stress and its impacts on physical, mental and social health throughout deployment and afterwards.

- Clearly define individual roles and re-evaluate them if the situation changes.
- At each shift change provide briefings on the current status of the work environment, safety procedures and required safety equipment.
- Partner inexperienced workers with experienced veterans.
- The buddy system is an effective method to provide support, monitor stress and reinforce safety procedures.
- The system can also help in provision of PFA to the person who experiences stress at an initial stage.
- Rotate workers from high-stress to lower-stress functions.
- Initiate, encourage and monitor work breaks, especially when casualties are involved.
- During lengthy events, implement longer breaks and days off, and curtail weekend work as soon as possible.
- Establish respite areas that visually separate workers from the scene and the public.
- At longer operations, establish an area where responders can shower, eat, change
- Clothes and sleep.
- Implement flexible schedules for workers who are directly impacted by an event.

## Post-intervention psychological help:

Social support both during and after deployment with opportunities to talk and have calm discussions with colleagues or a psychologist helps workers to cope with psychological strain. However, in the case of serious or long-lasting symptoms of mental health problems such as post-traumatic stress disorder, professional help may be necessary.

Allow time off for workers who have experienced personal trauma or loss. Arrange to bring these persons back into the organization by initially assigning them to less demanding jobs.

Develop protocols to provide workers with stigma-free counselling so that they can address the emotional aspects of their experience. Organize exit interviews to help workers put their experiences in perspective and validate what they have seen, done, thought and felt.

**Post-traumatic stress disorder:** Some Health workers may develop a wide range of psychological reactions or symptoms after experiencing extreme stress during COVID-19. For most people, these symptoms are transient. When a specific, characteristic set of symptoms (re-experiencing, avoidance and heightened sense of current threat) persists for more than a month after a potentially traumatic event, the person may have developed post-traumatic stress disorder (PTSD).

Assessment by a Psychiatrist may be required to identify the PTSD symptoms of re-experiencing events, avoidance and difficulty in falling asleep or staying asleep.

**Burnout:** Burnout is a term commonly used to refer to long-term exhaustion and diminished interest in work as a result of long-term stress and work overload. Some persons – such as those with a history of mental health problems, ongoing critical personal stressors (e.g. personal illness, illness of a family member, history of family violence, risk of poverty or loss of work) or with reduced social support networks, or persons exposed to extreme stressors or potentially traumatic events – may be at increased risk of impairing levels of stress or mental health problems post-deployment.

**Manage stigma:** Because the public is aware that health workers are at higher risk of contracting disease such as COVID-19 through occupational

exposure, health workers are often stigmatized and socially isolated. Even families of health workers may be stigmatized and socially avoided by friends and acquaintances. As such, comprehensive public education campaigns should address the social stigma and exclusion of health workers resulting from the public's potentially excessive fear of contagion or contamination, as well as other commonly held beliefs. Campaigns should encourage the public to value the role of frontline health workers fighting the epidemic. Such campaigns can be organized as part of the social mobilization packages in outbreaks.

**Long-term care and health surveillance for exposed workers** Conduct regular health surveillance taking into consideration history of exposures to COVID 19. Regular health monitoring through mandatory annual medical examinations are helpful to:

- Assess physical fitness
- Detect diseases and injuries caused by hazard exposure.
- Offer treatment and rehabilitation at an early stage to protect workers from more severe effects and improve prospects of recovery.





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