



وقاية

هيئة الصحة العامة  
PUBLIC HEALTH AUTHORITY

# Coronavirus Disease

# COVID-19 GUIDELINES

V 3.1

PUBLIC HEALTH AUTHORITY | [INFO@CDC.GOV.SA](mailto:INFO@CDC.GOV.SA)



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# VERSIONS UPDATE

## **Version 1.0**

- Was written and published on January 10<sup>th</sup>, 2020.

## **Version 1.2**

- Updated the case definition
- Updated household and community contacts management
- Added (Transportation of suspected or confirmed cases)
- Added (duration of isolation of suspected and confirmed cases)
- Added (General outlines of management)
- Added (Quarantine and Homestay Guide for Corona Virus Disease)
- Added (Managing Bodies of Deceased Covid-19 Patients)
- Updated the reporting form and the visual triage checklist form

## **Version 1.3**

- Updated the case definition.
- Updated the Infection and Prevention Control (IPC) section
- Updated the contact tracing
- Updated the reporting form, the visual triage checklist form and investigation form

## **Version 2.0**

- Updated standard precautions for all patients.
- Updated “implementation of empiric additional precautions.
- Updated transportation of suspected and confirmed cases.
- Updated sample to be collected.
- Updated notification and result reporting HESN portal.
- Updated household and community contacts management.
- Updated actions to be taken during quarantine.
- Updated criteria for recovery and discontinuing isolation.
- Updated follow up forms.
- Updated visual triage checklist.
- Updated flow chart for criteria for recovery and discontinuing isolation.

## **Version 3.0**

- Updated Covid-19 confirmed case definition.
- Added Covid-19 reinfection case definition.
- Added rapid antigen testing.
- Added vaccination against SARS-CoV-2.

## **Version 3.1**

- Switch to Antigen Rapid Tests (ARTs) or Rapid Diagnostic Rests (RDTs)
- Updated Covid-19 confirmed case definition.
- Updated Covid-19 reinfection case definition.

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## 1. SCOPE AND PURPOSE

This document is intended for health care practitioners, and those involved in planning and delivering services. Therefore, it emphasizes mainly severe cases. However, It provides guidance on different aspects of COVID-19 management. The guidelines provide recommendations about care in all settings for adults and children with suspected, clinically diagnosed, or laboratory-confirmed COVID-19.

## 2. INTRODUCTION

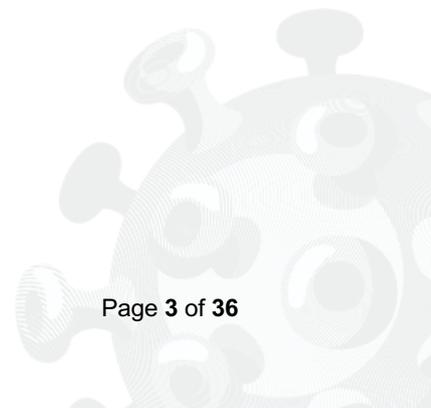
Coronaviruses (CoV) are a large family of RNA viruses that cause illnesses ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV). The new strain of coronavirus was identified in December 2019 in Wuhan city, Hubei province of China, and has been named by the International Committee on Taxonomy of Viruses (ICTV) as Severe Acute Respiratory Syndrome Corona Virus-2 (SARS-CoV-2). The ICTV have determined that SARS-CoV-2 is the same species as SARS-CoV but a different strain. The World Health Organization (WHO) has named the disease associated with SARS-CoV-2 infections as Corona “COVID-19”. Since the emergence of the 2019 novel coronavirus (2019- nCoV) infection in Wuhan, China, in December 2019, it has rapidly spread across China and more than 200 other countries. Most of the cases involved in the first cluster in December 2019 were linked to the large Wuhan Seafood Market.

The original source(s) of SARS-CoV-2 transmission remain unidentified. However, available genetic and epidemiological data suggest that SARS-CoV-2 is a zoonotic pathogen with possible spillover directly from wildlife or via intermediate animal hosts or their products. Sustained human-to-human transmission has been confirmed in China where numerous healthcare workers have been infected in clinical settings with overt clinical illness and fatalities. Most cases have been associated with fever and respiratory symptoms (coughing and shortness of breath), while other cases are mild or subclinical cases.

### 3. OBJECTIVES

Based on the best available scientific evidence, the objectives of this document are:

- Provide guidance on COVID-19 surveillance in healthcare and community settings.
- Enhance rapid detection of confirmed cases/clusters of COVID-19
- Determine clinical and epidemiological characteristics of the COVID-19 infection.
- Provide guidance on infection prevention and control (IPC) practices to be implemented when managing suspected and confirmed COVID-19 cases.
- Standardize the clinical management of COVID-19 patients.
- Provide guidance for rational use of resources including laboratory testing.
- Serve as a quality control/audit tool for COVID-19 surveillance and prevention program.



## 4. SURVEILLANCE CASE DEFINITIONS

### 4.1 Definition of COVID-19 Suspected Cases

Clinical Presentation	Criteria
1. Patient with acute respiratory illness (sudden onset of at least one of the following: fever <sup>1</sup> (measured or by history), cough, or shortness of breath)	<b>Not required</b>
2. Patient with sudden onset of at least one of the following: headache, sore throat, rhinorrhea, nausea, diarrhea or loss of smell or taste.  <b>AND</b>  in the 14 days prior to symptom onset, met at least one of the following criteria	<ul style="list-style-type: none"> <li>Had contact<sup>2</sup> with a confirmed COVID-19 case.</li> </ul> <p><b>OR</b></p> <ul style="list-style-type: none"> <li>Working in or attended a healthcare facility where patients with confirmed COVID-19 were admitted.</li> </ul>
3. Any admitted adult patient with unexplained severe acute respiratory infection (SARI), either Community Acquired Pneumonia (CAP) or Hospital Acquired Pneumonia (HAP).	<b>Not required</b>

### 4.2 Definition of COVID-19 Confirmed Cases

A person who meets suspected case definition AND tested positive by a Rapid Diagnostic test (RDT)\* or nucleic acid amplification test (PCR)\*\* .

\*RDT kit: authorized by SFDA and validated by Public Health Authority.

\*\*PCR: a certified clinical laboratory which is authorized by Public Health Authority.

<sup>1</sup> Fever is frequently reported (77–98%) but elderly and people with severe comorbidities may not mount fever initially.

<sup>2</sup> Contact is defined as anyone with any of the following exposures:

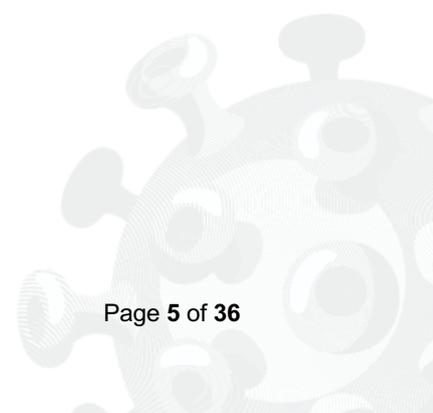
- Being within 2 meter of a confirmed COVID-19 case for >15 minutes.
- Direct physical contact with a confirmed COVID-19 case;
- Providing direct care for a confirmed COVID-19 patient without using proper personal protective equipment (PPE).
- Living in the household with a confirmed COVID-19 case.
- Sharing a room, meal, or other space with a confirmed COVID-19 case.
- Sitting within 2 rows (in any direction) of a confirmed COVID-19 case for >15 minutes and any crew in direct contact with the case in a public or shared transportation.

### 4.3 COVID-19 Reinfection:

Reinfection means an individual became infected again after he recovered. This can occur multiple times. Most of the cases are mild, but also the severe illness can occur. The new variants have the ability to escape an individual's existing immunity and cause an increased risk of reinfection. Moreover, as a history of prior infection increases and immunity from prior infection or vaccination decreases over time, the risk of reinfection will increase.

#### 4.3.1 Definition of COVID-19 Reinfection:

Time frame/symptoms	Symptomatic (Fever, worsening cough, SOB)	Surveillance definition
At any time	If isolated virus found by <b>gene sequencing</b> different from previous infection isolate.	Confirmed case of Reinfection
More than or equal to 90 days	<ul style="list-style-type: none"> <li>- a case that tests positive (RDT or PCR).</li> <li>- Manage it as confirmed case.</li> </ul>	Presumed Reinfection
Less than 90 days	<ul style="list-style-type: none"> <li>- Rule out the other possible causes.</li> <li>- If hospitalized (sever case), isolate till resolution of symptoms.</li> </ul>	
		<ul style="list-style-type: none"> <li>- If <b>mild</b> or not hospitalized, isolate till resolution of symptoms.</li> </ul>



## 5. INFECTION PREVENTION AND CONTROL (IPC)

The principles of infection prevention and control strategies associated with health care with suspected COVID-19 are:

- Early recognition and source control.
- Application of standard precautions for all patients.
- Implementation of empiric additional precautions.
- Management of exposure to COVID-19 in healthcare facilities
- Transportation of suspected and confirmed COVID-19 patients.
- Administrative controls.
- Environmental and engineering controls.
- Collection and handling of laboratory specimen.
- Environmental cleaning and disinfection after a COVID-19.
- Infection control in radiological examination for COVID-19.

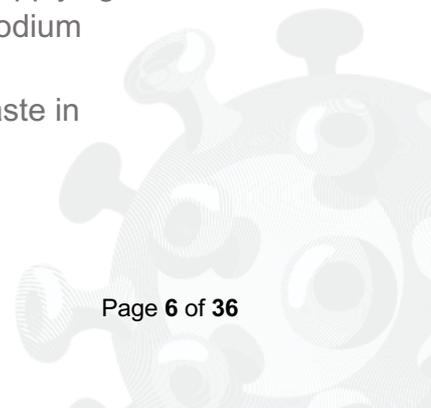
### 5.1 Early recognition and source control

- Encourage HCWs to have a high level of clinical suspicion.
- Activation of respiratory triage (see Appendix 5).
- Post signage reminding symptomatic patients to alert HCWs.
- Promotion of respiratory hygiene is an important preventative measure.
- Suspected COVID-19 patients should be placed in an area separate from other patients, and additional Infection Prevention and Control IPC (droplet and contact) precautions promptly implemented

### 5.2 Application of Standard Precautions for all patients

#### Standard Precautions include:

- Universal masking of all HCWs, patients and visitors in is highly recommended mainly in the high risk area such as ICU, ER , or isolation rooms ( please follow the updated instruction of MoH or PHA regarding Universal masking )
- Correct and consistent use of available PPE and appropriate hand hygiene.
- Perform hand hygiene after contact with respiratory secretions.
- PPE effectiveness depends on adequate and regular supplies and proper selection, use of PPE.
- Ensure that environmental cleaning and disinfection procedures are followed consistently and correctly. Thorough cleaning of environmental surfaces with water and detergent and applying commonly used hospital level disinfectants (such as sodium hypochlorite) is an effective and sufficient procedure.
- Manage laundry, food service utensils and medical waste in accordance with safe routine procedures.
- prevention of needle-stick or sharps injury



### Ensure the following respiratory hygiene measures:

- Universal masking of all HCWs, patients and visitors in is highly recommended mainly in the high risk area such as ICU, ER, or isolation room ( please follow the updated instruction of MoH or PHA regarding Universal masking )
- Cover nose and mouth during coughing or sneezing with tissue or flexed elbow for others.

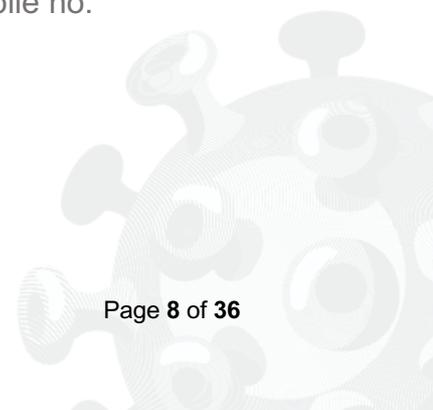
## 5.3 Implementation of empiric additional precautions

### 5.3.1 Contact and Droplet precautions for suspected COVID-19

In addition to Standard Precautions, all individuals, including family members, visitors and HCWs should apply Contact and Droplet precautions. Standard precautions should always be applied at all times.

- Place patients in adequately ventilated single rooms.
- It is preferred and strongly recommended not to cohort suspected COVID-19 patients because it carries a risk of transmission of infection between patients if one of them will be confirmed.
- In cases of severe shortage of single rooms, it is possible to cohort suspected COVID-19 patients together with strict adherence to the following standards:
  - a. One patient only should be admitted in each multibed room, then another patient will be put to bed far from the first patient's bed, and so on until the need to admit patients in all the beds of the room.
  - b. There must be a physical separation between the patients' beds (single use curtains – mobile or fixed partitions) and in the event of unavailability the distance between the bed and the other, distance should not be less than two meters.
  - c. It is strictly forbidden to implement aerosol-generating procedures (AGPs) such as respiratory suctioning and nasopharyngeal swabbing in these cohort rooms, the patient should be directed to a single room.
  - d. If the mobile HEPA filter devices are available, a device can be placed between each of two beds.
- Strict adherence by health care workers to infection control practices, hand hygiene between patients, new gloves between patients, wearing new set of personal protective equipment if the worn set become visibly soiled.
- Never share the patient care equipment between patients and it is preferable if available to use single use equipment.

- Patients should be asked to wear surgical mask throughout their hospitalization period, they are required not to move in the rooms between beds and corridors.
- Use a surgical mask with an eye/ facial protection (i.e., goggles or a face shield).
- Use gloves and a clean, non-sterile, long-sleeved fluid resistant isolation gown.
- Remove your PPE after caring for a patient in a proper way then dispose it, after that hand hygiene must be performed. New set of PPEs' is needed when care is given to a different patient.
- Use either single use disposable equipment 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 (e.g., ethyl alcohol 70%).
- Refrain from touching eyes, nose, or mouth with potentially contaminated hands.
- Avoid the movement and transport of patients out of the room or area unless medically necessary.
- Use designated portable X-ray equipment and/or other important diagnostic equipment. With cleaning between patients
- If transport is required:
  - Notify the receiving area of necessary precautions as soon as possible before the patient's arrival.
  - Use pre-determined transport routes (get help from security) to minimize exposures to staff and to others and apply surgical mask to patient.
  - Transferred patient should not wait in the waiting or recovery room.
  - Isolation signage should be hanged to the patient transportation equipment.
  - Ensure that HCWs who are transporting patients wear appropriate PPE as described in this section and perform hand hygiene.
  - Routinely clean and disinfect patient-contact surfaces with MOH approved disinfectant.
- Limit the number of HCWs, family members and visitors in contact with a patient with suspected COVID-19 infection.
- Maintain a record of all persons entering the patient's room including all staff and visitors including communication tools like mobile no.



### 5.3.2 Airborne precautions for aerosol-generating procedures for suspected COVID-19

Some aerosol generating procedures have been associated with increased risk of transmission of coronaviruses (SARS-CoV and MERS-CoV) such as nasopharyngeal swabbing, tracheal intubation, non-invasive ventilation, tracheotomy, cardiopulmonary resuscitation, manual ventilation before Intubation and bronchoscopy. HCWs performing aerosol-generating procedures should note the following:

- Use a fit tested particulate respirator.
- Always perform the seal-check when putting on a disposable particulate respirator.
- For nasopharyngeal swabbing, in case of non-availability of respirators the HCW can use surgical mask and face shield during the process.
- HCW that all available types of respirators are not fit to him should be avoided from aerosol-generating procedures or use PAPR (Powered Air-Purifying Respirator).
- Facial hair (beard) prevents proper respirator fit; either avoid aerosol-generating procedures or use PAPR.
- Use eye protection (i.e., goggles or a face shield).
- Clean, non-sterile, long-sleeved isolation gown and gloves are used, if gowns are not fluid resistant, use a waterproof apron for procedures with expected high fluid volumes that might penetrate the gown.
- Perform procedures in negative pressure rooms with at least 12 air changes per hour (ACH) and controlled direction of air flow when using mechanical ventilation.
- In case of unavailability of negative pressure room, nasopharyngeal swab could be taken in well-ventilated single room with portable HEPA filter.
- Limit the number of persons present in the room to the absolute minimum required for the patient's care and support.

### 5.3.3 Choosing appropriate respiratory protection

- Adhering to appropriate infection control measures is crucial in protecting HCWs from secondary infection.
- In certain situation such as caring for suspected or confirmed cases of COVID-19 in poor ventilated areas, higher respiratory protection (high efficacy respirators) is preferred if available.
- Selection of high efficacy respirators should be based on the fit-test.



## 5.4 Management of exposure to COVID-19 in healthcare facilities

### 5.4.1 Healthcare workers exposed to a COVID-19 case.

- Healthcare facilities should identify and trace all healthcare workers who had exposed to confirmed COVID-19 case and identify the risk category according to the "**Management of Healthcare Workers Exposed to COVID-19**" guide.

### 5.4.2 Patients exposed to a COVID-19 case.

- Patients can be exposed to COVID-19 patients prior to diagnosis or due to the failure of implementing recommended isolation precautions.
- The following are general guidelines, but management will depend on the infection control team risk assessment.
- Patients sharing the same room (any setting e.g. Ward with shared beds, open ICU, open emergency unit etc.) with a confirmed case of COVID-19 for at least 15 minutes:
  - Patients should be followed daily for symptoms for 14 days after exposure.
  - Testing (Nasopharyngeal swabs or deep respiratory sample if intubated) for COVID-19 is required (preferably 24 hours or more after the exposure).
  - If negative on initial testing, exposed patients should be retested with RT-PCR if they develop symptoms suggestive of COVID-19 within the follow up period.
  - Patients discharged during the follow up period must be reported to public health department to continue monitoring for symptoms.

## 5.5 Transportation of Suspected and Confirmed COVID-19 Patients outside the facility.

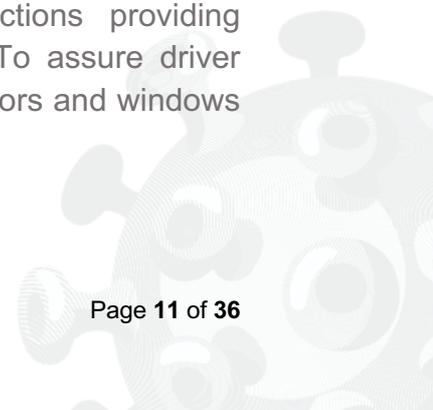
Patients, suspected or confirmed, will have to be moved safely between their homes to a health care facility as well as from health care facilities to dedicated COVID-19 management facilities. Acknowledging the challenges vehicular transportation of such patients pose including vehicle contamination and infection transmission, safe transfer is possible if the following recommendations are followed:

- a) There should be arrangement between the transporting facility and the receiving facility for transportation timing, personal and clinical information.
- b) The patient should be masked with surgical mask during transportation.

- c) The patient must be health educated about respiratory etiquette.
- d) The driver should wear surgical mask during transportation.
- e) Never transport suspected with confirmed COVID-19 in one vehicle.
- f) The used vehicle should be disinfected using MOH approved disinfectant (quaternary ammonium chloride wipes or spray / freshly prepared sodium hypochlorite solution 1000 ppm).

#### 5.5.1 Precautions during Patient transport by ambulance

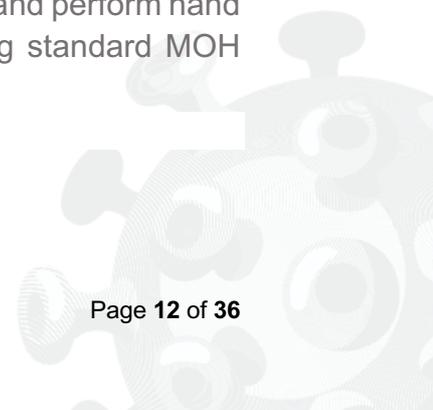
- Ambulance staff that handles the suspected/confirmed cases should be vaccinated against SARS-CoV-2.
- Where possible, ambulance staff should carry out initial assessment keeping a distance of at least 1.8m from the patient.
- For additional staff protection, the number of ambulance staff in the patient section of the ambulance should be restricted to the minimum required.
- Ambulance staff should notify the receiving healthcare facility that the patient has an exposure history and signs and symptoms suggestive of COVID-19 so that appropriate infection control precautions may be taken prior to patient arrival.
- It is best to limit contact with patient contact. patient should be asked to wear facemask (if possible) is placed on him/her, this facemask reduces the ability of the patient to contaminate the immediate working environment of the ambulance staff.
- Oxygen delivery with a non-rebreather face mask may be used to provide oxygen support during transport. If needed, positive-pressure ventilation should be performed using a resuscitation bag-valve mask, preferably one equipped to provide HEPA or equivalent filtration of expired air.
- To the extent possible, staff should ensure patients are isolated from other patients. This includes not allowing family members and other contacts to accompany suspected and confirmed SARS-CoV-2 infected patients in the ambulance. However, if they accompany the patient, they must wear a facemask.
- In patients with nasal cannula in place, the facemask should be fixed over the cannula. It is also possible to use an oxygen mask when indicated.
- Ambulances with isolated driver and patient sections providing independent ventilation to each area is preferred. To assure driver isolation from the patient section, keep connecting doors and windows closed before bringing the patient into the ambulance.



- During the journey, ensure that ventilation in both sections are in the non-recirculated mode in order to optimize changes thereby reducing the presence of potentially infectious particles in the ambulance. Ambulances with rear exhaust fans can use it to remove air from the vehicle at the back. The use of It is preferable to use an ambulance fitted a HEPA filter coupled ventilator when transporting patients on mechanical ventilators.
- To use the ventilation in ambulances lacking a physically isolated driver section, open the outside air vents in the driver section should be opened and the rear exhaust ventilation fans turned on to the highest setting. This generates a negative pressure gradient in the patient area.
- The ambulance staff should complete the handing over process at the destination health care facility following standard procedures.
- Additional recommendations for aerosol-generating procedures can be found in section 4.3.2 (Airborne precautions for aerosol-generating procedures for suspected COVID-19)

#### **5.5.2 Recommendations on Personal Protective Equipment (PPE) use.**

- Ambulance staff providing care for or accompanying suspected or confirmed COVID-19 patients in the patient section of the ambulance should adhere to standard and transmission-based precautions including required PPE.
- In situations where personnel driving ambulances used to transport patients are involved in moving patients onto stretchers or other forms of direct care, it is recommended that they strictly use recommended PPE (including N95 mask and goggles). They should appropriately doff and dispose their PPE and perform hand hygiene after completing patient care and prior to re-entering the isolated driver's section. This will prevent contamination of the cubicle.
- In situations where the ambulance/vehicle lacks an isolated driver's section, it is recommended that the driver use a respiratory/face mask during transport. However, he should remove his face shield or goggles, gown and gloves and perform hand hygiene.
- Ambulance staff should avoid touching their faces while working.
- Upon arrival at the health care facility and following patient hand over ambulance staff should doff and discard PPE and perform hand hygiene. They should discard used PPE following standard MOH procedures.



### 5.5.3 Recommendations relating to patients care Documentation.

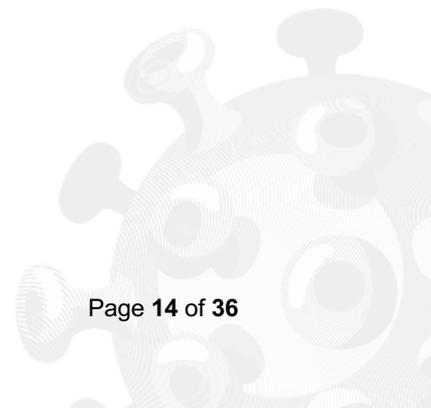
- Only after the ambulance staff have completed patient hand over, PPE doffing and hand hygiene should they proceed to patient care documentation.
- The documentation should include a listing of all the HCWs that provided care for the patient (direct or indirect) and the level of contact.

### 5.5.4 Recommendations regarding Cleaning Ambulances after Transporting of Suspected or Confirmed COVID-19 case

- Once the patient has been handed over at the designated receiving health care facility, the ambulance should be aerated with several cycles of air changes by leaving its rear doors open. This will get rid of possibly infected particles.
- After patient transfer, terminal cleaning should be done using manual method and /or hydrogen peroxide dry mist or vapor.
- Prior to cleaning the ambulance, staff should don disposable gowns and gloves. Eye/face protection PPE (goggles, face shields or facemasks) are recommended if the cleaning procedure will generate splashes or sprays.
- Environmental cleaning and disinfection should be carried out following procedures consistently and correctly. This includes assuring adequate ventilation when chemicals are used by keeping doors open.
- Routine cleaning and disinfection procedures (e.g., using cleaners and water to pre-clean surfaces prior to applying approved disinfectant to frequently touched surfaces or objects for appropriate contact times as indicated on the product's label) are appropriate for SARS-CoV-2 in healthcare settings, including those patient-care areas in which aerosol-generating procedures are performed.
- Following approved procedures, the ambulance must be cleaned and disinfected ensuring that all contaminated surfaces including stretcher, rails, control panels, floors, walls, and work surfaces are thoroughly cleansed approved disinfectant and in according to manufacturer's instructions.
- Clean and disinfect reusable patient-care equipment before use on another patient, according to manufacturer's instructions.
- Ambulance staff should keep to approved procedures for the containment and disposal of used PPE and regulated medical waste as well as laundering used linen. Avoid shaking the linen.

### 5.5.5 Recommendations to Ambulance Staff Post Care of a Suspected or Confirmed COVID-19 Patient: Follow-up/Reporting Procedures

- Ambulance staff should carry out follow-up/reporting measures required of them post care of a patient with suspected or confirmed SARS-CoV-2 infection. Their supervisors should implement regulations requiring monitoring, excluding from work, etc. as pertains to HCWs having potential exposure to SARS-CoV-2 infected patients.
- Ambulance staff are required to promptly inform their supervisor of exposures to a patient with confirmed SARS-CoV-2 infection who can ensure that appropriate action is taken.
- Ambulance staff are required to report any unprotected exposure to patient with confirmed SARS-CoV-2 infection (e.g., not donning recommended PPE, compromised or inappropriate PPE, etc.) to their supervisor or infection control for appropriate evaluation and action.
- Ambulance staff are required to monitor and report any fever or respiratory symptoms (e.g., cough, shortness of breath, sore throat). Upon developing symptoms, they should isolate themselves and inform their supervisor or infection control for appropriate evaluation and action. (More detailed recommendations on updated **Guideline of Management of Healthcare Workers Exposed to COVID-19**).



### 5.6 Administrative controls

- Establishment of sustainable IPC infrastructures and activities.
- Adequate staff training and specifically appropriate human behavior, and patients' care givers education.
- Vaccination coverage to all HCWs in the facility with prioritization to high risk groups.
- Staff that manages suspected/confirmed cases should be chosen based on their immunization status as much as possible.
- Policies on early recognition of acute respiratory infection potentially due to COVID-19.
- Access to prompt laboratory testing for identification of the etiologic agent.
- Prevention of overcrowding especially in the emergency department.
- Provision of dedicated waiting areas with clear signage of "Respiratory Waiting Area" for symptomatic patients and appropriate placement of hospitalized patients promoting an adequate patient-to-staff ratio.
- Provision and use of regular supplies.
- IPC policies and procedures for all facets of healthcare provisions with emphasis on surveillance of acute respiratory infection potentially due to COVID-19 among HCWs and the importance of seeking medical care.
- Monitoring of HCW compliance with standard precautions, along with mechanisms for improvement as needed.

### 5.7 Environmental and engineering controls

- Basic health-care facility infrastructures.
- Ensuring adequate environmental ventilation.
- Adequate environmental cleaning in all areas within the health-care facility.
- Terminal room cleaning at the time of discharge or transfer of patients.
- Physical separation of at least 1.5-2-meter distance should be maintained between each suspect patient and others.

### 5.8 Collection and handling of laboratory specimens from patients with suspected COVID-19

- All samples collected for laboratory investigations should be regarded as potentially infectious.
- HCWs who collect or transport clinical specimens should adhere rigorously to Standard Precautions to minimize the possibility of exposure to pathogens.
- Ensure that HCWs who collect specimens use appropriate PPE (eye protection, surgical mask, long-sleeved gown, gloves).
- The respiratory specimen should be collected under aerosol generating procedure, personnel should wear a particulate certified N95 respirator.

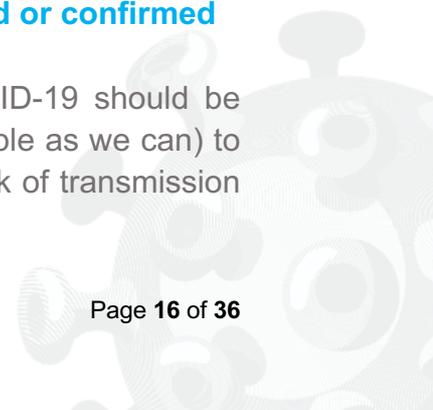
- Ensure that all personnel who transport specimens are trained in safe handling practices and spill decontamination procedures.
- Place specimens for transport in leak-proof specimen bags (secondary container) that have a separate sealable pocket for the specimen (i.e. a plastic biohazard specimen bag), with the patient's name label on the specimen container (primary container), and a clearly written laboratory request form.
- Ensure that health-care facility laboratories adhere to appropriate biosafety practices and transport requirements according to the type of organism being handled.
- Deliver all specimens by hand whenever possible.
- **DO NOT** use pneumatic-tube systems to transport specimens.
- HESN Printed lab requisitions must be sent with samples and national lab reception report and result values must be updated on HESN on their corresponding time.

### 5.9 Environmental cleaning and disinfection after suspected or confirmed COVID-19 patients in the facility

- In-patient rooms (housing COVID-19 patients) should be cleaned and disinfected at least daily and at the time of patient transfer or discharge
- More frequent cleaning and disinfection may be indicated for high-touch surfaces and following aerosol producing procedures (e.g. tables, hard-backed chairs, doorknobs, light switches, remotes, handles, desks, toilets, sinks)
- Cleaning staff should wear disposable gloves, surgical mask and isolation gowns for all tasks in the cleaning process, including handling of waste.
- Cleaning and disinfection of the environmental surfaces should be with approved MOH disinfectant e.g. Hydrogen peroxide, quaternary ammonium chloride 4th generation, freshly prepared sodium hypochlorite solution 1000 ppm with consideration to the contact time in accordance with manufacturer's instructions for environmental surface disinfection.
- After patient transfer, terminal cleaning should be done using manual method and /or ultraviolet germicidal irradiation or hydrogen peroxide dry mist or vapor.

### 5.10 Infection Control in Radiological examination for suspected or confirmed COVID-19 Cases

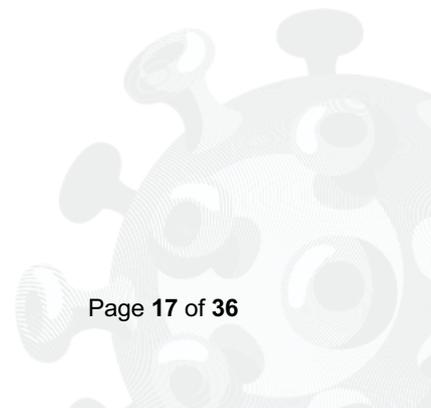
- a) Chest X-ray for patients with suspected/confirmed COVID-19 should be done at the patient room with portable machine (as possible as we can) to limit transportation of patients which may increase the risk of transmission of infection.



- b) Imaging patients with suspected/confirmed COVID-19 should only be considered for emergent situations
- c) Transmission based Precautions of contact, droplet and/or airborne infection should be applied with suspected/confirmed COVID-19 patients depending on patient status and the procedure.
- d) Portable radiographic machines should be used as possible as we can to limit transportation of patients which may increase the risk of transmission of infection.
- e) Dedicated portable x-ray machine for isolation wards, ER (one for each unit) to minimize the risk of spread of infection and when available, use cassette/detector single use/disposable covers to minimize risk of spread of infection.
- f) It should be highlighted in the imaging request that the patient is suspected or confirmed COVID-19.
- g) The radiology technician should be trained from infection control department about standard and transmission-based precautions especially hand hygiene, proper selection and use of PPE.
- h) Portable machine should be disinfected after each use with approved MOH disinfectant and according to the manufacturer recommendations.

#### **5.10.1 Infection control for suspected or confirmed COVID-19 in the Radiology Department**

- e. If the portable machine is not available or cases requested for static machines and/or advanced imaging/procedure, (e.g. CT scan, MRI, IR, etc.), the referring physician should discuss the case with the radiology consultant and infection control department before sending the patient for imaging.
- f. The patient should be directly taken into the modality room without delay and should not be waiting in general waiting areas of the department.
- g. The modality scan area should be clear of other patients and/or unnecessary staff.
- h. Items/equipment that are not needed in the examination should be cleared.
- i. Radiology staff should don the necessary PPE when dealing with the patient and doff them after the finish of the process.



## 6. LABORATORY DIAGNOSIS

### 6.1 Specimen collection and shipment of SARS-CoV-2

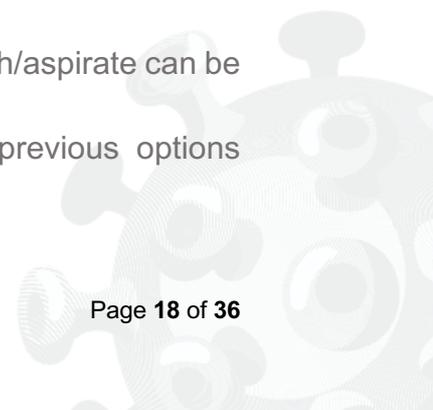
All staff who will be handling the SARS-CoV-2 samples should be trained for appropriate collection, packaging, transportation, analysis, and specimen storage. When collecting the specimen, avoid sample contamination and follow the instructions and adhere to infection control measures and wear appropriate PPE as described in section 4.8. It is advised to have sufficient quantity of sample in case of repeating the test or performing further characterization. Follow the appropriate precautions for safety during collection and processing of samples.

### 6.2 Laboratories to perform diagnostic testing

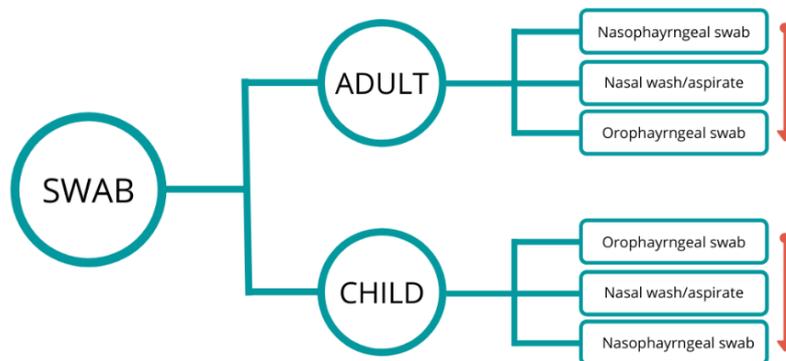
- Testing is limited to qualified laboratories with a certified Class II BSC in a BSL-2 facility and those designated by the Public Health Authority.
- Ensure that the laboratory have all the required standard operating procedures (SOP) in place and that laboratory staff are trained in all relevant procedures.
- To provide diagnostic testing for COVID-19, the laboratory can perform RDT or RT-PCR testing using test approved by the Public Health Laboratory.
- In highly suspected patients, if the initial testing with RDT is negative, RT-PCR should be used re-test.
- For the public health surveillance of the COVID-19 variant, PCR should be performed for all admitted patients or for patients who have a recent history of travel, in addition to other criteria based on updated directions from the MoH and PHA.
- Virus isolation from samples collected from positive cases or patients suspected to have COVID-19 should only be done in a BSL-3 facility and require special trained staff to perform procedures involving viral isolation.

### 6.3 Samples to be collected.

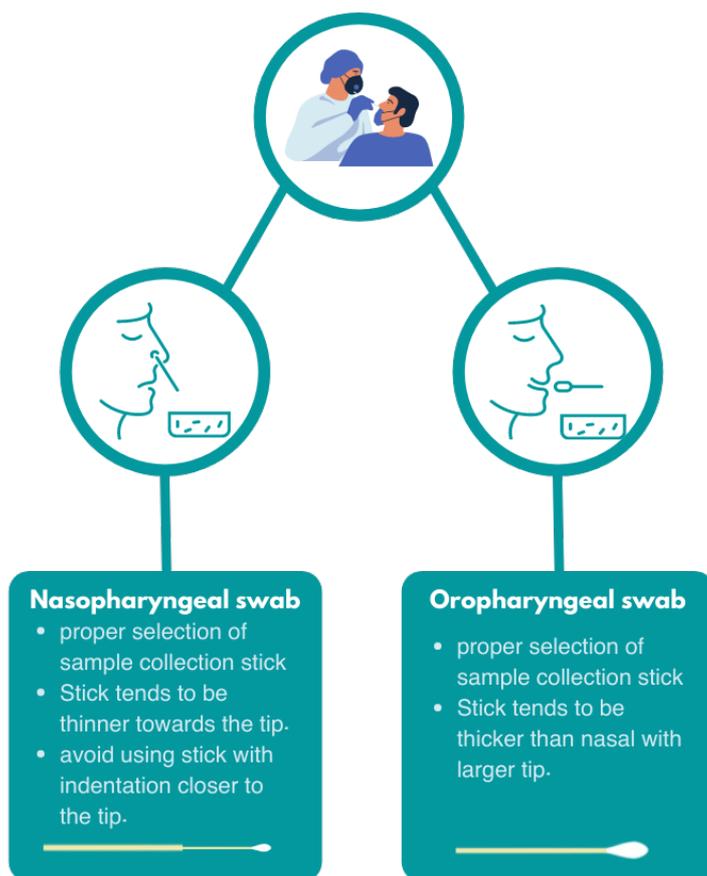
- a. Lower respiratory tract samples: including endotracheal aspirate, Broncho alveolar lavage fluid or sputum.
- b. Upper respiratory tract samples:
  - i. Sample collection in Adults:
    - Whenever feasible, nasopharyngeal swab should be the first choice when collecting samples.
    - If nasopharyngeal swab is not feasible, Nasal wash/aspirate can be considered.
    - Oropharyngeal swab can be used when both previous options aren't feasible.



- ii. Sample collection in children (<12 years old):
- Oropharyngeal swab should be considered.
  - If not feasible, nasal wash/aspirate can be considered.
  - If not feasible, nasopharyngeal swab can be considered (only flexible nasopharyngeal swab should be used )



- The lower respiratory tract samples are preferred if patient have signs or symptoms of lower respiratory tract infection. If lower tract specimens are not possible or clinically indicated, upper respiratory samples should be collected.
- Repeat testing should be performed if initial testing is negative and there is a high index of suspicion. Patients should be retested using a lower respiratory sample or, if not possible, repeat collection of a nasopharyngeal sample.
- In HESN you can register the case, for test requested select COVID-19, and select the designated laboratory.
- HESN request form is to be completed and must be attached with sample.
- A single negative test result, especially from upper respiratory tract sample, does not rule out the infection.
- Negative RDT or negative RT-PCR results must be interpreted in correlation with clinical findings, history, and other diagnostic procedures. As poor quality of the specimen, time of collection during the course of the disease, shipment and shipment condition, some RDT or PCR technical reasons could lead to false negative results.
- Positive RDT or positive RT-PCR for COVID-19 indicate infection with SARS-CoV-2. However, it does not rule out co-infection with other pathogens.



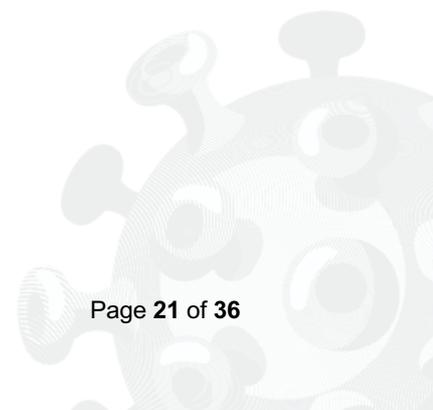
\* Disclaimer: follow the manufacture instruction while selecting proper VTM, shapes may vary according to different manufacturers

#### 6.4 Notification and Result Reporting HESN portal

- All laboratories testing for COVID-19 are required to report all positive results immediately to the public health authorities through HESN portal.
- Samples with positive results from MOH, Governmental non-MOH and private Sectors should be sent to Public Health Laboratory, Saudi public health Authority for further confirmation and characterization according to updated memo regarding to numbers and frequency.
- Store respiratory samples at 2-8°C and ship directly to Public Health Laboratory, Saudi Public Health Authority on ice pack.

#### 6.5 Storage and Shipment of samples

- Store samples at 2-8°C and ship on ice pack to Public Health Laboratory. Samples can be stored at 2-8°C for ≤48 hours, if longer storage is needed, samples should be stored at -70 °C. If sample is frozen at -70°C, ship on dry ice.
- Samples can be shipped free of charge via the courier, SMSA, following appropriate regulations. The courier service is available for sample transportation and pickup locations throughout the country for collection of samples from MOH hospitals and other Health care facilities. Specimens pick up can be requested from SMSA at the following number (8006149999)
- All specimens must be appropriately packaged.
- The courier will package and transport the samples in accordance with Category B transportation regulations and the WHO guidance on regulations for the transport of infectious substances 2019-2020.
- For detailed guidelines on Sample collection, packaging, and shipping, please refer to MERS-CoV guidelines version 5.1 (Appendix E).



## 7. PUBLIC HEALTH CONSIDERATIONS

### 7.1 Reporting of suspected Cases

- The COVID-19 is an emerging pathogen, which is by default as **category I** reportable disease that should be immediately reported. All healthcare facilities must report suspected cases immediately through Health Electronic Surveillance Network (HESN). Failure of healthcare organizations and/or professionals to report reportable infectious diseases is punishable by law.
- The surveillance of COVID-19 included tracking variants of interest (VOIs) and variants under monitoring (VOCs). The selection of COVID-19 cases for gene sequencing in public health laboratory is based on criteria that regularly updated by PHA and MOH.
- Currently, the selected cases included the cases with history of traveling abroad, ICU cases, random sample of community cases or hospital admitted cases (non-ICU).

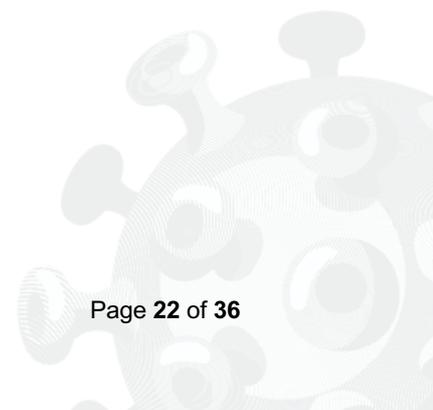
### 7.2 Risk Communication

Risk communication is integral to the success of response to any health emergency and possible outbreaks. During outbreaks, panics, rumors and misunderstandings are raising between people. Thus, risk communication helps prevent infodemics, alleviate confusion and avoid misunderstandings. Most important and effective interventions in a public health response to any event or outbreak is to proactively communicate and engage and share strategies with the community.

Ensure to update health care workers about COVID-19 status globally and in Saudi Arabia. The internal communication plan should be developed for communicating information about suspected or confirmed cases inside the facility. The assigned risk communication team should be formed with clear roles and responsibilities. The main role of the team is to understand the concerns, beliefs, behaviors, rights and duties during alert and outbreak phases. Announcement of cases will be among the spokesperson of MOH only. To avoid any panic or rumors among the public. The main official sources of COVID-19 information are the MOH and PHA.

### 7.3 Vaccination

For latest guidelines on vaccination refer to “Interim guidelines for the use of SARS-CoV-2 vaccine” published on public health Authority official website.



## 8. Criteria for Recovery and Discontinuing Isolation

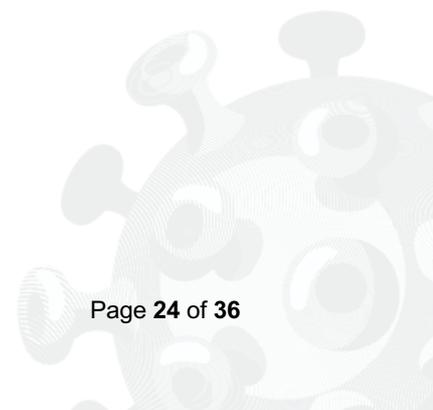
### 8.1 Confirmed Cases

Immunization status	Patient Status	Description	Instructions
Unimmunized	Severe infection	Patients who are hospitalized at noncritical wards with laboratory confirmed COVID-19	<p><b>Isolation should last until all of the following criteria are fulfilled:</b></p> <ul style="list-style-type: none"> <li>At least 10 days have passed since the onset of symptoms AND no recorded fever in the last 3 days without the use of antipyretics AND improvement of other symptoms (Cough, SOB and GI symptoms).</li> </ul> <p>- Patient can be discharged before recovery based on clinical criteria, per evaluation of the treating physician, home- isolation should be continued until fulfilled the recovery criteria.</p>
		Immunocompromised* and critical cases (ICU admitted patients)	<p><b>Isolation should last until one of the following criteria are fulfilled:</b></p> <p>At least 21 days after symptom onset AND resolution of fever for at least 3 days, AND clinical improvement of symptoms other than fever (Cough, SOB and GI symptoms).</p> <p><b>OR</b></p> <p>At least 3 days have passed since <b>recovery</b> (resolution of the fever without using fever reducing medication and symptom improvement (Cough, SOB and GI symptoms) AND followed by 2 negative respiratory samples <math>\geq</math> 24 hours apart.</p>
	Mild confirmed cases	Confirmed COVID-19 patients never hospitalized due to mild symptoms or asymptomatic presentation	<p>These patients can end self-isolation 10 days after the onset of symptoms <b>AND</b> resolution of fever for at least 3 days AND clinical improvement of other symptoms.</p> <p>For asymptomatic lab-confirmed cases 10 days have passed since the date of collection of the respiratory sample with the first positive RDT or PCR result.</p>
Immunized		Confirmed COVID-19 fully vaccinated patients never hospitalized due to mild symptoms or asymptomatic presentation	<p>These patients can end self-isolation 7 days after the onset of symptoms and resolution of fever for at least 24 hours without antipyretics.</p> <p>For asymptomatic lab-confirmed cases 7 days have passed since the date of collection of the respiratory sample with the first positive RDT or PCR result.</p>

\*Neutropenia (absolute neutrophils count  $<500/mm^3$ ), leukemia or lymphoma, HIV with CD4 count  $< 200$ , Splenectomy, Early post-transplant, Cytotoxic chemotherapy, on high dose steroid therapy:  $>40$  mg prednisone or its equivalent ( $>160$  mg hydrocortisone,  $>32$  mg methylprednisolone,  $>6$  mg dexamethasone,  $>200$  mg cortisone) daily for  $> 2$  weeks.

## 9. MANAGING OF DECEASED BODIES

- Deceased bodies of COVID-19 patients may pose a risk of infection transmission.
- Isolation precautions should be continued to the deceased COVID-19 case.
- Cadaver bags that fulfill MOH approved specifications should be used for transport of dead bodies of deceased COVID-19 patients and those handling the body at this point should use PPE (surgical mask, clean gloves, and isolation gown).
- The trolley carrying the body must be disinfected after transmission.
- Only experienced morgue staff are dealing with bodies of deceased COVID-19 patients, the morgue's staff should be well trained, familiar with standard precautions and transmission-based precautions while handling dead bodies, especially hand hygiene, safe and proper use of PPE.
- Morgue's staff should be informed about infectious status of the deceased, risk of infection and appropriate precautions required through use of morgue's transportation card attached to the dead body or to the bag about the disease and transmission-based precautions required.
- Prevents relatives from direct surface contact with the body such as touching or kissing it. However, it is acceptable to open the body bag for family viewing wearing PPE
- The body is prepared for burial in mortuary department of the healthcare facility as it is not allowed to transport it to the home and it is only allowed to move it to public washing places after ensuring that there are equipment and trained people to deal with the dead bodies with infectious diseases.
- Limit the number of morgue's personnel dealing with the dead body to the minimum number required.
- All persons performing or attending the body washing and preparation should wear PPE (surgical mask, isolation gown, and clean gloves) and should perform hand hygiene after removal of the gloves.
- If family members wish to perform the body washing, this should be under supervision and must strictly adhere to standard precautions and use PPE.
- Body washing of COVID-19 cases are preferably be done at hospitals. However, it can be safely performed in public washing facilities, If the dead body transmitted outside the healthcare facility to be prepared for burial the receiving facility should be informed by the disease, mode of transmission and precautions needed during body preparation, as well as public health worker is identified to accompany the body in order to ensure compliance with the required precautions throughout the pre-burial period.



### 9.1 Collection of Postmortem Upper Respiratory Tract Swab Specimens

Since collection of nasopharyngeal and oropharyngeal swab specimens from deceased persons will not induce coughing or sneezing, a negative pressure room or HEPA filter unit are not required.

#### **The following PPE should be worn:**

- Clean gloves.
- Wear heavy-duty gloves over the gloves, if there is a risk of cuts, or other injuries that break the skin.
- Clean, long-sleeved fluid-resistant or impermeable isolation gown.
- Face shield or goggles and face mask.

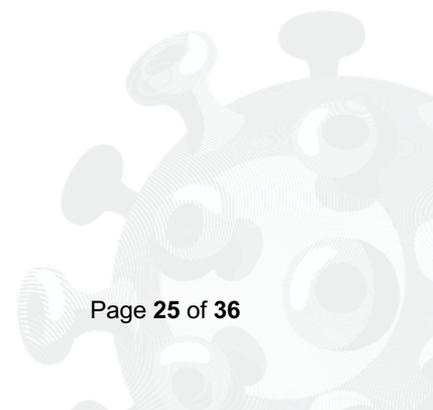
### 9.2 Autopsy Procedures

Standard Precautions, Contact Precautions, and Airborne Precautions with eye protection (e.g., goggles or a face shield) should be followed during autopsy.

- Aerosol Generating Procedures (AGPs) such as use of an oscillating bone saw should be avoided for confirmed or suspected cases of COVID-19. Consider using hand shears as an alternative cutting tool. If an oscillating saw is used, attach a vacuum shroud to contain aerosols.
- Allow only one person to cut at a given time.
- Limit the number of personnel working in the autopsy room at any given time to the minimum number needed to conduct the autopsy safely.
- Use caution when handling needles or other sharps, and dispose of contaminated sharps in puncture-proof sharps containers.
- A logbook including names, dates, and activities of all workers participating in the postmortem and cleaning of the autopsy room should be kept assisting in future follow up, if necessary.

#### **Engineering Control Recommendations**

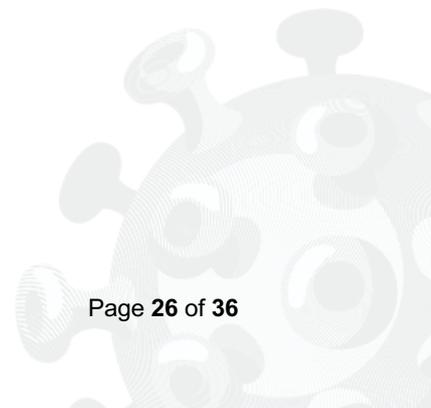
- Autopsies on dead body of known or suspected COVID-19 patient should be conducted in Airborne Infection Isolation Rooms (AIIRs).
- If an AIIR is not available, use a portable HEPA filter unit.
- Local airflow control (i.e., laminar flow systems) can be used to direct aerosols away from personnel. If use of an AIIR or HEPA filter unit is not possible, the procedure should be performed in the most protective environment possible.



### **PPE Recommendations**

The following PPE should be worn during autopsy procedures:

- Double surgical gloves interposed with a layer of cut-proof synthetic mesh gloves
- Fluid-resistant or impermeable gown
- Waterproof apron
- Goggles or face shield
- Certified fit tested N95. Otherwise, Powered Air-Purifying Respirator (PAPR) with HEPA filter is used to provide respiratory protection during autopsy procedures.
- Surgical scrubs, shoe covers, and surgical cap.
  - Remove PPE carefully to avoid contaminating yourself and before leaving the autopsy room or adjacent anteroom
  - Reusable PPE (e.g., PAPRs) must be cleaned and disinfected according to the manufacturer's recommendations.
  - Immediately after doffing PPE, wash hands with soap and water for 40 seconds or use alcohol-based hand sanitizer if hands are not visibly dirty for 20 seconds. Ensure that hand hygiene facilities are readily available at the point of use (e.g., at or adjacent to the PPE doffing area).



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## I. APPENDIX

### APPENDIX 1

#### Coronavirus Disease 2019 (COVID-19) Investigation Form

Date of initial notification: \_\_\_\_ dd/ \_\_\_\_ mm/ \_\_\_\_ yyyy

Notification					
Name of who completed the form		Contact number			
Date		Email			
Hospital Name		City			
At the time of this report, is the case?		<input type="checkbox"/> Confirmed <input type="checkbox"/> Suspected		<input type="checkbox"/> Case under investigation <input type="checkbox"/> Not a case	
Patient Information					
Full name		Date of Birth	____ dd/ ____ mm/ ____ yyyy		
Nationality					
Identification number:		Marital status			
Occupation	<input type="checkbox"/> HCW <input type="checkbox"/> Non-HCW _____	Sex	<input type="checkbox"/> Male <input type="checkbox"/> Female		
Phone Number		Age			
Address	House No.: _____ Street name: _____ District _____				
	City: _____ Province/Region: _____				
Education					
Clinical Information					
Date of symptoms onset		____ / ____ / ____			
Symptoms	Yes	No	Symptoms	Yes	No
Fever $\geq 38^\circ$			Nausea		
History of fever (not measured).			Vomiting		
Sore throat			Headache		
Runny nose			Muscle pain		
Cough			Joint pain		
Shortness of breath			Diarrhea		
Other (specify):					
Hospitalization Information					
Is/was the patient hospitalized?		<input type="checkbox"/> Yes, Date of admission ____ / ____ / ____ <input type="checkbox"/> No			
Admitted to ICU?	Intubated?	On ECMO?	Patient died?		
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		

Comorbid conditions (check all that apply):	
<input type="checkbox"/> None <input type="checkbox"/> Unknown <input type="checkbox"/> Pregnancy <input type="checkbox"/> Diabetes <input type="checkbox"/> Cardiac disease <input type="checkbox"/> Hypertension <input type="checkbox"/> Chronic pulmonary disease <input type="checkbox"/> Chronic kidney disease <input type="checkbox"/> Chronic liver disease <input type="checkbox"/> Obesity <input type="checkbox"/> Smoking (any type) <input type="checkbox"/> Immunocompromised <input type="checkbox"/> Other: _____	
<b>Epidemiological Information</b>	
<b>Visiting and Travel History:</b>	
Did the patient travel in the 14 days prior to illness onset?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
<b>If yes,</b>	
Trip 1: Dates of travel: ___ / ___ / ___ to ___ / ___ / ___ Country _____ City _____ Trip 2: Dates of travel: ___ / ___ / ___ to ___ / ___ / ___ Country _____ City _____ Trip 3: Dates of travel: ___ / ___ / ___ to ___ / ___ / ___ Country _____ City _____	
In the 14 days prior to illness onset, did the patient have close contact with someone who travelled outside the Country?	
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
Please describe individual (including travel location)	
<b>If the patient was tourist/pilgrim, please complete information below:</b>	
Did the patient travel with?	<input type="checkbox"/> Airline <input type="checkbox"/> Ship <input type="checkbox"/> Bus <input type="checkbox"/> Car <input type="checkbox"/> Other _____
<b>Airline Information:</b>	
Airline Name: _____ Flight Number: _____ Origin: _____	
Date of arrival: ___ / ___ / ___ Date of departure: ___ / ___ / ___ Transit destination: _____	
<b>Other Trans Information:</b>	
Type of transportation: _____ Date of arrival: ___ / ___ / ___	
Port of entry: _____ Origin: _____	
<b>Resident Information after arrival:</b>	
Name of resident (hotel, Hajj campaign, ..etc.): _____ where: _____	
Date of check in: ___ / ___ / ___ Date of check out: ___ / ___ / ___	
Note: (Describe the timeline of contact movement)	

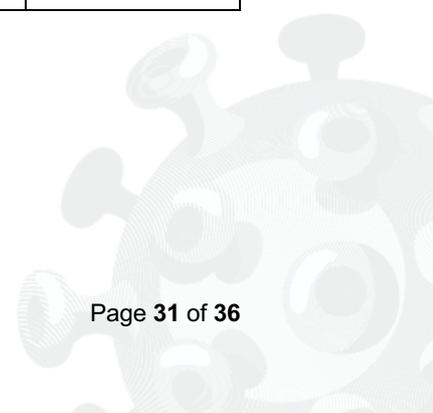
Contact Exposure	
Did the patient receive vaccination against SARS-CoV-2 ? If so which type ?	<input type="checkbox"/> Yes <input type="checkbox"/> No Date: / / Type: ..... Doses: .....
Did the patient have contact with a known or suspect case, or with any sick person before becoming ill (14 days prior to illness onset)?	<input type="checkbox"/> Yes Date: <input type="checkbox"/> No <input type="checkbox"/> Unknown
Did the patient have contact with anyone during illness period?	
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <b>If yes, please complete the list of patient contact in the end of report</b>	
In the 14 days before or after becoming ill, did the patient attend a public event where a large number of people were present (i.e., a sporting event, wedding, concert, Hajj and Umrah)?	
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	If yes, please describe the event (include date and location)
In the 14 days before or after becoming ill, did the patient visited any healthcare facility or setting?	
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	Specify healthcare facility/reason: _____

Animal Exposure:	
Did the patient have direct/ indirect contact with any animals within the last 14 days?	
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
If yes, please specify and describe the contact (what/when/where/extent)	
Did the patient visit any of the following locations where animals may be present within the last 14 day?	
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
If yes, check all that apply: <input type="checkbox"/> Farm <input type="checkbox"/> Petting zoo <input type="checkbox"/> Agricultural event <input type="checkbox"/> Live animal market <input type="checkbox"/> Slaughterhouse <input type="checkbox"/> Pet store <input type="checkbox"/> Other: _____	
Please describe (when/where/extent):	
Did the patient has any other occupation that regularly deals with animal?	
<input type="checkbox"/> Yes, specify _____ <input type="checkbox"/> No <input type="checkbox"/> Unknown	
Note:	

APPENDIX 2

List of patient's contacts					
Name of contact	Relation to patient	Last contact date	City	Sex	Phone
		____ / ____ / ____		<input type="checkbox"/> Male <input type="checkbox"/> Female	
		____ / ____ / ____		<input type="checkbox"/> Male <input type="checkbox"/> Female	
		____ / ____ / ____		<input type="checkbox"/> Male <input type="checkbox"/> Female	
		____ / ____ / ____		<input type="checkbox"/> Male <input type="checkbox"/> Female	
		____ / ____ / ____		<input type="checkbox"/> Male <input type="checkbox"/> Female	
		____ / ____ / ____		<input type="checkbox"/> Male <input type="checkbox"/> Female	
		____ / ____ / ____		<input type="checkbox"/> Male <input type="checkbox"/> Female	
		____ / ____ / ____		<input type="checkbox"/> Male <input type="checkbox"/> Female	
		____ / ____ / ____		<input type="checkbox"/> Male <input type="checkbox"/> Female	
		____ / ____ / ____		<input type="checkbox"/> Male <input type="checkbox"/> Female	

For follow up of contacts, use the contact tracking form to collect additional information.



APPENDIX 3

Contact Tracing Form

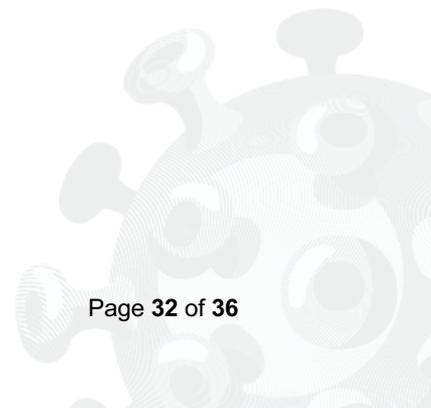
Novel Coronavirus

Name of the contact: \_\_\_\_\_ ID/ Iqama number: \_\_\_\_\_

Age: \_\_\_\_\_ Nationality: \_\_\_\_\_ Phone #: \_\_\_\_\_

Daily Contact Follow-Up Form

1 Day after last exposure _____/_____/_____	5 Day after last exposure _____/_____/_____	9 Day after last exposure _____/_____/_____	13 Day after last exposure _____/_____/_____
<input type="checkbox"/> No symptoms <input type="checkbox"/> Fever _____ °C <input type="checkbox"/> Shortness of breath <input type="checkbox"/> Sore throat <input type="checkbox"/> Cough <input type="checkbox"/> Headache <input type="checkbox"/> Muscle/joint pain <input type="checkbox"/> Diarrhea _____ times/day <input type="checkbox"/> Vomiting/nausea <input type="checkbox"/> Runny nose Others _____	<input type="checkbox"/> No symptoms <input type="checkbox"/> Fever _____ °C <input type="checkbox"/> Shortness of breath <input type="checkbox"/> Sore throat <input type="checkbox"/> Cough <input type="checkbox"/> Headache <input type="checkbox"/> Muscle/joint pain <input type="checkbox"/> Diarrhea _____ times/day <input type="checkbox"/> Vomiting/nausea <input type="checkbox"/> Runny nose Others _____	<input type="checkbox"/> No symptoms <input type="checkbox"/> Fever _____ °C <input type="checkbox"/> Shortness of breath <input type="checkbox"/> Sore throat <input type="checkbox"/> Cough <input type="checkbox"/> Headache <input type="checkbox"/> Muscle/joint pain <input type="checkbox"/> Diarrhea _____ times/day <input type="checkbox"/> Vomiting/nausea <input type="checkbox"/> Runny nose Others _____	<input type="checkbox"/> No symptoms <input type="checkbox"/> Fever _____ °C <input type="checkbox"/> Shortness of breath <input type="checkbox"/> Sore throat <input type="checkbox"/> Cough <input type="checkbox"/> Headache <input type="checkbox"/> Muscle/joint pain <input type="checkbox"/> Diarrhea _____ times/day <input type="checkbox"/> Vomiting/nausea <input type="checkbox"/> Runny nose Others _____



APPENDIX 4

Contact Tracing Form

Novel Coronavirus

Name of the contact: \_\_\_\_\_ ID/ Iqama number: \_\_\_\_\_  
Age: \_\_\_\_\_ Nationality: \_\_\_\_\_ Phone #: \_\_\_\_\_

Daily Contact Follow-Up Form				
<b>1 Day after last exposure</b> / / <input type="checkbox"/> No symptoms <input type="checkbox"/> Fever _____ °C <input type="checkbox"/> Shortness of breath <input type="checkbox"/> Sore throat <input type="checkbox"/> Cough <input type="checkbox"/> Headache <input type="checkbox"/> Muscle/joint pain <input type="checkbox"/> Diarrhea _____ times/day <input type="checkbox"/> Vomiting/nausea <input type="checkbox"/> Runny nose Others _____	<b>2 Day after last exposure</b> / / <input type="checkbox"/> No symptoms <input type="checkbox"/> Fever _____ °C <input type="checkbox"/> Shortness of breath <input type="checkbox"/> Sore throat <input type="checkbox"/> Cough <input type="checkbox"/> Headache <input type="checkbox"/> Muscle/joint pain <input type="checkbox"/> Diarrhea _____ times/day <input type="checkbox"/> Vomiting/nausea <input type="checkbox"/> Runny nose Others _____	<b>3 Day after last exposure</b> / / <input type="checkbox"/> No symptoms <input type="checkbox"/> Fever _____ °C <input type="checkbox"/> Shortness of breath <input type="checkbox"/> Sore throat <input type="checkbox"/> Cough <input type="checkbox"/> Headache <input type="checkbox"/> Muscle/joint pain <input type="checkbox"/> Diarrhea _____ times/day <input type="checkbox"/> Vomiting/nausea <input type="checkbox"/> Runny nose Others _____	<b>4 Day after last exposure</b> / / <input type="checkbox"/> No symptoms <input type="checkbox"/> Fever _____ °C <input type="checkbox"/> Shortness of breath <input type="checkbox"/> Sore throat <input type="checkbox"/> Cough <input type="checkbox"/> Headache <input type="checkbox"/> Muscle/joint pain <input type="checkbox"/> Diarrhea _____ times/day <input type="checkbox"/> Vomiting/nausea <input type="checkbox"/> Runny nose Others _____	<b>5 Day after last exposure</b> / / <input type="checkbox"/> No symptoms <input type="checkbox"/> Fever _____ °C <input type="checkbox"/> Shortness of breath <input type="checkbox"/> Sore throat <input type="checkbox"/> Cough <input type="checkbox"/> Headache <input type="checkbox"/> Muscle/joint pain <input type="checkbox"/> Diarrhea _____ times/day <input type="checkbox"/> Vomiting/nausea <input type="checkbox"/> Runny nose Others _____
<b>6 Day after last exposure</b> / / <input type="checkbox"/> No symptoms <input type="checkbox"/> Fever _____ °C <input type="checkbox"/> Shortness of breath <input type="checkbox"/> Sore throat <input type="checkbox"/> Cough <input type="checkbox"/> Headache <input type="checkbox"/> Muscle/joint pain <input type="checkbox"/> Diarrhea _____ times/day <input type="checkbox"/> Vomiting/nausea <input type="checkbox"/> Runny nose Others _____	<b>7 Day after last exposure</b> / / <input type="checkbox"/> No symptoms <input type="checkbox"/> Fever _____ °C <input type="checkbox"/> Shortness of breath <input type="checkbox"/> Sore throat <input type="checkbox"/> Cough <input type="checkbox"/> Headache <input type="checkbox"/> Muscle/joint pain <input type="checkbox"/> Diarrhea _____ times/day <input type="checkbox"/> Vomiting/nausea <input type="checkbox"/> Runny nose Others _____	<b>8 Day after last exposure</b> / / <input type="checkbox"/> No symptoms <input type="checkbox"/> Fever _____ °C <input type="checkbox"/> Shortness of breath <input type="checkbox"/> Sore throat <input type="checkbox"/> Cough <input type="checkbox"/> Headache <input type="checkbox"/> Muscle/joint pain <input type="checkbox"/> Diarrhea _____ times/day <input type="checkbox"/> Vomiting/nausea <input type="checkbox"/> Runny nose Others _____	<b>9 Day after last exposure</b> / / <input type="checkbox"/> No symptoms <input type="checkbox"/> Fever _____ °C <input type="checkbox"/> Shortness of breath <input type="checkbox"/> Sore throat <input type="checkbox"/> Cough <input type="checkbox"/> Headache <input type="checkbox"/> Muscle/joint pain <input type="checkbox"/> Diarrhea _____ times/day <input type="checkbox"/> Vomiting/nausea <input type="checkbox"/> Runny nose Others _____	<b>10 Day after last exposure</b> / / <input type="checkbox"/> No symptoms <input type="checkbox"/> Fever _____ °C <input type="checkbox"/> Shortness of breath <input type="checkbox"/> Sore throat <input type="checkbox"/> Cough <input type="checkbox"/> Headache <input type="checkbox"/> Muscle/joint pain <input type="checkbox"/> Diarrhea _____ times/day <input type="checkbox"/> Vomiting/nausea <input type="checkbox"/> Runny nose Others _____
<b>11 Day after last exposure</b> / / <input type="checkbox"/> No symptoms <input type="checkbox"/> Fever _____ °C <input type="checkbox"/> Shortness of breath <input type="checkbox"/> Sore throat <input type="checkbox"/> Cough <input type="checkbox"/> Headache <input type="checkbox"/> Muscle/joint pain <input type="checkbox"/> Diarrhea _____ times/day <input type="checkbox"/> Vomiting/nausea <input type="checkbox"/> Runny nose Others _____	<b>12 Day after last exposure</b> / / <input type="checkbox"/> No symptoms <input type="checkbox"/> Fever _____ °C <input type="checkbox"/> Shortness of breath <input type="checkbox"/> Sore throat <input type="checkbox"/> Cough <input type="checkbox"/> Headache <input type="checkbox"/> Muscle/joint pain <input type="checkbox"/> Diarrhea _____ times/day <input type="checkbox"/> Vomiting/nausea <input type="checkbox"/> Runny nose Others _____	<b>13 Day after last exposure</b> / / <input type="checkbox"/> No symptoms <input type="checkbox"/> Fever _____ °C <input type="checkbox"/> Shortness of breath <input type="checkbox"/> Sore throat <input type="checkbox"/> Cough <input type="checkbox"/> Headache <input type="checkbox"/> Muscle/joint pain <input type="checkbox"/> Diarrhea _____ times/day <input type="checkbox"/> Vomiting/nausea <input type="checkbox"/> Runny nose Others _____	<b>14 Day after last exposure</b> / / <input type="checkbox"/> No symptoms <input type="checkbox"/> Fever _____ °C <input type="checkbox"/> Shortness of breath <input type="checkbox"/> Sore throat <input type="checkbox"/> Cough <input type="checkbox"/> Headache <input type="checkbox"/> Muscle/joint pain <input type="checkbox"/> Diarrhea _____ times/day <input type="checkbox"/> Vomiting/nausea <input type="checkbox"/> Runny nose Others _____	

Note

Region: \_\_\_\_\_ Public Health Investigator: \_\_\_\_\_

**APPENDIX 5**

**Visual Triage Checklist for Acute Respiratory Infection**

Date:	Time	MRN:
Name:	ID#:	Hospital:

Circle the number reflecting the patient's condition (exposure and clinical picture) and calculate the final score:

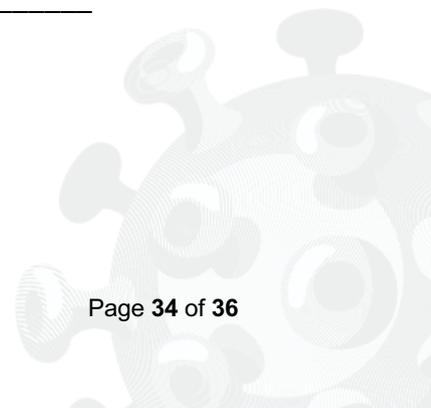
Risks for Acute Respiratory Illnesses	Score	
<b>A. Exposure Risks</b>	<b>Any Patient (Adult or Pediatric)</b>	
<p>A history of travel abroad in the past 14 days.</p> <p style="text-align: center;"><b>OR</b></p> <p>A contact with a confirmed case of COVID-19 or MERS-CoV in the last 14 days prior to symptom onset.</p> <p style="text-align: center;"><b>OR</b></p> <p>An exposure to camel or camel's products (direct or indirect*) in the last 14 days prior to symptom onset.</p> <p style="text-align: center;"><b>OR</b></p> <p>Working in a healthcare facility.</p>	<b>3</b>	
<b>B. Clinical Signs and Symptoms</b>	<b>Pediatric (≤14 years)</b>	<b>Adult (&gt;14 years)</b>
1. Fever or recent history of fever.	<b>4</b>	<b>4</b>
2. Cough (new or worsening).	<b>4</b>	<b>4</b>
3. Shortness of breath (new or worsening).	<b>4</b>	<b>4</b>
4. headache, sore throat, or rhinorrhea	<b>1</b>	<b>1</b>
5. Nausea, vomiting, and/or diarrhea.	<b>1</b>	<b>1</b>
6. Chronic renal failure, CAD/heart failure, Immunocompromised patient.	-	<b>1</b>
<b>Total Score</b>		

\*Patient or household member

A score  $\geq 4$ , ask the patient to perform hand hygiene, wear a surgical mask, direct the patient through the respiratory pathway, and inform MD for assessment.

MRSE-CoV or COVID-19 testing should only be performed according to case definitions.

Staff name: \_\_\_\_\_ ID number: \_\_\_\_\_



APPENDIX 6

نموذج الإبلاغ\* الفوري لحالة مشتبهة بمرض كوفيد-19 في المملكة العربية السعودية

Immediate reporting\* form for a suspected case with COVID-19 in Saudi Arabia

Date of reporting: dd/mm/yyyy Time:	وقت الإبلاغ: تاريخ الإبلاغ: يوم/شهر/سنة
Reporting person:	اسم المبلغ:
Reporting facility:	الجهة المبلغة:
Reporting address:	عنوان المبلغ/الجهة:
Reporting contact number:	رقم التواصل للمبلغ/للجهة:
<b>Suspected case information</b>	<b>معلومات الحالة المشتبهة</b>
Name: Sex:	الإسم: الجنس:
Date of birth: dd/mm/yyyy Age:	تاريخ الميلاد: يوم/شهر/سنة العمر:
Nationality:	الجنسية:
ID type: (specify) ID number:	رقم الهوية/الجواز: نوع الهوية: (الرجاء التحديد)
Contact number(s):	رقم التواصل:
Address:	العنوان:
Healthcare worker: <input type="checkbox"/> Yes <input type="checkbox"/> No (specify occupation)	عامل في الرعاية الصحية: <input type="checkbox"/> نعم <input type="checkbox"/> لا (الرجاء تحديد المهنة)
<b>Definition 1</b> <b>Does the case has at least 1 of the following symptoms** (with high index of clinical suspicion***):</b>	<b>تعريف رقم 1</b> <b>هل الحالة المشتبهة لديها على الأقل أحد الأعراض** التالية (مع وجود درجة عالية من الاشتباه السريري***):</b>
Fever (or T ≥38 °C)? <input type="checkbox"/> Yes, onset: dd/mm/yyyy <input type="checkbox"/> No	سخونة (أو درجة حرارة ≥38 مئوية)? <input type="checkbox"/> نعم، ابتداء من: يوم/شهر/سنة <input type="checkbox"/> لا
Cough? <input type="checkbox"/> Yes, onset: dd/mm/yyyy <input type="checkbox"/> No	سعال (كحة)? <input type="checkbox"/> نعم، ابتداء من: يوم/شهر/سنة <input type="checkbox"/> لا
Shortness of breath? <input type="checkbox"/> Yes, onset: dd/mm/yyyy <input type="checkbox"/> No	ضيق في التنفس? <input type="checkbox"/> نعم، ابتداء من: يوم/شهر/سنة <input type="checkbox"/> لا
<b>Or Definition 2</b> <b>Does the case has at least 1 of the following symptoms:</b>	<b>أو تعريف رقم 2</b> <b>هل الحالة المشتبهة لديها على الأقل أحد الأعراض** التالية:</b>
Runny nose? <input type="checkbox"/> Yes, onset: dd/mm/yyyy <input type="checkbox"/> No	رشح (سيلان) الأنف? <input type="checkbox"/> نعم، ابتداء من: يوم/شهر/سنة <input type="checkbox"/> لا
Sore throat? <input type="checkbox"/> Yes, onset: dd/mm/yyyy <input type="checkbox"/> No	إحقان (التهاب) الحلق? <input type="checkbox"/> نعم، ابتداء من: يوم/شهر/سنة <input type="checkbox"/> لا
Headache? <input type="checkbox"/> Yes, onset: dd/mm/yyyy <input type="checkbox"/> No	صداع? <input type="checkbox"/> نعم، ابتداء من: يوم/شهر/سنة <input type="checkbox"/> لا
Nausea? <input type="checkbox"/> Yes, onset: dd/mm/yyyy <input type="checkbox"/> No	غثيان? <input type="checkbox"/> نعم، ابتداء من: يوم/شهر/سنة <input type="checkbox"/> لا
Diarrhea? <input type="checkbox"/> Yes, onset: dd/mm/yyyy <input type="checkbox"/> No	إسهال? <input type="checkbox"/> نعم، ابتداء من: يوم/شهر/سنة <input type="checkbox"/> لا
<b>AND met at least 1 of the following criteria in the last 14 days prior to symptom onset:</b>	<b>وهل ينطبق على الأقل أي من التالي على الحالة المشتبهة خلال آخر 14 يوماً قبل ظهور الأعراض:</b>
Had contact with a confirmed COVID-19 case? <input type="checkbox"/> Yes, last date: dd/mm/yyyy location: <input type="checkbox"/> No	مخالطة مع حالة مؤكدة مصابة بكوفيد-19? <input type="checkbox"/> نعم، آخر تاريخ: يوم/شهر/سنة المكان: <input type="checkbox"/> لا
Lived in or worked in a facility known to be experiencing an outbreak of COVID-19? <input type="checkbox"/> Yes, last date: dd/mm/yyyy location: <input type="checkbox"/> No	معيشة أو عمل في منشأة تم فيها حدوث تفشي لكوفيد-19? <input type="checkbox"/> نعم، آخر تاريخ: يوم/شهر/سنة المكان: <input type="checkbox"/> لا
<b>Or Definition 3:</b> <b>Does the case has any of the following conditions:</b>	<b>أو تعريف رقم 3:</b> <b>هل الحالة المشتبهة لديها أي من الظروف التالية:</b>
Admitted adult (>14 years) with unexplained sever acute respiratory infection (SARI) either as Community <input type="checkbox"/> Yes <input type="checkbox"/> No	مريض بالغ (>14 سنة) منوم بعنوى تنفسية وخيمة حادة غير محددة المسبب سواء كإلتهاب رئوي مكتسب من المجتمع أو من المستشفى? <input type="checkbox"/> نعم <input type="checkbox"/> لا
Acquired Pneumonia (CAP) or Hospital Acquired Pneumonia (HAP)?	

\*ONLY report and request laboratory testing for suspected\*\* cases. Official reporting in Saudi Arabia is through the Health Electronic Surveillance Network (HESN) by selecting the nCoV2019 investigation e-forms and testing panel. If unable to report through HESN, kindly fill out this form and send it via an SMS or WhatsApp message to the Generate Directorate of Communicable Disease Control at 00966501486268. Updated 21 May 2020. Source: Saudi Center for Disease Prevention and Control, Ministry of Health, Saudi Arabia.

\*\*Clinicians should be alert to the possibility of atypical presentations in patients who are immunocompromised. Fever is frequently reported (77-98%) but elderly and people with severe comorbidities may not mount fever initially. Some patients may present with gastrointestinal symptoms like diarrhea and nausea prior to developing fever and lower respiratory tract symptoms.

\*\*\*Clinicians should use their judgement to determine if a patient should be tested for COVID-19 based on an epidemiology risk factor and presence of other symptoms consistent with COVID-19 including sore throat, new loss of taste or smell, chills, muscle pain, and/or fatigue.

**APPENDIX 7 Discontinuation of isolation (Excluding HCWs)**

