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Ministry of Health

Clinical Guidelines for Nursing & Midwifery Practice during the Coronavirus (COVID-19) Pandemic

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Title:	Clinical Guidelines for Nursing and Midwifery Practice during the Coronavirus (COVID-19) Pandemic
Applied to:	This policy is directed to all nursing staff and midwifes dealing with confirmed or suspected Covid-19 cases at hospital settings.
Replaces (if appropriate):	N/A

Recommended References:

Saudi CDC Coronavirus Disease (COVID-19) Guidelines 2020, V1.1
https://www.moh.gov.sa/CCC/healthp/regulations/Documents/Coronavirus%20Disease%202019%20Guidelines%20v1.1..pdf

Maternity care for mothers and babies during COVID-19 pandemic
https://www.health.qld.gov.au/__data/assets/pdf_file/0033/947148/g-covid-19.pdf

The COVID-19 Risk Communication Package for Healthcare Facilities (WHO, 2020).
https://www.who.int/docs/default-source/coronaviruse/risk-communication-for-healthcare-facilities.pdf?sfvrsn=2a5b0e0b_2

The rational use of personal protective equipment for COVID-19 (WHO, 2020).
https://apps.who.int/iris/bitstream/handle/10665/331215/WHO-2019-nCov-IPCPPE_use-2020.1-eng.pdf

Saudi MOH Protocol for Adults Patients Suspected of/Confirmed with COVID-19
https://www.moh.gov.sa/Ministry/MediaCenter/Publications/Documents/MOH-therapeutic-protocol-for-COVID-19.pdf

Discontinuation of Transmission-Based Precautions and Disposition of Patients with COVID-19 in Healthcare Settings.
https://www.cdc.gov/coronavirus/2019-ncov/hcp/disposition-hospitalized-patients.html

Ministry of Health Coronavirus Disease (COVID-19) Infection Guidelines V1.2 (March 2020).
https://www.moh.gov.sa/en/CCC/healthp/regulations/Documents/Novel%20Corona%20Virus%20Infection%20Guidelines.pdf

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Nursing Guidelines and Clinical Recommendations during the Coronavirus (COVID-19) Pandemic

Introduction

At the end of 2019, a novel coronavirus was identified as a respiratory disease caused by the corona virus in Wuhan, a province of China. It has spread from China to many other countries around the globe, including Saudi Arabia resulting in a global pandemic. Late February 2020, the World Health Organization designated the disease as the caused acute respiratory distress and high mortality rate.

Purpose

This guidance is targeted at providing information and clinical advice for nurses on Corona Virus Disease (COVID-19) regarding screening, prevention & infection control practice. It also highlights the recent guidelines for the management of patients and staff nurse involved in receiving, assessing, and caring for COVID-19 patients. The overall goals are to

- Provide general guidance on COVID-19.
- Reinforce surveillance of COVID-19 cases.
- Guide infection prevention and control (IPC) practices when managing suspected or confirmed COVID-19 cases to minimize cross-infection.
- Standardize the clinical management of COVID-19 patients.

Terms & Definitions

COVID-19: Is a new strain of coronavirus that has not been previously identified in humans. The new or "novel" coronavirus, now called COVID-19 (SARS-COV-2), had not previously detected before the outbreak was reported in Wuhan, China in December 2019.

Triage: The sorting out and classification of patients or casualties to determine priority of need and proper place of treatment During infectious disease outbreaks.

Transmission: The main route of transmission of COVID-19 is through respiratory droplets generated when an infected person coughs or sneezes. Via Droplets may also land on surfaces where the virus could remain viable for several hours to days.

Incubation period: Is the time from exposure to the development of symptoms of the virus is

estimated to be between 2 and 14 days.

Hand hygiene: A general term referring to any action of hand cleansing, antiseptic hand washing, antiseptic hand rubbing, or surgical hand antisepsis.

Droplets: Small particles of moisture that may be generated when a person coughs or sneezes or when water is converted to a fine mist by an aerator or shower head. Droplets may contain infectious microorganisms and tend to quickly settle out from the air; therefore, risk of disease transmission is generally limited to persons in close proximity to the droplet source.

Droplet precautions: Actions designed to reduce and prevent the transmission of pathogens spread through close respiratory or mucous membrane contact with respiratory secretions.

Fit Test: A fit test is test protocol conducted to verify that a respirator (N95 mask) is both comfortable and correctly fits the user.

Airborne precautions: transmission of infectious agents that remain infectious over long distances when suspended in the air.

Aerosol-generating procedures: (AGPs) are any medical and patient care procedure that results in the production of airborne particles (aerosols). AGPs can produce airborne particles which can remain suspended in the air, travel over a distance and may cause infection if they are inhaled. Therefore, AGPs create the potential for airborne transmission of infections that may otherwise only be transmissible by the droplet route.

Personal protective equipment (PPE) is a specialized clothing or equipment worn by an employee for protection against infectious materials.

Visual triage: The sorting out and classification of patients during infectious disease outbreak and determine priority of need and proper place, Covid19 triage is particularly important to separate patients likely to be infected with the pathogen of concern.

Outbreak: Is a major epidemic or pandemic can overwhelm the capacity of outpatient facilities, emergency departments (EDs), hospitals, and intensive care units, leading to critical shortages of staff, space, and supplies with serious implications for patient outcomes.

Social Distancing: Is the practice of increasing the space between individuals and decreasing the frequency of contact to reduce the risk of spreading a disease (ideally to maintain at least 6 feet between all individuals, even those who are asymptomatic).

Confirmed Case: A confirmed case has received a positive result from a COVID-19 laboratory test, with or without symptoms.

Suspected Case: A suspected case shows symptoms of COVID-19 but either has not been tested or is awaiting test results. If test results are positive, a suspected case becomes a

confirmed case.

ARI: Acute Respiratory infection

Polymerase chain reaction (PCR) : is a laboratory test kit for use in testing patient specimens for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). This test is intended for use with upper and lower respiratory specimens collected from persons who meet CDC criteria for COVID-19 testing.

Protected Exposure: nurse wearing whole PPE and exposed to infected blood or any fluids or secretion.

Unprotected Exposure: nurse missing some parts not wearing complete PPE e.g. surgical mask and exposed to infected blood or any fluids or secretion

Spill kit: is a collection of items, to be used in case of dealing with blood and body substances leak, secretions or discharge from patient

Section 1: Infection Prevention and Control and Surveillance Guidance

Early Recognition and Source Control:

- Encourage Nurses to have a high level of clinical suspicion.
- Activation of the respiratory triage area in key areas such as entrances of hospitals, clinics to screen patients and other area where necessary (e.g. Acute kidney unit).
- To follow the designated flowchart for acute respiratory illness in the hospital.
- The promotion of hand and respiratory hygiene is an essential 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 in the waiting area (Appendix I).
- LIMIT THE NUMBER OF NURSES WHO ENTER THE PATIENT'S ROOM to only those providing direct nursing care.
- Consider bundling care activities to minimize room entries.

Application of Standard Precautions for All Patients

- 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.
- Adequate staff training and specifically appropriate human behavior (Appendix C).
- 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 adequate and enough procedure.

- Manage laundry, food service utensils, and medical waste following safe routine procedures.
- Prevention of needle-stick or sharps injury.
- In addition to the standard precautions, all individuals, including family members, visitors, and nurses, should apply Droplet and Contact Precautions (Appendix B).
- Infection prevention and control precautions when caring for patients with suspected or confirmed COVID-19 (Appendix B & C).

Ensure the Following Respiratory Hygiene Measures:

- Offer a medical mask for suspected COVID-19 for those who can tolerate it.
- Cover nose and mouth during coughing or sneezing with a tissue or flexed elbow for others.

Droplet and Contact Precautions:

- EYE PROTECTION MUST be used for suspected COVID-19.
- 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 gown.
- MUST use the blue "impermeable" gown during swabbing or other procedures.
- 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 transport of patients out of the room or area unless medically necessary.
- Use designated portable X-ray equipment and/or other crucial diagnostic equipment.
- If transport is required, use pre-determined transport routes to minimize exposures to staff, other patients, and visitors and apply the surgical mask to the patient.
- Ensure that Nurses who are transporting patients wear appropriate PPE as described in this section and perform hand hygiene.
- Notify the receiving area of necessary precautions as soon as possible before patient's arrival.
- Routinely clean and disinfect patient-contact surfaces.
- Limit the number of nurses, family members, or visitors to contact a confirmed or suspected case.
- Maintain a record of all persons entering the patient's room, including all staff and visitors.

Aerosol-Generating Procedures for Suspected COVID-19 In Negative Pressure Rooms

Contact and airborne precautions must be implemented when performing any aerosol- generating procedures (AGP), which may be associated with an increased risk of infection transmissions. AGP include procedures such as nasopharyngeal swabbing (upper & lower), bronchoscopy, sputum induction, intubation, extubating, cardiopulmonary resuscitation, and open suctioning of airways.

- Use a fit-tested particulate respirator (certified N95).
- Always perform the seal-check when putting on a disposable particulate respirator (N95).
- If fit-tested N95 mask is not available or failed test, the HCW must be restricted from performing the aerosol-generating procedures unless using the Powered Air Purifying Respirator (PAPR).
- 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 gown and gloves, 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 airflow when using mechanical ventilation.
- Limit the number of persons present in the room to the absolute minimum required for the patient's care and support

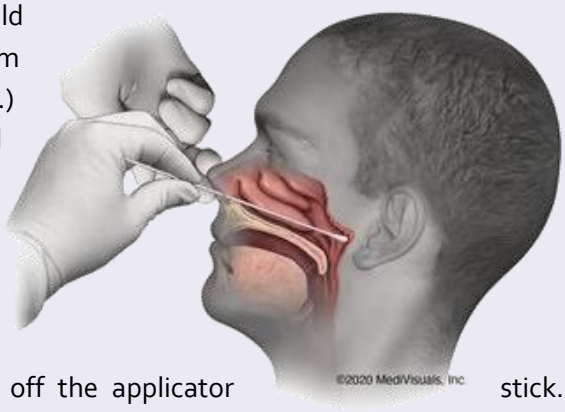
Section 2: Collection and handling of lab specimens from suspected COVID-19 patients

Samples to be collected:

1. Lower respiratory tract samples: including endotracheal aspirate, bronchoalveolar lavage fluid or sputum.
2. Upper respiratory tract samples:
    a. Nasopharyngeal and oropharyngeal swabs in viral transport medium in separate tubes.
    b. Nasopharyngeal wash/aspirate

TABLE 1 – 1 Procedure (Nasopharyngeal swab)
1. The Health Electronic Surveillance Network (HESN) request form must be completed first and should be attached with the sample. The lower respiratory tract samples are preferred and advised to be collected as possible. If patient does not have signs or symptoms of lower respiratory tract infection or lower tract specimens are not possible or clinically indicated, upper respiratory samples should be collected. Tilt patient's head back 70 degrees.

2. Insert swab into nostril. (Swab should reach depth equal to distance from nostrils to outer opening of the ear.) Leave swab in place for several seconds to absorb secretions.
3. Gently remove swab while rotating it. (Swab both nostrils with same swab)
4. Place tip of swab into sterile viral transport media tube and snap/cut off the applicator stick.



5. All samples collected for laboratory investigations should be regarded as potentially infectious.
6. Nurses who collect or transport clinical specimens should adhere rigorously to Standard Precautions to minimize the possibility of exposure to pathogens.
7. Ensure that Nurses who collect specimens use appropriate PPE (eye protection, medical mask, long-sleeved gown, gloves).
8. The respiratory specimen should be collected under the aerosol-generating procedure; personnel should wear a particulate certified N95 respirator.
9. Ensure that all personnel who transport specimens are trained in safe handling practices and spill decontamination procedures.
10. Place specimens for transport in leak-proof specimen bags (secondary container) that have a separate sealable pocket for the sample (i.e., a plastic biohazard specimen bag), with the patient's name label on the specimen container (primary container), and a written laboratory request form.
11. Ensure that healthcare facility laboratories adhere to appropriate biosafety practices and transport requirements according to the type of organism being handled.
12. Deliver all specimens by hand whenever possible.
13. DO NOT use pneumatic-tube systems to transport specimens.
14. Document the patient's full name, date of birth of suspected COVID-19 of potential concern clearly on the accompanying laboratory request form. Notify the laboratory as soon as possible that the specimen is being transported.

Storage of samples

1. Store samples at 2-8°C and ship on ice pack to NHL. 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.
2. Minimize the contact

TABLE 1 – 2 Shipment of samples

1. Samples can be shipped to NHL free of charge via the courier, SMSA, following appropriate regulations. The NHL provides a courier service 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).
2. All specimens must be appropriately packaged and must be addressed to the National Health Laboratory.
3. Courier services are provided 7 days a week.
4. 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.

Section 3: Visual Triage (Screening Questionnaire)

Nursing Visual Triaging

At screening points or nursing triage, by using Visual triage checklist form (Appendix D), the patients will be assessed with screening questions based on MOH guidelines and approved visual screening form including screening questions about COVID-19.

- All Visual Triage area e.g. acute kidney unit, with assigned nurse MUST be available 24/7, if a need to leave the visual triage desk, ask for a replacement.
- All patients must pass through the visual triage desk.
- Rapid identification of patients with Acute Respiratory Illness (ARI), applying appropriate infection control precautions & cough etiquette for source control.
- Assess & reassess in triage: when to take action regarding shifting patient from triage to admission:
    - Suspected COVID-19 case: score of 4 or more doctor must be informed and to be shifted to triage area in the facility.
    - If the patient is showing one or two symptoms 72 hrs. screening will be done and if the score reached
    - If visual triage admission scoring was 2 and after admission, the scoring is changed because of diarrhea, SOB, fever doctor to be informed and to be case the file, doctors to be informed.
- Patient to wear a surgical facemask and hand hygiene and accompanied by the triage nurse to the AIRBORNE INFECTION ISOLATION ROOM (AIIR). Also, attend to the companions.

- The companions should wear a surgical facemask and do hand hygiene, also to record their names and contact numbers.
- If ARI patients cannot be evaluated immediately, they should wait in a waiting area dedicated to ARI patients with spatial
- separation of at least 1-2 m between each ARI patient, when possible. Use barriers (like screens), if possible.

Waiting Area Measures

- Send patients to the appropriate waiting areas, which should be organized to divide patients with symptoms from patients without symptoms.
- Separate patients by at least 6 feet (one or two meters), and the area for patients with symptoms should be at least 6 feet away from the area for patients without symptoms
- mark chairs as fit for sitting and not fit to setting and chairs unfitted.
- Post information, that remind patients and visitors to practice cough etiquette and hand hygiene.
- Be alert for anyone that may have symptoms such as cough, fever, shortness of breath, and difficulty breathing.
- Provide supplies tissue, alcohol-based hand rub or soap, trash cans and water handwashing stations readily available for the use of healthcare workers, patients and visitors. If not inform supervisor.
- If waiting area has any reading materials, or other communal objects, remove them or clean them regularly.

Section 4: Disposal Procedures for Spills of COVID-19 Patient Blood/Fluids

1. For spills of a small volume (< 10 ml) of blood/bodily fluids you have two options:
    - **Option 1**: The spills should be covered with chlorine-containing disinfecting wipes (containing 5000 mg/L effective chlorine) and carefully removed, then the surfaces of the object should be wiped twice with chlorine-containing disinfecting wipes (containing 500 mg/L effective chlorine).
    - **Option 2**: Carefully remove the spills with disposable absorbent materials such as gauze, wipes, etc., which have been soaked in 5000 mg/L chlorine-containing disinfecting solution.
2. For spills of a large volume (> 1O ml) of blood and bodily fluids:

    Step 1 Place signs to indicate the presence of a spill.

    Step 2 Perform disposal procedures according to Option 1 or 2 described below:

- **Option 1**: Absorb the spilled fluids for 30 minutes with a clean absorbent towel (containing peroxyacetic acid that can absorb up to 1 L of liquid per towel) and then clean the contaminated area after removing the pollutants.
- **Option 2:** Completely cover the spill with disinfectant powder or bleach powder containing water-absorbing ingredients or completely cover it with disposable water-absorbing materials and then pour a sufficient amount of 10,000 mg/L chlorine-containing disinfectant onto the water-absorbing material (or cover with a dry towel which will be subjected to high-level disinfection). Leave for at least 30 minutes before carefully removing the spill.

3. Collect bodily fluids from patients into special containers:
4. Fecal matter, secretions, vomit, etc. from patients shall be collected into special containers and disinfected for 2 hours by a 20,000 mg/L chlorine-containing disinfectant at a spill-to-disinfectant ratio of 1:2.
5. After removing the spills, disinfect the surfaces of the polluted environment or objects.
6. The containers that hold the contaminants can be soaked and disinfected with 5,000 mg/L active chlorine-containing disinfectant for 30 minutes and then cleaned.
7. The collected pollutants should be disposed of as medical waste.
8. The used items should be put into double-layer medical waste bags and disposed of as medical waste.

Section 5: Midwifery Care with COVID-19 Patients

This section highlights the recent guidelines for the midwifery care for COVID-19 women and newborn:

- Midwives should follow the universal precaution with women suspected/confirmed with COVID-19 during their midwifery care.
- Midwives in contact with women confirmed positive with Covid-19 should use protective gears (minimum to include) face mask with eyes shield, gloves, head cover and disposal gowns as per infection control policies (see appendix C).
- Midwives handling women with corona virus should change all their clothing's (if they are not wearing protective gowns and head cover) and wash hands before handling another woman (kindly refer to the infection control policies and MOH COVID -19 disease guidelines).

Antenatal care

- Midwives should advise women to minimize the in-person antenatal visits to decrease the

exposure and support social distancing.

- Any pregnant woman diagnosed with COVID-19 should not attend antenatal clinic until she is cured.

Labour and birth care

- Intrapartum care should be provided in a way that is safe, with reference to minimum staffing requirements and the ability to provide emergency obstetric, anaesthetic and neonatal care where needed.
- Efforts should be made to minimize the number of staff members entering the room.
- Women suspected/confirmed with COVID-19 during labour and birth should be admitted to an isolation room and then the room should be disinfected right after the woman is discharged to the ward following the infection control measures.
- The neonatal team should be given sufficient notice at the time of birth, to allow them to attend and do PPE before entering the room.
- Midwives are advised when conducting normal vaginal birth to delay the rupture of membranes.
- Midwives should keep women suspected/confirmed with COVID-19 during labor, delivery and recovery in the same room.
- Placenta should be kept in a container that will be washed before handling to responsible department and labelled according to the infections control policies (kindly refer to the nursing guidelines for corona virus outbreak (COVID-19).

Postpartum care

- Midwives/nurses should encourage women to express breast milk (after appropriate breast and hand hygiene).
- Breast pumps and components should be thoroughly cleaned in between pumping sessions based on the manufacture guidelines that must include cleaning the pump with disinfectant wipes and washing pump attachments with hot soapy water.

Newborn care

- Midwives should carry out all non-urgent neonatal care and examination in isolation room e.g. weighing, immunization.
- All newborns delivered to a mother with suspected /confirmed with COVID-19 should be kept in isolation incubator.
- Isolation of those babies till they are declared clear from the virus or for 14 days.
- If the newborn is tested positive for COVID-19, it should be kept in isolation until it is cured or test negative (see appendix K).

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APPENDICES

Appendix A: Therapeutic Protocol for COVID-19 Patients (Confirmed & Suspected)

COVID-19 Testing*	Category	Supportive Care	Antiviral Therapy	Precautions
Suspicious Cases (follow case definition published in MOH guidelines)	**Mild to Moderate:** Symptoms with no shortness of breath	– Treat symptoms – If no hospital admission required, need to follow instructions and recommendations posted by Saudi Center for Disease Prevention and control https://covid19.cdc.gov.sa/professionals-health-workers/	– Not required	– Use paracetamol (acetaminophen) – Avoid Ibuprofen – Labs and work-up: CBC, Urea/Electrolytes, Creatinine, CRP, LFTs, Chest X-ray, COVID-19 PCR tests
	Mild to Moderate: Symptoms with shortness of breath in high risk patients· **Mild to Moderate:** Symptoms with no shortness of breath in high risk patients·	– Treat symptoms – If no hospital admission required, need to follow instructions and recommendations posted by Saudi Center for Disease Prevention and control https://covid19.cdc.gov.sa/professionals-health-workers/ – Consult Infectious Disease Specialist	– Case needs to be discussed with Infectious Disease Specialist, to initiate an empirical antiviral therapy, based on the potential delay to obtain results *If decision to treat empirically, follow the treatment option under confirmed by PCR*	– Admission to negative pressure room – Labs and work-up: CBC, Urea/Electrolytes, Creatinine, CRP, LFTs, Chest X-ray, COVID-19 PCR tests
PCR Confirmed Cases	**Asymptomatic**	– Follow instructions and recommendations posted by Saudi Center for Disease Prevention and control https://covid19.cdc.gov.sa/professionals-health-workers/	– Not required	– Use paracetamol (acetaminophen) – Avoid Ibuprofen – Labs and work-up: CBC, Urea/Electrolytes, Creatinine, CRP, LFTs, Chest X-ray, COVID-19 PCR tests
Confirmed Cases	**Mild to Moderate:** Symptoms (no O2requirement/no evidence of pneumonia)	– Treat symptoms – Consult Infectious Disease Specialist	– Consider starting hydroxychloroquine 400 mg every 12 hours for 1 day, followed by 200 mg BID up to Day 5 – If hydroxychloroquine is not available, consider chloroquine 600 mg (10mg/kg) at diagnosis and 300 mg (5 mg/kg) 12 hours later, followed by 300 mg (5 mg/kg) BID up to Day 5 or chloroquine phosphate 1000 mg at diagnosis and 500mg 12 hours later, followed by 300 mg BID up to day 5	**Hydroxychloroquine & Chloroquine** – Labs and work-up: Same as above with additional G6PD screening if chloroquine will be used – Perform ECG daily if initial QTc 450- 500 msec, and biochemistry according to underlying disease
Confirmed Cases	**Severe:** Symptoms 1 of the following: – Respiratory rate 30/min (adults); 40/min (children < 5) – Blood oxygen saturation 93% – PaO2/FiO2 ratio <300 – Lung infiltrates >50% of the lung field within 24-48 hours	– Treat symptoms – ICU admission, decision by ICU treating team – Consult Infectious Disease Specialist – Consider antibiotics or antifungals according to local antibiogram and institutional pneumonia management guidelines/pathway.	– Start hydroxychloroquine 400 mg every 12 hours for 1 day, followed by 200 mg BID up to Day 5 – If hydroxychloroquine is not available, consider chloroquine 600 mg (10mg/kg) at diagnosis and 300 mg (5 mg/kg) 12 hours later, followed by 300 mg (5 mg/kg) BID up to Day 5 or chloroquine phosphate 1000 mg at diagnosis and 500mg 12 hours later, followed by 300 mg BID up to day 5 – Consider combination therapy (Lopinavir/Ritonavir) 400/100 mg (= 2 tablets of 200/50 mg) BID and (hydroxy)chloroquine up to 10 days	**Lopinavir/ritonavir** – Labs and work-up: Same as above with additional G6PD screening if chloroquine will be used – Perform ECG daily if initial QTc 450- 500 msec, and biochemistry according to underlying disease – Avoid coadministration with drugs that are highly dependent on CYP3A for clearance or with potent CYP3A inducers (check MOH formulary) – Patients with renal and/or hepatic impairment
	Critical: Symptoms 1 of the following: – Acute Respiratory Distress Syndrome – Sepsis – Altered consciousness – Multi-organ failure	– Treat symptoms – ICU admission, decision by ICU treating team – Mechanical ventilation – Consult Infectious Disease Specialist – Specific prevention & treatment of ARDS – Secondary bacterial and opportunistic (Aspergillus) infections according to local antibiogram and institutional pneumonia management guidelines/pathway. – Prevention of subsequent lung fibrosis	– Consider combination therapy (Lopinavir/Ritonavir) 400/100 mg (= 2 tablets of 200/50 mg) BID and (hydroxy)chloroquine up to 10 days, crushed in nasogastric tube, at the same dosage and monitoring as above; replace with remdesivir if it becomes available – Remdesivir (compassionate use, once available) 200 mg loading dose (IV, within 30 min), followed by 100 mg once daily for 2 to 10 days – However, since the clinical efficacy of (hydroxy)chloroquine is not demonstrated, caution is required in case of kidney/ liver/cardiac failure, and abstention in such situations is preferred	**Remdesivir (non-formulary and non-SFDA registered)** – Inclusion criteria for the use of Remdesivir: ICU + confirmation SARS-Cov-2 by PCR + mechanical ventilation – Exclusion criteria for the use of Remdesivir - Evidence of multiorgan failure, need of inotropic, Creatinine clearance < 30 ml/min, dialysis/hemofiltration, transaminases > 5X ULN, or concomitant use of lopinavir/ritonavir drug – This means that most (if not all) patients in ICU will not be eligible.

NOTES:

(Hydroxy)chloroquine and lopinavir/ritonavir are registered medications in Saudi Arabia and available in MoH formulary for other indications but have not shown proven efficacy in randomized clinical trials as of yet

The use of the above medication is off-labeled and shall follow the process of filling (Unlicensed/Unapproved Use of Medications form) available in MoH electronic formulary

Pregnancy and Lactation: Management of infection with SARS-COV2 in pregnancy is mainly based on supportive care. Consideration of antiviral therapy should be based on patient condition, safety profile and preference of the patient and treating team

Abbreviations:

COVID-19: Coronavirus Disease 2019, CBC: Complete Blood Count, CRP: C-Reactive Protein, LFT: Liver Function Test, PCR: Polymerase Chain Reaction, ECG: Electrocardiogram, G6PD: Glucose-6-Phosphate Dehydrogenase

Footnotes:

*Testing for SARS-COV2 virus shall be performed in accordance with published case definition by Saudi CDC guidelines.

·High risk patients have one or more: 1. Elderly (age > 65 years), 2. With underlying end organ dysfunction, 3. Diabetic, 4. History of cardiovascular disease, 5. History of pulmonary disease, 6. Immunocompromised, and/or 7. Pregnant

Disclaimer:

This is a living guidance that is subject to change as more evidence accumulates. It will be updated regularly whenever needed. The guidance should be used to assist healthcare practitioners select the best available antiviral therapy for COVID-19 infection according the best available and current evidence and is not intended to replace clinical judgement but rather to complement it.

Please check the following link for updated version:
https://www.moh.gov.sa/Ministry/MediaCenter/Publications/Documents/MOH-therapeutic-protocol-for-COVID-19.pdf

Appendix B: Recommended types of PPEs

Table 1. Recommended type of personal protective equipment (PPE) to be used in the context of COVID-19 disease, according to the setting, personnel and type of activity

Setting	Target personnel or patients	Activity	Type of PPE or procedure
Health care facilities **Inpatient facilities**			
Patient room	Health care workers	Providing direct care to COVID19 patients	Medical mask Gown Gloves Eye protection (goggles or face shield)
		Aerosol-generating procedures performed on COVID-19 patients	Respirator N95 or FFP2 standard, or equivalent. Gown Gloves Eye protection Apron
	Cleaners	Entering the room of COVID-19 patients	Medical mask Gown Heavy duty gloves Eye protection (if risk of splash from organic material or chemicals) Boots or closed work shoes
	Visitors[b]	Entering the room of a COVID19 patient	Medical mask Gown Gloves
Other areas of patient transit (e.g. wards, corridors).	All staff, including health care workers.	Any activity that does not involve contact with COVID-19 patients	No PPE required
Triage	Health care workers	Preliminary screening not involving direct contact[c.]	Maintain spatial distance of at least 1 metre. No PPE required
	Patients with respiratory symptoms	Any	Maintain spatial distance of at least 1 metre. Provide medical mask if tolerated by patient.
	Patients without respiratory symptoms	Any	No PPE required
Laboratory	Lab technician	Manipulation of respiratory samples	Medical mask Gown

			Gloves Eye protection (if risk of splash)
	All staff, including health care workers.	Administrative tasks that do not involve contact with COVID-19 patients.	No PPE required
Outpatient facilities			
Consultation room	Health care workers	Physical examination of patient with respiratory symptoms	Medical mask Gown Gloves Eye protection
	Health care workers	Physical examination of patients without respiratory symptoms	PPE according to standard precautions and risk assessment.
	Patients with respiratory symptoms	Any	Provide medical mask if tolerated.
	Patients without respiratory symptoms	Any	No PPE required
	Cleaners	After and between consultations with patients with respiratory symptoms.	Medical mask Gown Heavy duty gloves Eye protection (if risk of splash from organic material or chemicals). Boots or closed work shoes
Waiting room	Patients with respiratory symptoms	Any	Provide medical mask if tolerated. Immediately move the patient to an isolation room or separate area away from others; if this is not feasible, ensure spatial distance of at least 1 metre from other patients.
	Patients without respiratory symptoms	Any	No PPE required
Administrative areas	All staff, including health care workers	Administrative tasks	No PPE required
Triage	Health care workers	Preliminary screening not involving direct contact[c.]	Maintain spatial distance of at least 1 metre. No PPE required
	Patients with respiratory symptoms	Any	Maintain spatial distance of at least 1 metre. Provide medical mask if tolerated.
	Patients without respiratory symptoms	Any	No PPE required
Community			
Home	Patients with respiratory symptoms	Any	Maintain spatial distance of at least 1 metre.

			Provide medical mask if tolerated, except when sleeping.
	Caregiver	Entering the patient's room, but not providing direct care or assistance	Medical mask
	Caregiver	Providing direct care or when handling stool, urine, or waste from COVID-19 patient being cared for at home	Gloves Medical mask Apron (if risk of splash)
	Health care workers	Providing direct care or assistance to a COVID-19 patient at home	Medical mask Gown Gloves Eye protection
Public areas (e.g. schools, shopping malls, train stations).	Individuals without respiratory symptoms	Any	No PPE required
Points of entry			
Administrative areas	All staff	Any	No PPE required
Screening area	Staff	First screening (temperature measurement) not involving direct contact[c.]	Maintain spatial distance of at least 1 metre. No PPE required
	Staff	Second screening (i.e. interviewing passengers with fever for clinical symptoms suggestive of COVID-19 disease and travel history)	Medical mask Gloves
	Cleaners	Cleaning the area where passengers with fever are being screened	Medical mask Gown Heavy duty gloves Eye protection (if risk of splash from organic material or chemicals). Boots or closed work shoes
Temporary isolation area	Staff	Entering the isolation area, but not providing direct assistance	Maintain spatial distance of at least 1 metre. Medical mask Gloves
	Staff, health care workers	Assisting passenger being transported to a health care facility	Medical mask Gown Gloves Eye protection
	Cleaners	Cleaning isolation area	Medical mask Gown Heavy duty gloves Eye protection (if risk of splash from organic material or chemicals).

			Boots or closed work shoes
Ambulance or transfer vehicle	Health care workers	Transporting suspected COVID19 patients to the referral health care facility	Medical mask Gowns Gloves Eye protection
	Driver	Involved only in driving the patient with suspected COVID19 disease and the driver's compartment is separated from the COVID-19 patient	Maintain spatial distance of at least 1 metre. No PPE required
		Assisting with loading or unloading patient with suspected COVID-19	Medical mask Gowns Gloves Eye protection
		No direct contact with patient with suspected COVID-19, but no separation between driver's and patient's compartments	Medical mask
	Patient with suspected COVID19.	Transport to the referral health care facility.	Medical mask if tolerated
	Cleaners	Cleaning after and between transport of patients with suspected COVID-19 to the referral health care facility.	Medical mask Gown Heavy duty gloves Eye protection (if risk of splash from organic material or chemicals). Boots or closed work shoes
Special considerations for rapid-response teams assisting with public health investigations[d]			
Community			
Anywhere	Rapid-response team investigators	Interview suspected or confirmed COVID-19 patients or their contacts.	No PPE if done remotely (e.g. by telephone or video conference). Remote interview is the preferred method.
		In-person interview of suspected or confirmed COVID-19 patients without direct contact	Medical mask Maintain spatial distance of at least 1 metre. The interview should be conducted outside the house or outdoors, and confirmed or suspected COVID-19 patients should wear a medical mask if tolerated.
		In-person interview with asymptomatic contacts of COVID-19 patients	Maintain spatial distance of at least 1 metre. No PPE required The interview should be performed outside the house or outdoors. If it is necessary to enter the household

			environment, use a thermal imaging camera to confirm that the individual does not have a fever, maintain spatial distance of at least 1 metre and do not touch anything in the household environment.

Source: https://apps.who.int/iris/bitstream/handle/10665/331215/WHO-2019-nCov-IPCPPE_use-2020.1-eng.pdf

Note:

a. In addition to using the appropriate PPE, frequent hand hygiene and respiratory hygiene should always be performed. PPE should be discarded in an appropriate waste container after use, and hand hygiene should be performed before putting on and after taking off PPE.

b. The number of visitors should be restricted. If visitors must enter a COVID-19 patient's room, they should be provided with clear instructions about how to put on and remove PPE and about performing hand hygiene before putting on and after removing PPE; this should be supervised by a health care worker.

c. This category includes the use of no-touch thermometers, thermal imaging cameras, and limited observation and questioning, all while maintaining a spatial distance of at least 1 m.

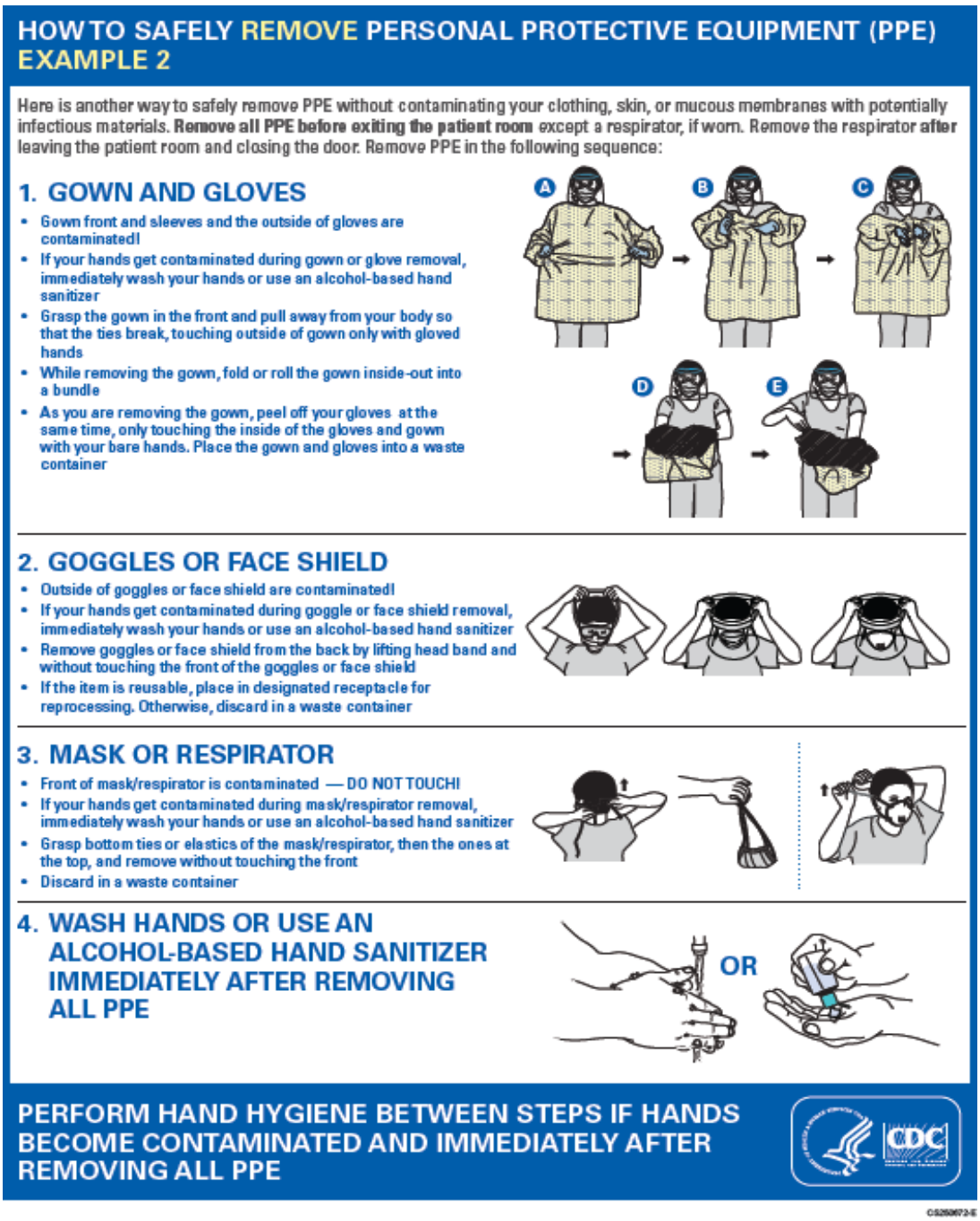
d. All rapid-response team members must be trained in performing hand hygiene and how to put on and remove PPE to avoid self-contamination.

e. For PPE specifications, refer to WHO's disease commodity package. https://www.who.int/publications-detail/disease-commodity-package---novel-coronavirus-(ncov)

Appendix C: Sequence for Putting On & Removing Personal Protective Equipment (PPE)

Table 1: Sequence for Putting On PPE.

Table 2: Sequence for Removing PPE.



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Appendix D: Visual triage Checklist

Date: Time

Name: Hospital:

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

Risks for Acute Respiratory Illnesses	**Score**	
A. Exposure Risks	***Any Patient (Adult or Pediatric)***	
A history of travel abroad during the 14 days prior to symptom onset. **OR** Visiting or being a resident of a high-risk area for COVID-19 in the kingdom during the 14 days prior to symptom onset*. **OR** A close physical contact with a confirmed case of COVID-19 or MERS-CoV in the past 14 days. **OR** An exposure to camel or camel's products (direct or indirect**) in the past 14 days. **OR** Working in a healthcare facility.	**3**	
B. Clinical Signs and Symptoms and Medical History	***Pediatric***	***Adult***
1. Fever or recent history of fever.	**1**	**2**
2. Cough (new or worsening).	**1**	**2**
3. Shortness of breath (new or worsening).	**1**	**2**
4. Nausea, vomiting, and/or diarrhea.	**-**	**1**
5. Chronic renal failure, CAD/heart failure, Immunocompromised patient.	**-**	**1**
Total Score		

* As determined and announced by the Ministry of Interior or Ministry of Health. Updated regularly on: www.covid19.cdc.gov.sa

** Patient or household

A score ≥ 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 be only done according to case definitions.

Staff name: _____ Signature: _____

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Appendix E: Reporting of suspected COVID-19 form

نموذج الإبلاغ الفوري لحالة مشتبهة بفيروس الكورونا الجديد 2019 في المملكة العربية السعودية
Immediate* reporting form for a suspected case with 2019-nCoV in Saudi Arabia

Date of reporting: dd/mm/yy Time: Reporting person: Reporting facility: Reporting address: Reporting contact number:	تاريخ الإبلاغ: يوم/شهر/سنه وقت الإبلاغ: إسم المبلغ: الجهة المبلغة: عنوان المبلغ/الجهة: رقم التواصل للمبلغ/الجهة:
Suspected case information** Name: Sex: Date of birth: dd/mm/yyyy Age: Nationality: ID number: ID type: Contact number(s): Address: Healthcare worker: □Yes □ No (specify occupation)	**معلومات الحالة المشتبهة**** الإسم: تاريخ الميلاد: يوم/شهر/سنه العمر: الجنسية: الجنس: رقم الهوية/الجواز: نوع الهوية: رقم التواصل: العنوان: عامل في الرعاية الصحية: □ نعم □ لا (الرجاء تحديد المهنة)
Does the case has any of the following symptoms? Fever (or T ≥38 C°)? □ Yes, onset: dd/mm/yyyy □ No With cough? □ Yes, onset: dd/mm/yyyy □ No And/Or shortness of breath? □ Yes, onset: dd/mm/yyyy □ No Other (specify) Onset: dd/mm/yyyy Other (specify) Onset: dd/mm/yyyy Other (specify) Onset: dd/mm/yyyy Other (specify) Onset: dd/mm/yyyy	**هل الحالة المشتبهة لديها أي من الأعراض التالية؟** سخونة (أو درجة حرارة ≤٣٨ C°)؟ □ نعم، إبتداءً من: يوم/شهر/سنه □ لا مع سعال (كحة)؟ □ نعم، إبتداءً من: يوم/شهر/سنه □ لا و/أو ضيق في التنفس؟ □ نعم، إبتداءً من: يوم/شهر/سنه □ لا أخرى (حدد) إبتداءً من: يوم/شهر/سنه أخرى (حدد) إبتداءً من: يوم/شهر/سنه أخرى (حدد) إبتداءً من: يوم/شهر/سنه أخرى (حدد) إبتداءً من: يوم/شهر/سنه
AND did the case had any of the following within 14 days before symptom onset: 1. Travel to or live in China? □ Yes, last date: dd/mm/yyyy location: □ No 2. A close contact*** with a confirmed case of 2019-nCoV infection? □ Yes, last date: dd/mm/yyyy location: □ No	**وهل لدى الحالة المشتبهة أي من التالي خلال 14 يوماً قبل ظهور الأعراض:** 1. سفر إو إقامة بجمهورية الصين الشعبية؟ □ نعم، آخر تاريخ: يوم/شهر/سنه المكان: □ لا 2. إتصال وثيق*** مع حالة مؤكدة مصابة بفيروس كورونا الجديد ٢٠١٩؟ □ نعم، آخر تاريخ: يوم/شهر/سنه المكان: □ لا

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Appendix F: Home Isolation of Stable Patients/Contacts Assessment Checklist and Instructions

Page 1	
Date:	Tracking ID/Bar Code
Patient Last Name:	First Name:
Address:	Telephone #:
Primary Caregiver Last Name:	First Name:
Telephone #:	
Inspectors Last Name	First Name:
Type of Home ○ Single Family/Single Unit ○ Single Family/Multiple Unit ○ Single Family/Apartment ○ Other: _____	
Number of Occupants in home: _____	
Residence Description ○ Number of Bedrooms ○ Number of Bathrooms ○ Central Air Conditioning	
Page 2	

Item	Yes	No	Comment
Is a household member available to be the patient's? primary caregiver?			
Is there a separate bedroom available to be used only by? the COVID-19 patient during the isolation period?			
Does the bedroom have an openable window?			
Do walls from adjacent rooms physically separate the bedroom?			
Does the bedroom have a door that can be kept closed?			
Does the residence have a designated bathroom for the COVID-19 patient			
Does the residence have electricity and running water?			
Does the residence have a functioning telephone?			
Does the residence have a central air conditioning unit that services the COVID-19 patient's room?			
Does the residence have a window air conditioning unit that services the COVID-19 patient's room?			
If a central air conditioning unit is in place, has the system been modified to prevent air from the COVID-19 patient's room from circulating throughout the residence?			
Is a sign posted on the patient's door restricting access only to the caregiver?			
Have other occupants been relocated (if possible)?			
Has a contingency for emergencies been developed (e.g.who to notify)?			

Has the caregiver and patient been instructed on the proper procedures for disposing of waste materials and laundering?			
Has the caregiver been instructed on how to clean the COVID-19 patient's room?			
Are sufficient gloves, surgical masks, and disinfectant available at the residence?			
Has the patient been instructed to restrict his mobility and take precautions (e.g., surgical mask)?			

Appendix G: Assessment & Reassessment Tool for Nurses Exposure

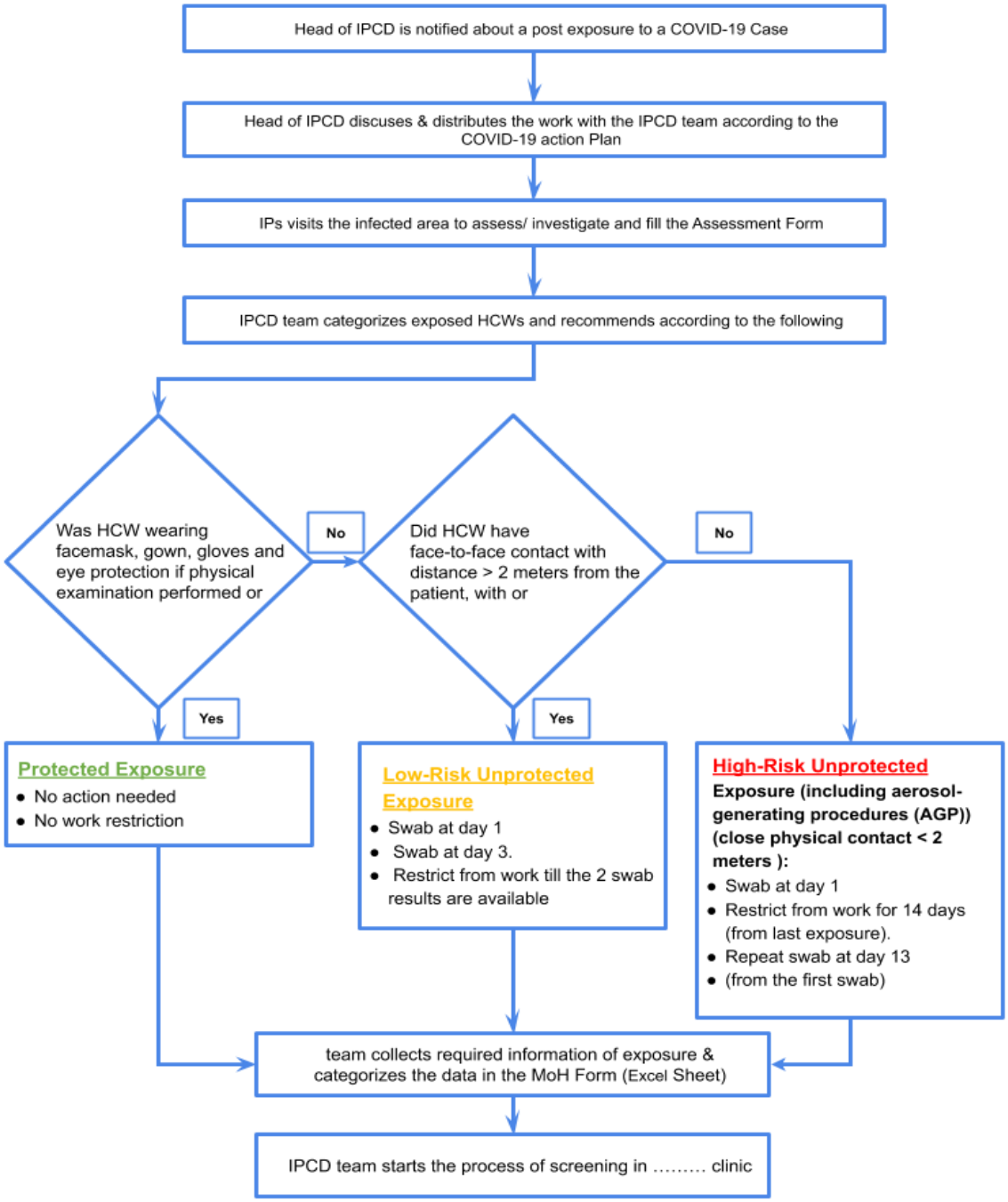
Assessment & Reassessment tools and Management of Health Care Workers (Nurses) exposed to COVID-19 virus

1. Interviewer information	
Interviewer name:	
Interview date (DD/MM/YYYY): _____/ _____/ _____	
Interviewer phone number:	
Does the nurse have a history of staying in the same household or classroom environment with a confirmed COVID-19 patient?	□ Yes □ No
2. HCW information	
Name:	
Contact details (phone number):	
Type of health care personnel:	
3. HCW interactions with COVID-19 patient information	
Date of nurse first exposure to confirmed COVID-19 patient:	(DD/MM/YYYY): _____/ _____/ _____ □ Unknown
4. HCW activities performed on COVID-19 patient in a health care facility	
Did HCW provide direct care to a confirmed COVID-19 patient?	□ Yes □ No □ Unknown
Did HCW have face-to-face contact (within 2 meters) with a confirmed COVID-19 patient in a health care facility?	□ Yes □ No □ Unknown
Did nurse have direct contact with the environment where the confirmed COVID-19 patient was cared for? E.g., bed, linen, medical equipment, bathroom, etc.	□ Yes □ No □ Unknown
5. Adherence to IPC procedures during health care interactions and Recommendation:	
1.Protected Exposure: Was nurses wearing facemask, gown, and gloves and eye protection if physical examination performed or nasopharyngeal swabbing done?	□ Yes □ No
Recommendation	□ No action needed □ No work restriction
2.High-Risk Unprotected Exposure (including aerosol- generating	

procedures (AGP)) (close physical contact < 2 meters): Was HCW wearing any of the following, facemask (N95 mask in AGP), gown or gloves or eye protection if physical examination performed or nasopharyngeal swabbing done:	□ Yes □ No
Recommendations	Swab on day 1 Restrict from work for 14 from last exposure. Repeat swab at day 13 (from the first swab)
3.Low-Risk Unprotected Exposure (Distance > 2 meters from the patient, with or without PPE/hand hygiene):	
Recommendation	Swab on day 1 Swab on day 3. Restrict from work till the 2 swab results are available

Name of Infection Preventions: _____ **Date:** _____

Appendix H: Flowchart for Management of Post Exposure to COVID-19 Case.



Source:https://apps.who.int/iris/bitstream/handle/10665/331496/WHO-2019-nCov-HCW_risk_assessment-2020.2-eng.pdf

Appendix I: Waiting Area Features

Source: https://www.who.int/docs/default-source/coronaviruse/risk-communication-for-healthcare-facilities.pdf?sfvrsn=2a5b0e0b_2

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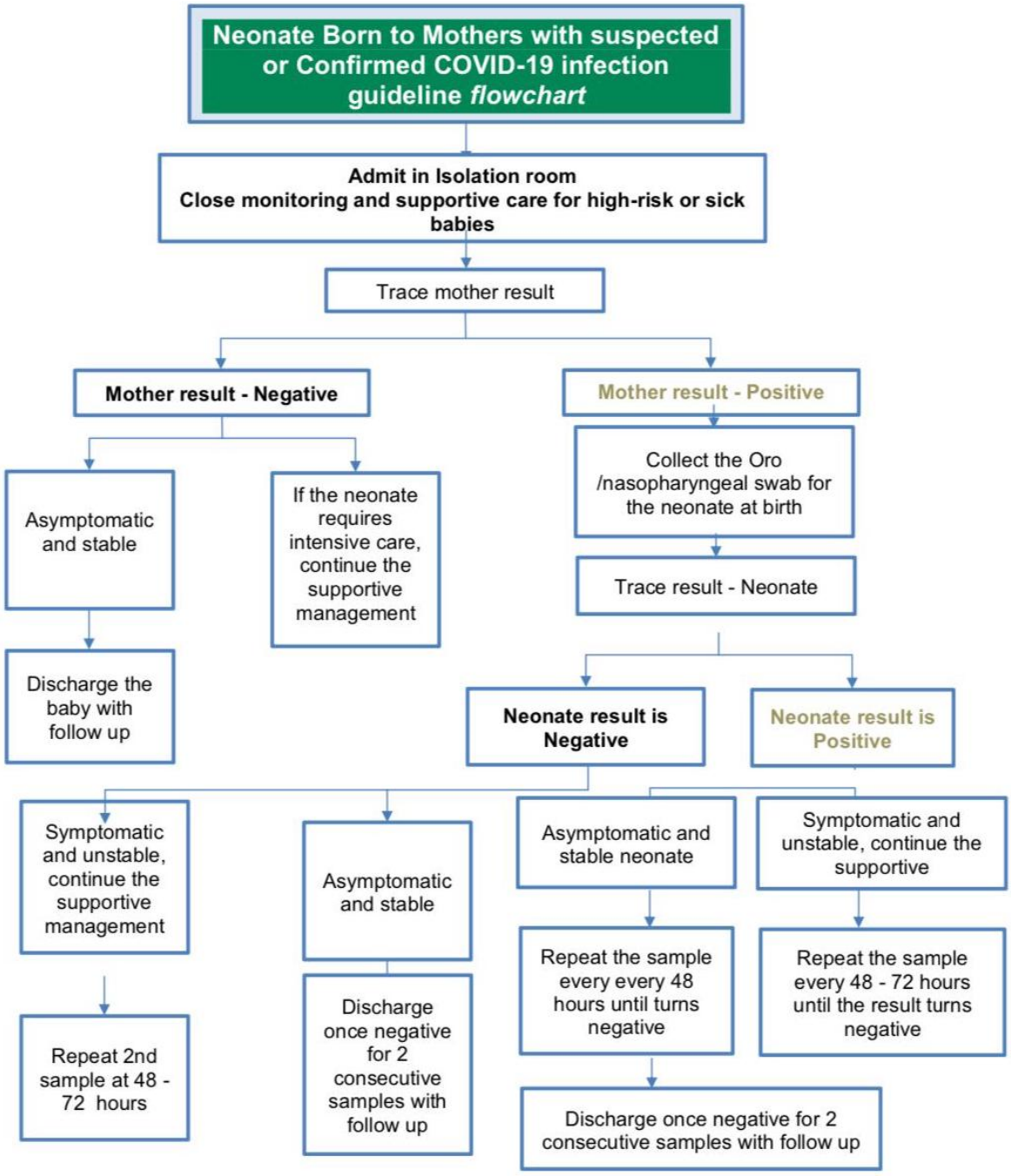
Appendix J: Nurse COVID19 Competency Checklist

Nurse Name: _____ ID: _____						
Job Title:			**Unit`s Name:**			
Evaluator (Educator/Preceptor) Name:						
Period	**From:**			**To**		
Key						
Competency Method:	Outcome/ Evaluation					
SL= Demonstrate, Performed & Checked-Off in Skill Lab	√ = Objective Met					
PA = Performed & Checked-Off in a Real Patient	X = Objective Not Met					
PR= Policy Review						
OD= Oral Discussion		**Purpose: To provide the necessary information regarding COVID-19 to ensure safe practice and maintain healthcare worker safety**				
Co= Attended Specialized Course						
WT= Written Test						
OM= Online Module/ Assignment (e.g. Mosby/ Portal)						
Objectives	**Competency Method**	**Covered Through**	**Responsible Person**	**Date**	**Outcome**	**Initials**
Standards Infection Control Precautions for COVID 19 Pts:						
Case Definition of confirmed COVID 10 /Signs and Symptoms						
State the method of scoreing/Isolation precautions/risk exposure if of suspect COVID-19						
Discuss the pathway for suspect COVID 19 patient						
Discuss the airborne isolation for COVID 19 patient						
Ensure Environment disinfecting/cleaning between and after each patient						
Demonstrate correct Hand Hygiene technique						
Demonstrate correct Respiratory etiquette techniques						
Demonstration of Donning and Doffing of PPEs						
Isolation precautions, types, requirements needed						
Definition and notification of COVID-19						
Management of suspected versus confirmed COVID-19 cases and use of the flow chart and form for screening.						
Completed N95 mask fit testing Date:_____ Size:_____						
Demonstrate collecting Nasopharyngeal swab and sample collection						

Waste Disposal and Housekeeping principles						
Ensure proper cleaning of equipment between patients						
Monitoring dietary and pharmacy interactions to reduce contact with suspected and confirmed cases						
Know your hospital protocol for watcher and family visit for your unit/ward.						

Appendix K: Antenatal in-person visits types & restrictions


Neonate Born to Mothers with suspected or Confirmed COVID-19 infection guideline *flowchart*
Admit in Isolation room
Close monitoring and supportive care for high-risk or sick babies
Trace mother result
Mother result - Negative
Mother result - Positive
Asymptomatic and stable
If the neonate requires intensive care, continue the supportive management
Collect the Oro /nasopharyngeal swab for the neonate at birth
Trace result - Neonate
Discharge the baby with follow up
Neonate result is Negative
Neonate result is Positive
Symptomatic and unstable, continue the supportive management
Asymptomatic and stable
Asymptomatic and stable neonate
Symptomatic and unstable, continue the supportive
Repeat 2nd sample at 48 - 72 hours
Discharge once negative for 2 consecutive samples with follow up
Repeat the sample every every 48 hours until turns negative
Repeat the sample every 48 - 72 hours until the result turns negative
Discharge once negative for 2 consecutive samples with follow up

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