

Infection prevention and control in healthcare facilities to prevent Novel Corona Virus

PURPOSE: To prevent spread of COVID 19 DISEASE in healthcare facilities.

FOR: HEALTHCARE FACILITY MANAGEMENT

Strategies to prevent or limit transmission in healthcare settings include the following:

- Ensuring triage, early recognition, and source control (isolating patients with suspected nCoV infection)
- Applying standard precautions for all patients
- Implementing empiric additional precautions (droplet and contact and, whenever applicable, airborne precautions) for suspected cases of nCoV infection
- Implementing administrative controls
- Using environmental and engineering controls.

To facilitate the early identification of cases of suspected nCoV infection, healthcare facilities should:

- Encourage HCWs to have a high level of clinical suspicion
- Establish a well-equipped triage station at the entrance of health care facility, supported by trained staff
- Institute the use of screening questionnaires according to the updated case definition
- Post signs in public areas reminding symptomatic patients to alert HCWs

Personal Protective Equipment for Health Care Worker

- The rational, correct, and consistent use of PPE also helps to reduce the spread of pathogens
- The use of PPE effectiveness strongly depends on adequate and regular supplies, adequate staff training, appropriate hand hygiene and specifically appropriate human behavior

Environmental cleaning & Disinfection:

- Environmental cleaning and disinfection procedures are followed consistently and correctly. Thoroughly cleaning environmental surfaces with water and detergent and applying commonly used hospital-level disinfectants (such as sodium hypochlorite) are effective and sufficient procedures.
- Medical devices and equipment, laundry, food service utensils and medical waste should be managed in accordance with safe routine procedures.

Clinical triage:

a system for assessing all patients at admission allowing early recognition of possible COVID-19 patients and immediate isolation of patients with suspected COVID-19 infection in an area separate from other patients (source control).

Objectives:

- To facilitate the early identification of cases of suspected COVID-19
- Separation of suspected COVID-19 from general patients to limit the transmission of infection

Target population

- COVID 19 suspected case (fever, cough with or without respiratory distress and travel/exposure history)

Manpower

- Nurse/SACMO/outdoor staff/ward boy

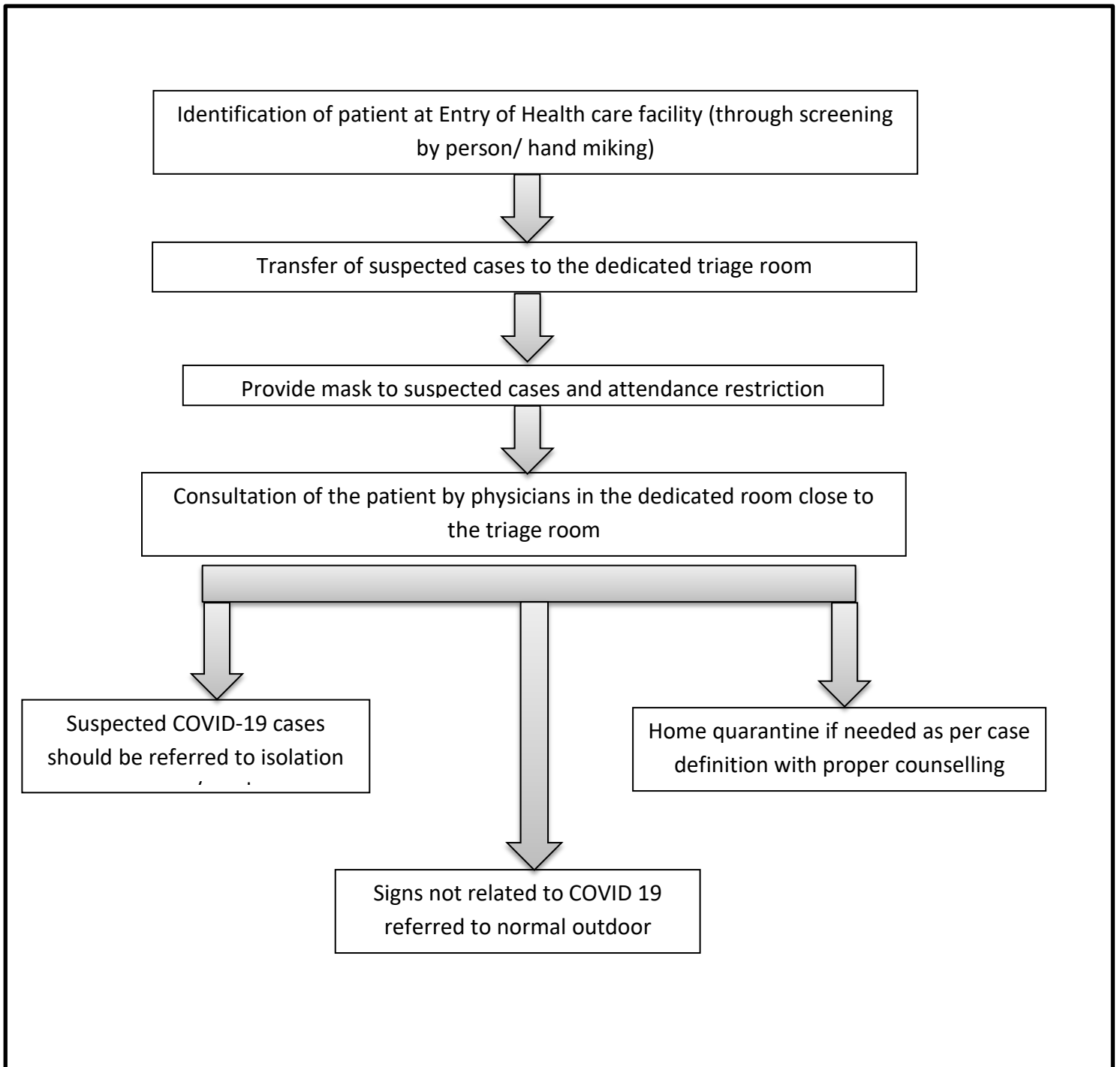
Logistics required

- Thermometer
- Masks for suspected Covid19 cases
- Tissues
- Disposal bags with bin
- Personal protective equipment for health care staffs according to IPC guideline (gloves, masks and/or respirators, gowns)
- Hand hygiene supplies (Soap and running water; hand sanitizer).

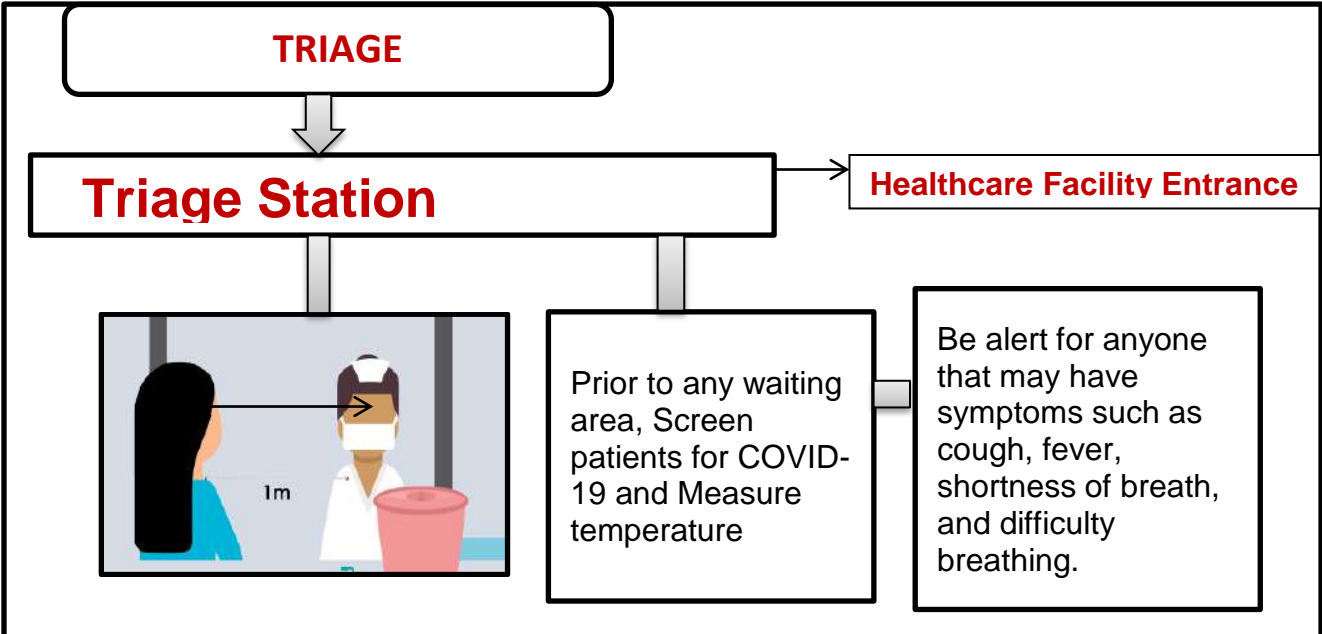
Infrastructure

- A well ventilated separate **triage room**
 - Sitting arrangement (preferably at least 1 meter distance)
 - Dedicated wash room with hand wash facilities
- One way entrance and exits
- Dedicated out door with assigned HCPs and ticket counter
- Citizen chartered

Total Flow Chart of Triage of COVID 19

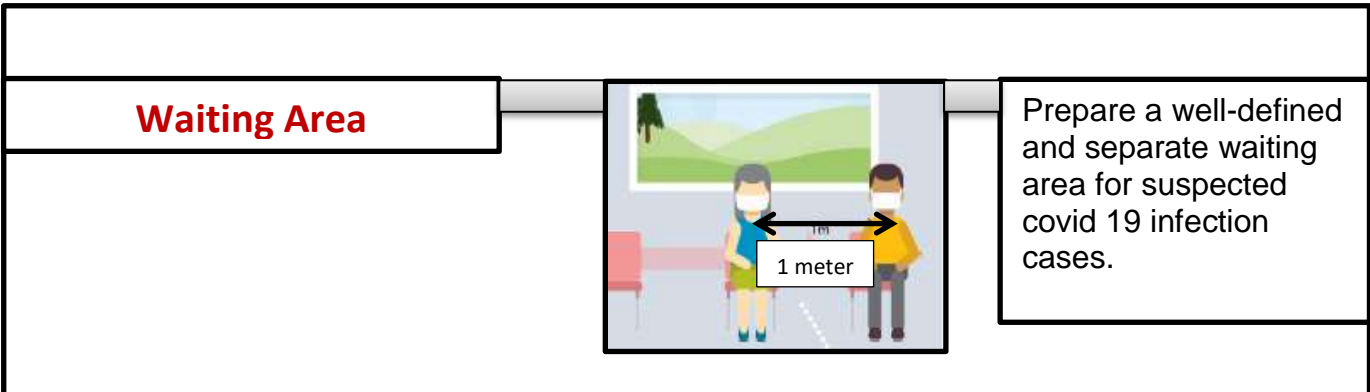


Preparation at Healthcare Facility



Personal Protection at the Triage station

- Staff should wear appropriate personal protective equipment at the triage station.
- Provide medical masks to all patients presenting with flu-like symptoms or reporting possible COVID-19 infection
- Remind all patients to use good respiratory and hand hygiene
- Have alcohol-based hand rub or soap and water, hand washing stations readily available for the use of healthcare workers, patients and visitors.



- Ensure that all patients cover their nose and mouth with a tissue or elbow when coughing or sneezing;
- Offer a medical mask to patients with suspected 2019-nCoV infection while they are in waiting/public areas or in cohorting rooms;
- Perform hand hygiene after contact with respiratory secretions

Clinical Management and Admission criteria

- Patients with a mild clinical presentation may not initially require hospitalization.
- However, clinical signs and symptoms may worsen with progression to lower respiratory tract disease in the second week of illness.
- All patients should be monitored closely.
- Possible risk factors for progressing to severe illness may include, but are not limited to, older age, and underlying chronic medical conditions such as lung disease, cancer, heart failure, cerebrovascular disease, renal disease, liver disease, diabetes, immunocompromising conditions, and pregnancy.
- The decision to monitor a patient in the inpatient or outpatient setting should be made on a case-by-case basis.
- This decision will depend not only on the clinical presentation, but also on the patient's ability to engage in monitoring, home isolation, and the risk of transmission in the patient's home environment.

Discontinuation of transmission based precaution/Discharge Criteria

The decision to discontinue for hospitalized patients with COVID-19 should be made on a case-by-case basis in consultation with clinicians, infection prevention and control specialists, and public health officials. This decision should consider disease severity, illness signs and symptoms, and results of laboratory testing for COVID-19 in respiratory specimens.

Considerations to discontinue Transmission-Based Precautions include all of the following:

- Resolution of fever, without use of antipyretic medication
- Improvement in illness signs and symptoms
- Negative results of an FDA Emergency Use Authorized molecular assay for COVID-19 from at least two consecutive sets of paired nasopharyngeal and throat swabs specimens collected ≥ 24 hours apart (total of four negative specimens—two nasopharyngeal and two throat)

Protecting yourself from COVID 19 (Personal protective equipment- PPE)

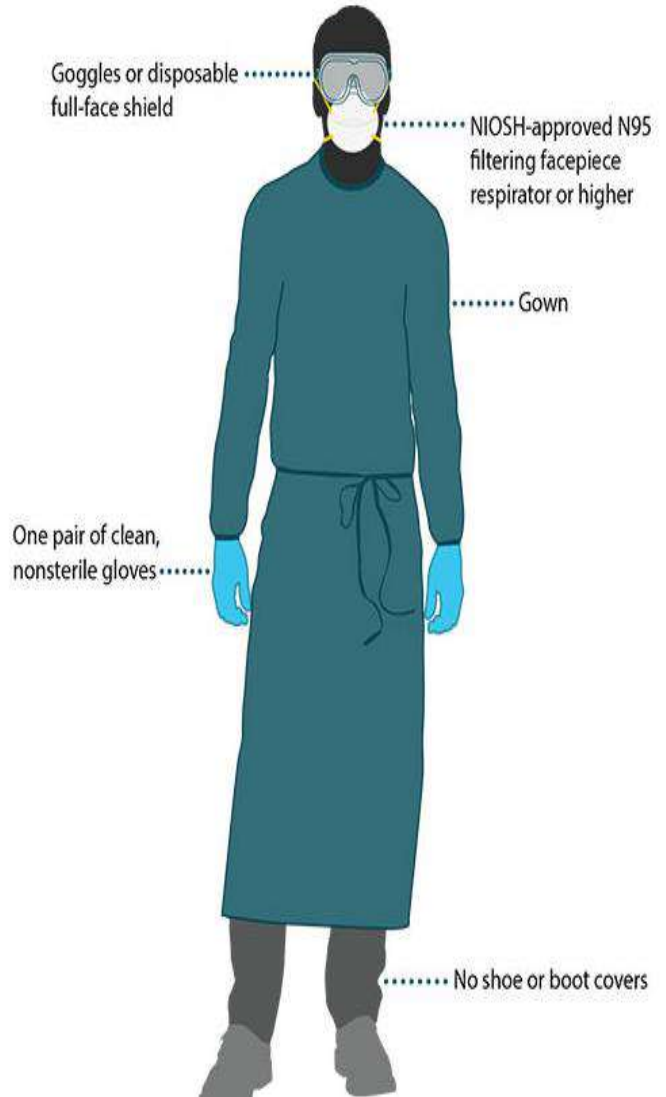
When entering a room with a suspected or confirmed COVID-19 patient, put on:

- Disposable gloves
- A clean, long-sleeve gown
- Medical mask that covers your mouth and nose
- Eye protection such as goggles
- The use of boots, coverall and apron is not required during routine care;

If performing an aerosol generating procedure, such as intubation, use a **Fit tested** particulate respirator such as an **N95 – do a seal check!**

- A new set of PPE's is needed, when care is given to a different patient
- Equipment should be either single-use and disposable or dedicated equipment (e.g., stethoscopes, blood pressure cuffs and thermometers), should not be reused
- If equipment needs to be shared among patients, clean and disinfect it between use for each individual patient (e.g., by using ethyl alcohol 70%)

Don't touch your eyes, nose or mouth with gloves or bare hands until proper hand hygiene has been performed.



Attention!

- If utilizing single-use personal protective equipment (e.g. single-use masks, gloves, face shields) dispose in a waste bin with a lid and wash your hands thoroughly.
- Manage laundry, food service utensils and medical waste in accordance with safe routine procedures.

My 5 Moments for Hand Hygiene

Use alcohol-based hand rub or wash hands with soap and water:

1. Before touching a patient
2. Before engaging in clean/aseptic procedures
3. After body fluid exposure risk
4. After touching a patient
5. After touching patient surroundings

Correct use of medical masks derives from the practices in healthcare settings

- a. Place mask carefully to cover mouth and nose and tie securely to minimize any gaps between the face and the mask;
- b. While in use, avoid touching the mask;
- c. Remove the mask by using appropriate technique (i.e. do not touch the front but remove the lace from behind);
- d. After removal or whenever you inadvertently touch a used mask, clean hands by using an alcohol-based hand rub or soap and water if visibly soiled
- e. Replace masks with a new clean, dry mask as soon as they become damp/humid;
- f. Do not re-use single-use masks
- g. Discard single-use masks after removal each use and dispose-off them immediately upon

Donning and Doffing PPE

Donning (putting on) PPE: Donning in the **following order** is recommended:

1. Gown

A clean, nonsterile, disposable, isolation gown must be worn. Ensure that gown is tied in back and provides full coverage.

2. N-95 respirator

- a. All staff must wear approved respiratory protection (N-95 respirator).
- b. Before using an N-95 respirator, staff must be medically cleared and trained in how to wear /use each device.
- c. For N-95 respirators, staff must have been fit-tested within the past year to ensure proper size and fit.
- d. A “seal check” should be performed before each N-95 respirator use.
- e. The N-95 respirator must be discarded after each use.

3. Goggles/Face shield

All staff must wear goggles or face shield to protect mucous membranes from exposure due to splash or potential for hand contamination of eyes, nose or mouth.

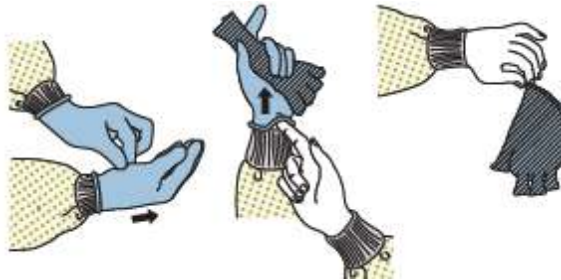
4. Gloves

All staff must wear clean, nonsterile gloves. Gloves must be pulled over the sleeves/cuffs of gown.

- **Doffing (Removal) PPE:** Remove PPE without contaminating your clothing, skin or mucous membrane with potentially infectious material. Remove PPE in the following sequences: If your hand got contaminated during any of the step of PPE removal, immediately wash your hands with soap or use alcohol based hand sanitizers after that step before continuing removal.

1. Gloves :

- Outside of the gloves are contaminated
- If your hand got contaminated during gloves removal, wash your hands with soap or use hand sanitizers.
- Using a gloved hand, grasp the palm area of the other gloved hand and peel off 1st gloves.
- Slide fingers of ungloved hand under remaining glove at wrist and peel off 2nd glove over 1st glove.



2. Goggles or Face shield :

- Outside of goggles or face shield are contaminated.
- Remove goggles or face shield from the back by lifting head band or ear pieces.
- If the item is reusable, place for sterilization or discard in a waste container.



3. Gown :

- Gown front and sleeves are contaminated.
- Unfasten gown ties, taking care that sleeves won't contact your body, when reaching for ties.
- Pull gown away from neck and shoulders, touching inside of gown only.
- Turn gown inside out.
- Fold and roll and discard in a waste container.



4. Mask or Respirator:

- Front of mask or respirator is contaminated- DO NOT TOUCH
- Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front
- Discard in a waste container.



5. Wash Hands or use hand sanitizer (alcohol based) immediately after removing all PPE.

Removal System:

- **For Airborne Infection Isolation (All) room with anteroom:**

Remove all PPE in anteroom.

Make sure the door from the anteroom into the patient room is closed and negative airflow into patient room has been confirmed.

- **For All room without anteroom**

Except for respiratory protection, remove and discard PPE (gloves, gown, face shield or goggles) just inside doorway before exiting to hall.

- **Remove respiratory protection (N-95) after leaving the patient room and closing door**
- **Avoid touching face**

Suspected or confirmed COVID-19 at your healthcare facility

Staff should wear appropriate personal protective equipment

Immediately isolate suspected and confirmed cases

- To reduce stress and anxiety, explain to patients what you do and why you do it
- If possible, place patients in single rooms
- When single rooms are not available, patients suspected of being infected with nCoV should be grouped together
- Patients' beds should be placed at least 1 m apart if they are suspected to have nCov infection
- Suspected and confirmed cases should be kept separate
- Do not put more than one patient in a single hospital bed



Manage Placement

Limit the movement of patients within the health center to reduce potential infection throughout the healthcare facility

- Avoid movement of patients or transport
- If a patient needs to be moved, plan the move ahead: all staff and visitors who come into direct contact with the patient should wear personal protective equipment
- Notify the area receiving the patient of any necessary precautions as early as possible before the patient's arrival; Perform regular environmental cleaning and disinfection which the patient is in contact
- Maintain good ventilation –Open doors and windows. Adequate ventilation is considered to be at least 160 L/s per patient or in negative pressure rooms with at least 12 air changes per hour and controlled direction of air flow when using mechanical ventilation.



Manage Environment

Limit the number of visitors, HCW per patient

- All visitors should wear the required personal protective equipment and their visits should be recorded
- Maintain a record of all persons entering the patient's room, including all staff and visitors.



Manage Visitors

Personal Protective Equipment (PPE) During Healthcare Activities

Triage / points of entry screening personnel	<ul style="list-style-type: none"> ● Medical Mask
Collecting respiratory specimen	<ul style="list-style-type: none"> ● Goggles OR face shield ● Respirator (N95 or FFP2)- Fit tested ● Gown ● Gloves
Caring for a suspected/confirmed case of COVID-19 with NO aerosol-generating procedure	<ul style="list-style-type: none"> ● Goggles OR face shield ● Gown ● Medical mask ● Gloves
Caring for a suspected/confirmed case of COVID-19 WITH aerosol-generating procedure	<ul style="list-style-type: none"> ● Goggles OR face shield ● Respirator (N95 or FFP2)- Fit tested ● Gown ● Gloves
Transport of suspected/confirmed case of COVID-19, including direct care	<ul style="list-style-type: none"> ● Goggles OR face shield ● Medical mask ● Gown ● Gloves

Things to do:

- Wash your hands frequently
- If possible, keep a distance of 1-metre between yourself and patient who is suspected.
- Avoid touching your eyes, nose and mouth
- If you start coughing, sneezing or develop fever after you have provided care, report your illness immediately to the concerned authority and follow their advice
- If equipment needs to be shared among patients, clean and disinfect between each patient use.
- Avoid contaminating environmental surfaces that are not directly related to patient care (e.g. door handles and light switches).

Communicating with patients with suspected or confirmed COVID-19

- Be respectful, polite and empathetic
- Be aware that suspected and confirmed cases, and any visitors accompanying them, may be stressed or afraid
- The most important thing you can do is to listen carefully to questions and concerns
- Use local language and speak slowly
- Answer any questions and provide correct information about COVID-19
- You may not have an answer for every question: a lot is still unknown about COVID-19 and it is okay to admit that
- If available, share information pamphlets or handouts with your patients
- It is okay to touch, or comfort suspected and confirmed patients when wearing PPE
- Gather accurate information from the patient: their name, date of birth, travel history, list of symptoms...
- Explain the healthcare facility's procedure for COVID-19, such as isolation and limited visitors and the next steps
- If the patient is a child, admit a family member or guardian to accompany them –The guardian should be provided and use appropriate personal protective equipment
- Provide updates to visitors and family when possible

Collecting and handling laboratory specimens from patients with suspected 2019-nCoV infection

All specimens collected for laboratory investigations should be regarded as potentially infectious. HCWs who collect, handle or transport any clinical specimens should adhere rigorously to the following standard precaution measures and biosafety practices to minimize the possibility of exposure to pathogens.

- Ensure that HCWs who collect specimens use appropriate PPE (i.e., eye protection, a medical mask, a long-sleeved gown, gloves). If the specimen is collected with an aerosol-generating procedure, personnel should wear a particulate respirator at least as protective as a NIOSH-certified N95, an EU standard FFP2, or the equivalent;
- Ensure that all personnel who transport specimens are trained in safe handling practices and spill decontamination procedures;⁷
- Place specimens for transport in leak-proof specimen bags (i.e., secondary containers) that have a separate sealable pocket for the specimen (i.e., a plastic biohazard specimen bag), with the patient's label on the specimen container (i.e., the primary container), and a clearly written laboratory request form;
- Ensure that laboratories in health care facilities 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;
- Document clearly each patient's full name, date of birth and suspected nCoV of potential concern on the laboratory request form. Notify the laboratory as soon as possible that the specimen is being transported.

Implementing administrative controls

- Establishing sustainable IPC infrastructures and activities
- Educating patients' caregivers
- Developing policies on the early recognition of acute respiratory infection potentially caused by 2019-nCoV
- Ensuring access to prompt laboratory testing for identification of the etiologic agent
- Preventing overcrowding, especially in the emergency department
- Providing dedicated waiting areas for symptomatic patients
- Appropriately isolating hospitalized patients
- Ensuring adequate supplies of PPE

Reference:

1. The COVID-19 Risk Communication Package For Healthcare Facilities – Updated-March-2,WHO
2. Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected, Interim guidance , 25 January 2020, WHO
3. Infection Prevention & Control Guidelines for 2019-nCoV (COVID-19), Hospital Infection Control Committee, AIIMS, New Delhi
4. Interim Clinical Guidance for Management of Patients with Confirmed Coronavirus Disease (COVID-19)- CDC
5. Interim Guidance for Discontinuation of Transmission-Based Precautions and Disposition of Hospitalized Patients with COVID-19-CDC