# Shaukat Khanum Memorial Cancer Hospital & Research Center

# Infection Control Committee

# Coronavirus Disease 2019 (COVID-19)

## Contents

# Section 1: COVID-19 Basics, Outpatient Pathway and Testing

# Background

- Caused by SARS-COV-2, first identified in Wuhan, China in 12/2019
- Transmission: human-to-human
  →modes of transmission: contact and droplets
- Incubation period: 4-14 days
- Spectrum of infection: mild respiratory illness (~80% of cases) to pneumonia/acute respiratory distress syndrome; mortality 2-3%

# Case Definitions:

### Suspected case

A patient with acute febrile illness (documented **fever [>38'C or 100'F] over the past 48 hours) AND** at least one of the following signs/symptoms: cough, sore throat, shortness of breath, myalgias or chills, loss of sense of taste or smell

**Probable case**

1. A suspected case for whom testing for the COVID-19 virus is inconclusive
   OR
2. A suspected case for whom testing could not be performed for any reason.

**Confirmed case**

- A person with laboratory confirmation of COVID-19 infection, irrespective of clinical signs and symptoms.

**Definition of contact**

- A contact is a person who experienced any one of the following exposures during the 2 days before and the 14 days after the onset of symptoms of a probable or confirmed case:

1. Face-to-face contact with a probable or confirmed case within 1 meter and for more than 15 minutes;
2. Direct physical contact with a probable or confirmed case;

3. Direct care for a patient with probable or confirmed COVID-19 disease without using proper personal protective equipment;
   OR
4. Other situations as indicated by local risk assessments.

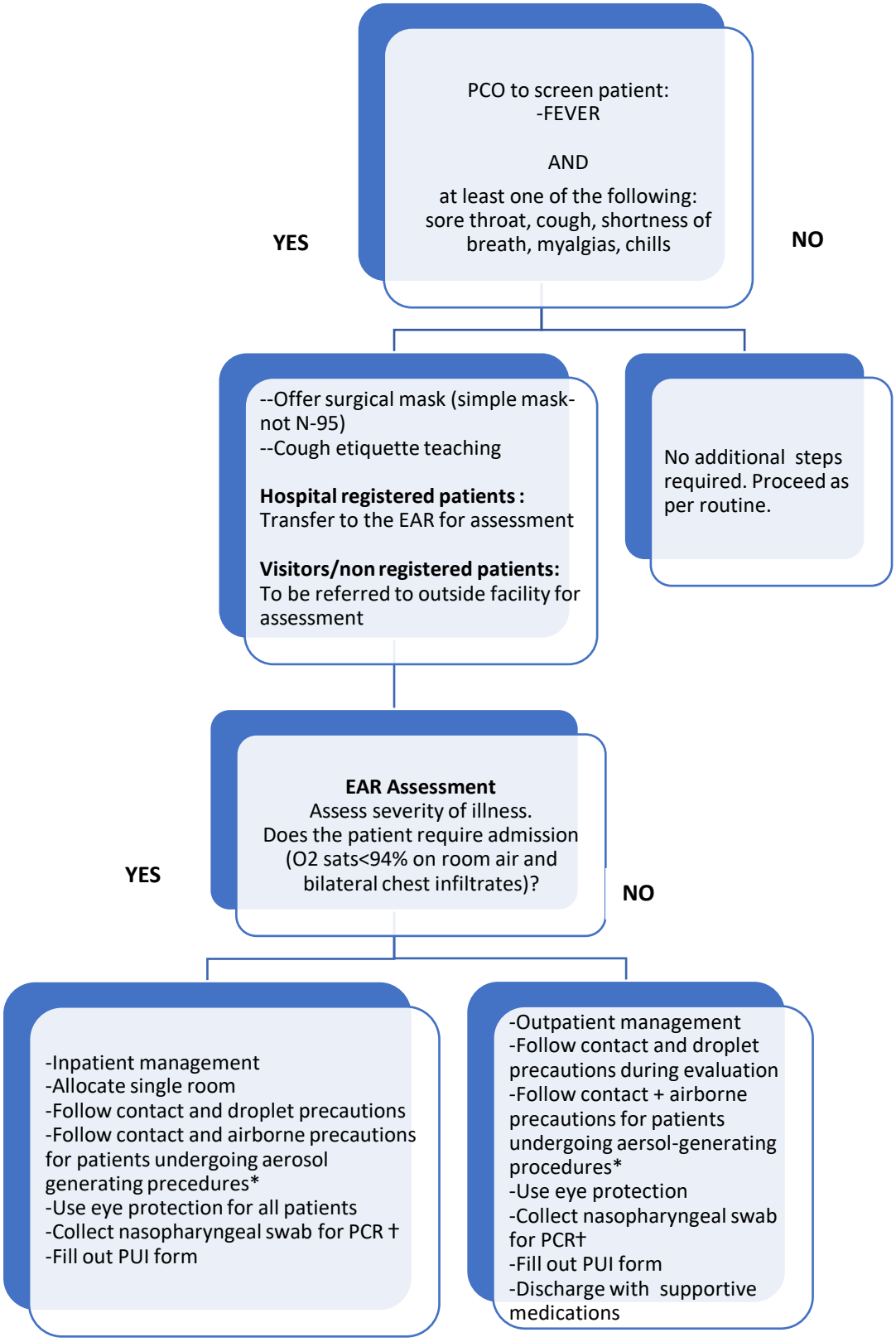
# Isolation Precautions:

- **Standard + contact+ droplet:** for all patients
- **Standard+ contact+ airborne**: for patients requiring **aerosol-generating procedures** e.g. bronchoscopy, CPR, intubation, nasopharyngeal specimen collection, noninvasive ventilation, airway suctioning, NG insertion, dental procedures **ONLY. Any other procedures do not fall under this list.**
- **Eye protection:** for all patients

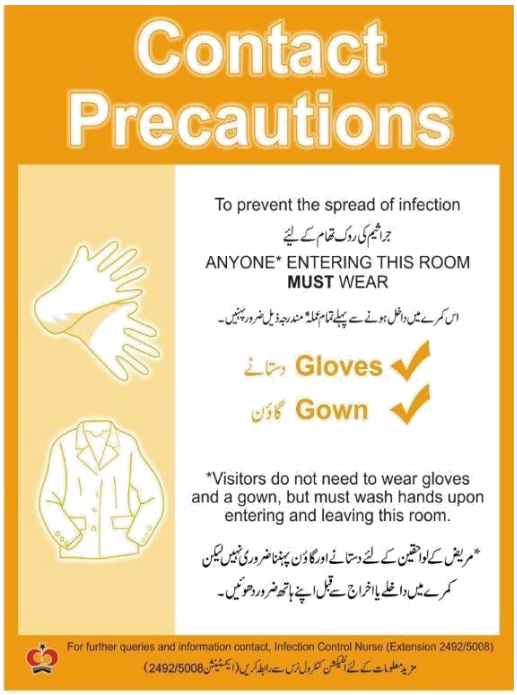
# COVID-19 Screening:

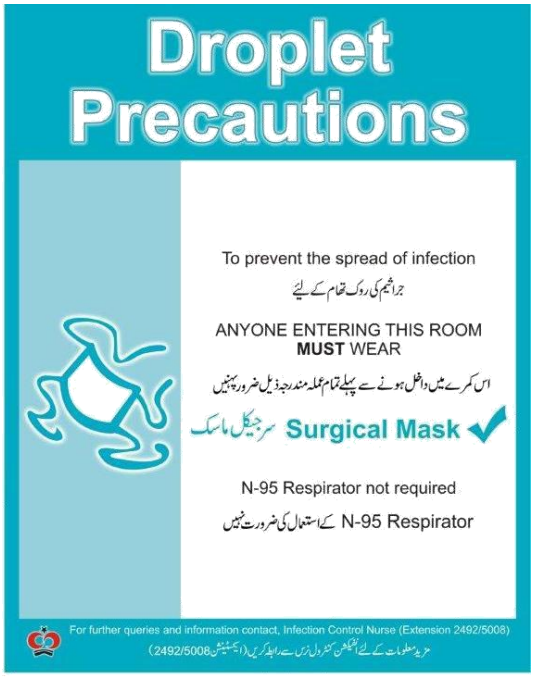
- Screening will be performed at designated COVID screening counters outside the hospital **→9:00 am to 9:00 pm 7 days a week**
- **For patients meeting the case definition, activate the plan for suspected COVID cases:**

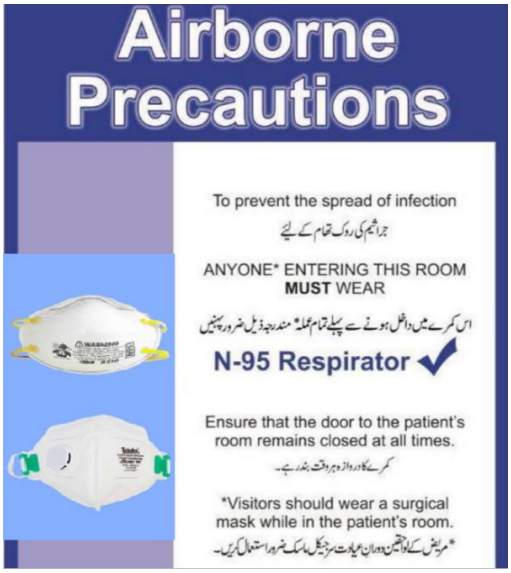
**Pathway for Patients with Suspected COVID-19 (Screening Desks at Hospital Entrances)**



PCO: patient care officer; PUI: person under investigation
*Aerosol generating procedures: nasopharyngeal sample collection, bronchoscopy, airway suctioning, noninvasive ventilation, intubation, CPR, dental procedures, NG insertion, upper GI endoscopy
†Wear a simple surgical mask for nasopharyngeal samples collected in open air
All samples must be placed in a biohazard bag, then in a puncture proof container or a second biohazard bag and transported to the lab.

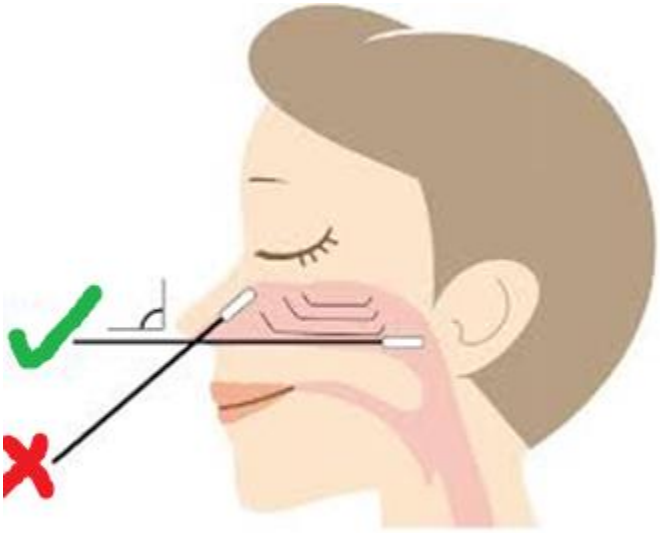


# COVID-19 Testing

- **Who should be tested for COVID-19?**
  →Patients meeting the case definition
- **What COVID-19 test are we performing?**
  →PCR on nasopharyngeal swab
  →Nasopharyngeal swab must be collected as shown in the diagram below



- **Where will testing be performed?**
  **<u>SKM Employees:</u>**
  **→COVID Testing Center (CTC)**
  **→PPE: gloves, impermeable gowns, plastic aprons, face shields, surgical masks**

  **<u>SKM Patients:</u>**
  **In the EAR/IPD/ICU:**
  →In isolation rooms with doors closed. Negative pressure is not required for nasopharyngeal sampling.
  **→PPE: gloves, impermeable gowns, plastic aprons, face shields, N-95 masks**

  **Pre-procedure testing:**
  **→COVID Testing Center (CTC)**
  **→PPE: gloves, impermeable gowns, plastic aprons, face shields, surgical masks**
  **→Work Orders will be generated in the clinic where tests are ordered**

**Non-SKM Patients:**
**→Drive through testing and CTC**
**→PPE: gloves, impermeable gowns, plastic aprons, face shields, surgical masks**

- **What is the reporting time for COVID-19 testing?**
  24 hours

**Re-testing patients/staff/all others who have previously tested negative should only be carried out in the following circumstances:**

1. Clinical deterioration manifested by development of shortness of breath – obtain a chest X-ray and re-test for Covid-19.
2. Persistence of symptoms (fever, cough, sore throat, or any combination thereof) for more than 3 days since the original test.
3. Recurrence of symptoms, following initial resolution for at least three days, suggesting new infection. The interval between tests must be at least 7 days.

**Covid-19 re-testing for individuals with a history of COVID-19 infection:**

If an individual has a new exposure to someone with suspected or confirmed COVID-19 and:

1. Has recovered from illness due to laboratory-confirmed (RT-PCR or antigen) SARS-CoV-2 infection and has already met criteria to end isolation, and
2. Is within the first 90 days following the onset of symptoms of their initial laboratory-confirmed SARS-CoV-2 infection or within the first 90 days of their first positive SARS-CoV-2 test result if they were asymptomatic during initial infection, and
3. Has remained asymptomatic since the new exposure

then they **do not require repeat testing or quarantine for SARS-CoV-2 in the context of this new exposure.**

If an individual has a new exposure to a person with suspected or confirmed COVID-19 and meets the first two above criteria but has or **develops new symptoms consistent with COVID-19 within 14 days of the new exposure,** consultation with a health care provider is recommended. If an alternative cause of

the symptoms cannot be readily identified, retesting for SARS-CoV-2 infection is warranted. For those testing positive, the **duration of isolation would be a minimum of 5 days after symptom onset and after the resolution of fever for at least 24 hours, without the use of fever-reducing medications, with improvement of other symptoms.** Transmission-based precautions should be used for a minimum of 10 days for admitted patients.

**When can COVID positive employees return to work?**
In 5 days from the initial positive COVID-19 test, provided that they fulfill the following conditions: afebrile for at least 24 hours with improvement in other symptoms (cough, sore throat, shortness of breath etc.). This will be assessed by the Infection Control team via telephonic communication.

**What is the duration of isolation for COVID-positive household contacts of hospital employees?**
→COVID-positive household contacts of hospital employees must be advised to isolate at home in a separate room with a washroom, if possible. Direct contact with these individuals must be avoided as far as possible. If contact is unavoidable, the employee and infected family member must both wear masks and maintain a distance of at least 3 feet during the interaction. The employee must perform hand hygiene frequently.
→The duration of isolation for household contacts is at least 5 days from the date of initial positive COVID-19 test, provided that they fulfill the following conditions: afebrile for at least 24 hours with improvement in other symptoms (cough, sore throat, shortness of breath etc.). This must be followed by 5 days of strict masking.

## Work Restrictions for employees with SARS-CoV-2 Infection and Exposures

| Group | Vaccination Status | Work Restrictions |
|---|---|---|
| **All employees with SARS-CoV-2 infection** | Boosted, vaccinated, or unvaccinated | 5 days off work, if asymptomatic or mildly symptomatic (with Improving symptoms). Test not required to return to work.<br>At work these employees should wear surgical mask all the time and should eat separately/alone for the next 5 days. |
| | | |
| **Asymptomatic employees with high-risk exposures including household contacts** | Boosted | No work restrictions* |
| | Vaccinated, or unvaccinated employees | No work restriction with negative tests on days 2 and 5 * |

* Employees who develop symptoms consistent with SARS-CoV-2 must undergo PCR testing immediately.

# Section 2: COVID-19- Clinical Management

## 1. Clinical Management of COVID-19

## Patients can be classified into asymptomatic, mild, moderate and severe based on their presentation

**Asymptomatic:**

Nasopharyngeal RT- PCR positive for SARS CoV2 but having no symptoms

**Mild:**

Presence of symptoms consistent with COVID such as fever, fatigue, cough (with or without sputum production), anorexia, malaise, muscle pain, sore throat, dyspnea, nasal congestion, or headache without any hemodynamic compromise, need for oxygen or chest x-ray findings.

**Moderate:**

Hypoxia (oxygen saturation ≤ 93%). Absence of features suggestive of severe disease (listed below)

**Severe**

Fever, shortness of breath, signs/symptoms of respiratory tract infection and any of the following:

Adults

- RR > 30 breaths/Min
- Central cyanosis
- Respiratory distress (unable to complete a sentence)
- CURB score of more than 2
- Confusion, agitation, restlessness
- SpO2 ≤ 93% on Room air
- Bilateral widespread infiltrates on CXR.
- Clinically heart failure (gallop rhythm, raised JVP)
- Oxygen Saturation/ FiO2 ratio less than 315
- Evidence of heart failure (Raised JVP, Gallop rhythm)
- Signs of shock: Delayed capillary refill; Cold, clammy peripheries; Mottled skin; Systolic BP less than 90 or less than 40mm Hg of baseline in hypertensive; Urine output < 0.5 ml/kg/hr

Pediatric patients:

- Central cyanosis or SpO2 < 90%
- Severe respiratory distress (e.g. grunting, very severe chest indrawing)

- Signs of pneumonia with a general danger sign: inability to breastfeed or drink, lethargy or unconsciousness, or convulsions
- Other signs of pneumonia may be present: chest indrawing, fast breathing (in breaths/min): < 2 months: ≥ 60; 2–11 months: ≥ 50; 1–5 years: ≥E 40

# Criteria for admission of suspected or confirmed COVID-19 patients

### Asymptomatic and mild disease

- Can be managed at home with home isolation

- Patients with mild or asymptomatic disease who do not have adequate home arrangements or do not consent to stay at home should be shifted to a dedicated isolation facility (as opposed to a hospital)

- Upon discharge, clear instructions must be given to call if any worsening occurs.

### Moderate and severe disease

- Patients should be admitted
- Place in a negative pressure room (if available) if aerosol generating procedure(s) are anticipated.

# Management

### Management of asymptomatic and mild disease

- No treatment is indicated for asymptomatic infection.
- Treat mild infections with supportive care. This includes acetaminophen for fever, oral hydration in case of diarrhea and anti-histamines for rhinorrhea.

### Management of moderate disease

#### Investigations

The following investigations should be done in all patients:

- CBC
- Electrolytes and serum creatinine
- Chest X-ray
- CRP
- Ferritin
- Blood and respiratory cultures

Additional investigations may include

- Lactate
- Liver function tests

**Treatment**

- Supportive therapy with oxygen therapy via nasal cannula
- Acetaminophen for fever control and intravenous fluids if needed should continue.
- These patients must be started on dexamethasone 6mg PO or IV daily. Additionally, they may be candidates for antiviral therapy (Remdesivir 200mg IV once on day 1, followed by 100mg IV daily for the next 4 days).

### Management of severe disease

**Investigations**

- Initial investigations and supportive care should proceed as in moderate disease.
- Additional ingestions may be required according to the respiratory status of the patient, including arterial blood gases and lactate levels.

**Treatment**

1. In patients with ARDS who are intubated, use conservative fluid management.
2. Implement mechanical ventilation using lower tidal volumes (4–8 mL/kg predicted body weight, PBW) and lower inspiratory pressures (plateau pressure < 30 cmH2O).
3. Finally, if expertise is available, in adults with severe ARDS, prone ventilation for 12–16 hours per day is recommended.
4. Empiric antibiotics may only be considered if a secondary bacterial pneumonia is suspected (e.g. with raised white blood cell count).

The following treatment options may be considered:

- Dexamethasone 6mg PO or IV daily for 5-10 days, based on clinical response.
- Antiviral therapy (Remdesivir) for adult patients with GFR>30 and those with normal liver function.
- Tocilizumab may be considered in the following situation:
  Indication: Cytokine storm. To be given to patients in the ICU (severe infection, critically ill) with worsening hypoxia, rising CRP and ferritin
  Monitoring: CRP, Ferritin at baseline and daily after Tocilizumab administration
  Dose: 4 mg/kg x 1; if CRP and Ferritin and continue to increase, repeat a second dose on day 2

# 2. Isolation Precautions and PPE for COVID-19 patients

- **Standard + contact+ droplet:** for all patients
- **Standard+ contact+ airborne**: for COVID-19 patients admitted in the ICU and those requiring **aerosol-generating procedures** e.g. bronchoscopy, CPR, intubation, nasopharyngeal specimen collection, noninvasive ventilation, airway suctioning, dental procedures, NG insertion, upper GI endoscopy.
- **Eye protection:** for all patients

- To minimize exposure to airborne droplet nuclei, N-95 masks must form a tight seal around the nose and mouth. Facial hair present along the edges of the mask prevents formation of this seal and results in exposure to airborne infections.
- Since specialized respirators are not available at our facility, **staff members with beards/sideburns/moustaches, who are expected to perform or assist with aerosol generating procedures, or care for patients in the ICU or the floor must ensure that the area of the mask seal is clean shaven**
- **The virus can persist on surfaces for up to 72 hour**s. Therefore, it is crucial to **clean rooms and medical equipment as per hospital policy for contact and droplet/airborne precautions** where applicable
- PPE guidelines must be followed by **ALL** staff members entering patient rooms

## 3. Transporting COVID-19 patients

- Patients must **NOT** be transported to other departments unless absolutely necessary
  In the event of transfer, do the following:
- Inform the receiving department over the phone with details of isolation precautions required
- Staff transferring patients from a bed to a wheelchair or stretcher are required to wear gloves, gown and surgical mask
- Once the patient has been moved and is ready for transport:
  →ensure that the patient wears a surgical mask
  →wipe the handles of wheelchair or stretcher with alcohol wipes
  →discard PPE and transport the patient; no PPE is required for transport
- Once transferred, the patient should be moved directly to the intended IPD room/procedure room etc. Patients must NOT be seated in the waiting area
- Once inside the room at the destination unit, wear gloves, gown and surgical mask to move the patient from the wheelchair/stretcher to the bed; remove and discard PPE inside the patient's room before leaving
- Wheelchairs and stretchers must be disinfected with an approved disinfectant (alpha guard) prior to reuse

## 4. Room allocation for COVID-19 patients

- Single rooms must be allocated while patients are under investigation for COVID-19
- Patients with confirmed COVID-19 may be cohorted i.e. placed in the same room

## 5. Patients with suspected or confirmed COVID-19 requiring medical procedures

- All elective procedures must be cancelled to minimize transport and avoid unnecessary exposure to hospital staff and other patients

- For patients requiring emergent/lifesaving procedures:
  i) schedule procedures at the end of list of possible
  ii) shift patients directly from the inpatient unit to the procedure room
  iii) bronchoscopies must be deferred; if absolutely necessary, perform in negative pressure rooms
  iv) In addition to standard PPE required for the planned procedure, the following apply:
  →standard+ contact + airborne precautions + goggles/face shield for bronchoscopy
  → standard+ contact + airborne precautions + goggles/face shield for upper GI endoscopy; disposable shoe and hair covers may be worn if procedures entail the risk of splashes
  →standard+ contact+ droplet precautions for all other procedures that do not fall under aerosol generating procedures
  v) PPE guidelines must be followed by **ALL** staff members present inside the procedure rooms as well as housekeeping staff who clean these rooms following procedures
  vi) terminal cleaning of rooms to be performed as per hospital policy for contact and droplet/airborne isolation rooms

## 6. COVID-19 visitor policy

- **NO** visitors will be allowed for adult patients
- Pediatric patients are allowed one attendant who will be treated as though infected. The attendant will wear a mask and will not be allowed to leave the room.

## 7. COVID-19 patients and cardiopulmonary resuscitation

- Wear the appropriate PPE before participating in a code

## 8. How frequently should rooms of COVID patients be cleaned?

- At least once per shift and more frequently if required

## 9. How frequently must surfaces, electronics and door handles be disinfected?

- Every 8 hours. Logs must be maintained for this. Surface disinfection checklists have been introduced and must be maintained in all areas.
- Cleaning and disinfection of clinic rooms must be performed before and after each clinic
- In areas where procedures are performed or dressings are changed, cleaning and disinfection must be performed between patients

## 10. When can isolation precautions be discontinued?

- Isolation can be discontinued **as early as 10 days from the date of diagnosis** if the patient is afebrile for at least 24 hours, with improvement in other symptoms and no longer requires respiratory support
- For the following groups of patients, the **duration of isolation precautions is a minimum of 20 days**:
  →immunocompromised patients (patients with neutropenia, those who have recently received chemotherapy or are on steroids/ other immunosuppressants)

**→these patients must remain in isolation until 2 consecutive COVID PCRs taken 24 hours apart are negative**

- Patients who continue to run fevers/require respiratory support must remain in isolation until clinically stable

## 11. What if there is strong clinical suspicion for COVID-19 but the test results are negative?

- Continue isolation precautions and repeat nasopharyngeal PCR in 3 days
-

## 12. When can the patient be discharged?

- Once clinically stable and deemed fit for discharge by the evaluating physician
- Patients do not need to be isolated at the hospital if medically stable

## 13. What instructions must patients and employees be given on discharge?

- SKM nonregistered patients:
  →advise home isolation until the following 2 conditions are fulfilled:
  **i) at least 5 days following initial diagnosis of infection, with strict masking during the following 5 days**
  **ii) afebrile for at least 24 hours with improvement in other symptoms**

## 14. What are the recommendations for patients with suspected/confirmed COVID-19 undergoing procedures requiring written consent?

- For patients with suspected or confirmed COVID-19, requiring a procedure for which written consent must be obtained, hard copies/printouts of the consent form must not be taken inside the patient's room. A physician must verbally discuss the elements of consent including the diagnosis, indication for the procedure, risks, benefits and alternatives for the procedure, and risks of deferring the procedure with the patient.
- The physician obtaining the consent must sign the consent form upon exiting the patient's room. A second physician must sign the consent form as a witness.
- Physicians must document in HIS that institutional COVID guidelines prohibit taking forms inside patients' rooms; therefore, the patient was unable to sign the consent form.
- All such consent forms must be reviewed and ratified by the head of department by the next working day, to ensure that the process is being followed

# Section 3: Personal Protective Equipment (PPE)

**Follow standard precautions and strictly adhere to the 5 moments of hand hygiene for patients in all clinical areas**

**All staff (clinical and non-clinical) must wear masks in all areas of the hospital at all times.**

**Based on risk assessment, all clinical areas of the hospital will be marked as Red or Yellow zones (details below). PPE guidelines must be strictly followed for all units based on the zone they fall in.**

**The COVID units have been permanently marked as Red Zones.**

**All non-COVID clinical areas** with COVID risk may be converted into Yellow Zones temporarily based on risk assessment.

**The unit allocation and PPE guidance are as follows:**

## COVID UNITS: Red Zone

**Confirmed COVID-19 patients may be cohorted (placed in the same room)**

**SKM Lahore:**

**COVID ICU:**
PPE:
→To be worn at all times: hazmat suits, inner gloves, surgical masks
→To be worn upon entering a patient's room: hazmat suits, gloves, N95 masks, faceshields, gown and second pair of gloves.
→**While caring for multiple patients:** wear the same faceshield and masks. Gloves and Gowns must be changed between patients
→**At the end of rounds:** remove and discard faceshield and surgical mask. Save the N-95 for later use (see guidelines for N-95 reuse below)

**COVID Ward:**
PPE:
→To be worn at all times: surgical mask
→To be worn upon entering a patient's room: faceshields, gown, surgical masks, gloves upon entering a patient's room). Gowns and gloves must be changed between patients.
→ Aerosol generating procedures: faceshields, gown, N-95 mask, gloves

**SKM Peshawar:**
PPE:
→To be worn at all times: surgical mask
→To be worn upon entering a patient's room: faceshields, gown, surgical masks, gloves upon entering a

patient's room). Gowns and gloves must be changed between patients.
→ Aerosol generating procedures: faceshields, gown, N-95 mask, gloves

## NON-COVID UNITS:

**High Risk**: Yellow Zone
PPE
→to be worn at all times: **surgical mask, fabric gown** with **gloves** taped to the ends of sleeves

**Upon entering the unit**: please obtain a gown from the Team Leader and proceed to the donning rea. Before exiting these areas, ensure that your gloves have been taped to the ends of the sleeves.

**Before seeing a patient**: perform hand hygiene and wear a second pair of second (outer) gloves

**After seeing a patient**: discard outer gloves and perform hand hygiene.

**Before leaving the unit**: proceed to the doffing area; please request the Team Leader or Unit Co-ordinator to point you to the doffing areas for these units. Remove and discard inner gloves. Remove gowns and place in laundry hampers. Perform hand hygiene and exit the area

Daily active monitoring:
→Temperature monitoring and COVID screening will be performed for staff working on these units on a daily basis

Areas may be converted into Yellow Zones temporarily based on risk assessment.

**Low Risk:**
PPE:
→**Surgical Masks:** Mandatory mask - wearing is no longer required in our facilities.
However, **patients** are encouraged to continue to wear surgical masks. All employees with pre-existing health conditions which render them more vulnerable to Covid-19 infection are likewise advised to continue to wear a surgical mask. Any other employees who wish to wear a surgical mask may continue to do so. Surgical masks will continue to be made available by the Hospital, for all such employees, for now.
→Secretaries/managers in the relevant departments will issue 7 masks per employee once a week and maintain records. Masks will be reissued once the employee has completed 7 shifts.
→For patients requiring additional isolation precautions (contact, airborne etc.) follow the relevant PPE guidelines.
**In addition to the above, the following are recommended:**

## All clinical areas, SKM Lahore and Peshawar:

May wear surgical scrubs. Use OR changing rooms. Must change out of scrubs before leaving the hospital

**Staff examining/assessing patients/performing vitals:**

- Perform hand hygiene

- **Surgical Masks:** Mandatory mask - wearing is no longer required in our facilities. For details please see surgical mask section on page 16
- Use the same surgical mask for the entire shift unless damaged or visibly soiled

**If, upon evaluation, a patient is suspected to have COVID-19:**

- Immediately move to a separate room and follow droplet and contact precautions; use eye protection
- PPE includes gloves, disposable water-resistant gown, surgical mask, goggles/faceshield
- **In the event of a surge in the volume of patients, and nonavailability of isolation rooms, please contact the Infection Control team.**

**Taking a COVID-19 nasopharyngeal sample:**

- Must be performed in a closed room, following airborne precautions. Negative pressure is not required.
- PPE includes gloves, disposable water-resistant isolation gown, N-95 mask*, faceshield/goggles^

## Operating Rooms:

## ALL surgical procedures requiring general anesthesia:

a) **Guidance for the anesthesia team:**
-minimum number of staff to be present in the OR during intubation
**-PPE:** N-95 mask, impermeable gown, gloves, faceshield or goggles

b) **Guidance for the surgery team:**
**Operating on patients with negative COVID PCR performed 48-72 hours prior to surgery:**
-May enter the OR immediately following intubation.
**-PPE:** N-95 mask, sterile impermeable gown, sterile gloves, faceshield or goggles
*Use of an N95 mask, as opposed to a standard surgical mask, is compulsory for **all laparoscopic procedures, head and neck surgery and ENT surgery** and recommended for all other procedures.

**Operating on patients with positive COVID PCR prior to surgery, and for emergency surgeries where pre-procedure COVID PCR could not be performed:**
-May enter the OR 15 minutes following intubation.
**-PPE:** N-95 mask, sterile impermeable gown, sterile gloves, faceshield or goggles

## PACU and Holding Bay:

→ Mandatory mask - wearing is no longer required in our facilities. For details please see surgical masks section on page 16

## Patients and Attendants (both inpatient and outpatient):

→ Mandatory mask - wearing is no longer required in our facilities. However, **patients** are encouraged to continue to wear surgical masks

## Recommendations for PPE Reuse:

**Items to be used ONCE only:**
i) Gloves
ii) Shoe covers, where applicable
iii) Face shields

**Items that can be reused**

**i) Goggles**

→Disinfect with alcohol wipes before and after use.
→ Following use, goggles must be placed in designated drawers in isolation trolleys to be used by the next person

**ii) N-95**

→N-95 masks may be obtained from unit coordinators (UCs). UCs must maintain a record of employees who have been issued N-95 masks with the date the mask was issued.
→Write your employee code on the mask prior to use
→Write employee code on a paper bag prior to use and leave on the isolation trolley. These may be obtained from unit coordinators covering the shift (image below)
→Wear a surgical mask on top of the N-95 to prevent mask contamination.
→Following use, discard the surgical mask
→Remove the N-95 mask carefully, without touching the front surface and place in the paper bag (as shown on page 20)
**→Masks may be reused for up to seven (7) days as long as there is no wear and tear and a tight seal forms around the mouth and nose. If your mask is damaged, or visibly soiled or no long forms a tight seal around your face and mouth, you must notify the UC and submit the used mask to obtain a new N-95 mask.**
→ Please note that CDC currently recommends that masks not be reused following any aerosol generating procedures; however, given the regional and global shortage of N-95 masks, you may continue to reuse N-95 masks worn during aerosol generating procedures (other than intubation) as long as you wear a surgical mask on top of the N-95.

**Gowns (COVID ward):**

→The same gown must be worn to see ALL **CONFIRMED NON-ICU, COVID ward** patients. Gloves must be changed between patients. Try, as much as possible, to visit these patients around the same time to conserve gowns. Gowns must be discarded after rounding on these patients.
→For patients in COVID ICU or suspected COVID cases on the COVID ward, a new gown and gloves must be worn for each patient.


**PPE Donning and Doffing for Suspected or Confirmed COVID patients on Non-COVID units:**

**Donning (putting on the gear):**

1. Identify and gather the proper PPE to don. Ensure choice of gown size is correct.

2. Perform hand hygiene using hand sanitizer.

3. Put on isolation gown. Tie all of the ties on the gown.

4. Put on face mask

5. Put on face shield

6. Put on gloves. Gloves should cover the cuff (wrist) of gown.

7. Healthcare personnel (HCP) may now enter patient room.

**Doffing (taking off the gear):**

1. Remove gloves **inside the patient's room**. Ensure glove removal does not cause additional contamination of hands.

2. If hands are contaminated, per form hand hygiene.

3. Remove gown **inside the patient's room**

4. HCP may now **exit patient room**.

5. Perform hand hygiene.

6. Remove face shield carefully by grabbing the strap and pulling upwards and away from the head. Do not touch the front of face shield. Discard this in **a yellow bin outside the patient's room.**

7. Remove and discard facemask **if visibly contaminated.**

8. Perform hand hygiene after removing facemask and before putting it on again if your workplace is practicing reuse.

9. N-95 masks must be retained and used for up to 7 days. Please refer to the PPE use guidelines in the COVID document.

**Shaukat Khanum Memorial Cancer Hospital & Research Center**

**Personal Protective Equipment (PPE) Recommendations for SKM Lahore**

| | Gloves | Medical Mask | N95 Mask | Gown | Faceshield / Goggles | Hazmat Suit |
|---|---|---|---|---|---|---|
| **Recommendations for Select Groups of Healthcare Workers** | | | | | | |
| Staff in the COVID Testing Area | √ | √ | | √ | √ | |
| **Recommendations for staff caring for suspected / confirmed COVID-19 patients** | | | | | | |
| ALL healthcare workers entering the patient's room | √ | √ | | √ | √ | |
| ALL healthcare workers present inside a room when aerosol generating procedures† are performed | √ | | √ | √ | √ | |
| Doctors collecting nasopharyngeal samples for COVID-19 testing in inpatient units | √ | | √ | √ | √ | |
| Phlebotomy Staff | √ | √ | | √ | √ | |
| Housekeeping Staff cleaning the room once the patient leaves (terminal cleaning) | √ | √ | | √ | | |
| Porters transporting patients | NO PPE required. Porters and patients must wear a surgical mask during transport. | | | | | |
| Visitors of pediatric COVID-19 positive patients. 1 visitor allowed-must stay | | √ | | | | |
| Visitors of adult COVID-19 positive patient | NO visitors allowed for adult patients. | | | | | |
| **Recommendations for staff caring for patients in Red Zones** | | | | | | |
| All staff entering ICU rooms of patients with suspected or confirmed COVID-19 | √ | | √ | √ | √ | |
| **Recommendations for Yellow Zones** | | | | | | |
| All staff to wear at all times | √ | √ | | √ | | |
| Staff with patient interaction in Yellow Zones. Change outer gloves between patients. | √ | √ | | | | |
| **Recommendations for staff in surgical procedures in the OR requiring General Anaesthesia** | | | | | | |
| All staff present inside the OR during an operative procedure must wear | √ | √ | √ | √ | √ | |

***†Aerosol generating procedures: nasopharyngeal sample collection, bronchoscopy, open airway suctioning, noninvasive ventilation, intubation, CPR, dental procedures, NG insertion, Upper GI endoscopy, administration of general anesthesia***

***Minimize the number of staff members present while aerosol generating procedures are performed. Only those performing and assisting should be present.***

## Personal Protective Equipment (PPE) Recommendations SKM Peshawar

| | Gloves | Medical Mask | N95 Mask | Gown | Faceshield / Goggles | Hazmat Suit |
|---|---|---|---|---|---|---|
| **Recommendations for Select Groups of Healthcare Workers** | | | | | | |
| Staff in the COVID Testing Area | √ | √ | | √ | √ | |
| **Recommendations for staff caring for suspected / confirmed COVID-19 Patients** | | | | | | |
| ALL healthcare workers entering the patient's room | √ | √ | | √ | √ | |
| ALL healthcare workers present inside a room when aerosol generating procedures† are performed | √ | | √ | √ | √ | |
| Doctors collecting nasopharyngeal samples for COVID-19 testing in inpatient units | √ | | √ | √ | √ | |
| Phlebotomy Staff | √ | √ | | √ | √ | |
| Housekeeping Staff cleaning the room once the patient leaves (terminal cleaning) | √ | √ | | √ | | |
| Porters transporting patients | NO PPE required. Porters and patients must wear a surgical mask during transport. | | | | | |
| Visitors of pediatric COVID-19 positive patients. 1 visitor allowed-must stay inside the room at all times | | √ | | | | |
| Visitors of adult COVID-19 positive | NO visitors allowed for adult patients. | | | | | |
| **Recommendations for staff caring for patients in Red Zones** | | | | | | |
| All staff entering ICU rooms of patients with suspected or confirmed COVID-19 | √ | | √ | √ | √ | |
| **Recommendations for Yellow Zones** | | | | | | |
| All staff to wear at all times | √ | √ | | √ | | |
| Staff with patient interaction in Yellow Zones. Change outer gloves between patients. | √ | √ | | | | |
| **Recommendations for patients** | | | | | | |
| Recommendations for patients in all areas of the hospital | | √ | | | | |

All staff must strictly adhere to hand hygiene guidelines.

*†Aerosol generating procedures: nasopharyngeal sample collection, bronchoscopy, open airway suctioning, noninvasive ventilation, intubation, CPR, dental procedures, NG insertion, Upper GI endoscopy, administration of general anesthesia*

***Minimize the number of staff members present while aerosol generating procedures are performed. Only those performing and assisting should be present.***

# Section 4: High Risk Units

## Guidance for Staff Working in Yellow Zones:

**PPE:**
For guidance on PPE, refer to Section 3

**Instructions for all staff:**

→ALL staff working on these units must undergo daily symptom screening and temperature checks at the beginning of each shift

→Area managers must maintain a log of symptom screening and temperature checks

## Areas Designated as Yellow Zones

### SKM Lahore: None

### SKM Peshawar: None

# Section 5: Planning for Procedures and Chemotherapy

Currently, pre-procedure COVID-19 testing is no longer required.
All patients must continue to be screened for COVID-19 symptoms (fever, cough, sore throat, shortness of breath) prior to any procedure (Endoscopies, Bronchoscopies, Surgeries).

**If symptoms are not suggestive of COVID-19**
Proceed with the planned procedure
N-95 masks should be worn for all bronchoscopy/EBUS procedures
PPE recommendations for other procedures remain unchanged

**Where a patient has symptoms suggestive of COVID**
Refer for COVID-19 testing
Delay the procedure for 10 days, if non-urgent
Urgent procedures may still be performed, but while ensuring adherence to institutional guidelines

**PPE for Endoscopic Procedures:**

**PPE for COVID positive patients:** faceshield, impermeable gown, gloves, N-95 mask, plastic apron, shoe covers and headcover/cap; the same headcover may be worn during multiple procedures
**PPE for all other patients:** faceshield, impermeable gown, gloves, surgical mask, plastic apron, shoe covers and headcover/cap; the same headcover may be worn during multiple procedures

**PPE for Bronchoscopies:**

**PPE for all patients:** faceshield, impermeable gown, gloves, N-95 mask

**PPE for Surgical Procedures:**

**PPE for all patients:** N-95 mask, sterile impermeable gown, sterile gloves, faceshield or goggles

**Guidance for the anesthesia team:**
-minimum number of staff to be present in the OR during intubation
**-PPE:** N-95 mask, impermeable gown, gloves, faceshield or goggles

**Guidance for the surgery team:**
-May enter the OR 15 minutes following intubation.
**-PPE:** N-95 mask, sterile impermeable gown, sterile gloves, faceshield or goggles

*Use of an N95 mask, as opposed to a standard surgical mask, is **compulsory** for the following:
-all laparoscopic, head and neck and ENT procedures
all emergent procedures
-all procedures performed on patients with confirmed or suspected COVID

*N95 masks are **recommended** for all other operative procedures performed under GA.

## Planning for FNACs:

This section applies to FNACs performed in Radiology and Pathology

**For FNAC:**
Perform needle biopsy rather than FNA where possible.
Performing FNA may be necessary in some situations e.g. for thyroid nodules. We recommend the following PPE for these cases:
→ N-95 mask, sterile impermeable gown, gloves, faceshield or goggles
→Following use, N-95 masks be saved and used for an extended period of time as explained on page 19

## Planning for Radiologic Procedures:

**For other aerosol generating procedures, lung and pleural biopsies, bronchial artery embolization, insertion and gastrostomy the following PPE is recommended:**
→ N-95 mask, sterile impermeable gown, gloves, faceshield or goggles

N-95 masks must be reused. Please refer to N-95 reuse guidelines on Page 17

No COVID testing is required prior to radiologic procedures for patients with no clinical suspicion for COVID.

## Planning for Dental Procedures:

**Pre-procedure COVID testing is not required**

**PPE for aerosol-generating procedures:**
→ N-95 mask, sterile impermeable gown, gloves, faceshield or goggles

**PPE for non-aerosol generating procedures:**
→ surgical mask, sterile impermeable gown, gloves, faceshield or goggles

## Planning for Chemotherapy and Stem Cell Transplant:

All patients with **acute leukemias and those planned for stem cell transplant**, must be tested for COVID 48 hours prior to chemotherapy. Patients must be tested once prior to each cycle of chemotherapy.

**If the test is positive,** postpone chemotherapy and reevaluate in 2 weeks; once afebrile for at least 24 hours with improvement in other symptoms, repeat COVID testing x 2, 24 hours apart. If both the tests are negative, proceed with the planned chemotherapy.

*For pediatric patients, it is advisable to proceed with moderate intensity chemotherapy even if COVID is diagnosed, as childhood malignancies are very aggressive and may be fatal if treatment is delayed- even by a few weeks. Induction therapy may be initiated in 3 weeks from diagnosis of infection*

**If the test is negative**, plan for chemotherapy.
→Screen the patient for COVID symptoms once again (fever, cough, sore throat, shortness of breath) on the day of chemo. If these are present, postpone chemotherapy and reevaluate in 2 weeks.
→If no signs/symptoms suggestive of COVID are present, proceed with chemotherapy.

*Patients with COVID must not undergo transplant until they have completed the isolation period of 14 days, are afebrile for 24 hours and have tested negative on 2 consecutive nasopharyngeal PCRs taken 24 hours apart.

*The subset of COVID-positive patients with aggressive malignancies, in whom delaying chemotherapy poses a greater risk than COVID, intermediate-strength chemotherapy may be administered. These patients must be admitted and appropriate isolation precautions must be followed.

*Standard risk patients (all solid malignancies, lymphoma, myeloma), who have had a COVID positive PCR , have completed at least 10 days isolation and are afebrile for 24 hours with improvement in other symptoms:

- Isolation can be discontinued
- 'COVID-19' flag can be removed
- Commencement of chemotherapy may be considered by the primary team

*For the following groups of patients, the **duration of isolation precautions is a minimum of 20 days**:
→immunocompromised patients (patients with neutropenia, those who have recently received chemotherapy or are on steroids/ other immunosuppressants)
**→these patients must remain in isolation until 2 consecutive COVID PCRs taken 24 hours apart are negative**

# Section 6: Guidance on Patient Flow for COVID Rule-out During Admission

**Patients with signs/symptoms of COVID on admission:**

→Must be admitted directly to the regular ward or ICU, depending on the severity of illness.
→Patients must preferably be placed in negative pressure rooms. If these are unavailable, please accommodate in regular rooms.
→Patients with confirmed COVID infection must be cohorted (i.e placed in the same room)

**Patients who develop symptoms of COVID or require COVID testing for planned procedures during admission:**

→Move to a single room on the same unit
→Institute contact+ droplet precautions+ eye protection

→**PPE**: impermeable gown, faceshield, gloves, surgical mask

→If the COVID PCR is positive, continue isolation
→If the PCR is negative, discontinue isolation, if admitted, and proceed with the planned chemotherapy or procedure

**Asymptomatic acute leukemia or pre-transplant patients, pre-op patients and those admitted for endoscopic procedures requiring COVID-rule out:**

→COVID rule out should ideally be performed on an outpatient basis, 48 hours prior to the planned procedure or chemotherapy
→For patients requiring urgent chemotherapy or admission for some other reason, admit to a non-COVID unit
→Allocate a single room
→Institute contact+ droplet precautions+ eye protection

→**PPE:** impermeable gown, faceshield, gloves, surgical mask

→If the COVID PCR is positive, continue isolation
→If the PCR is negative, discontinue isolation, if admitted, and proceed with the planned chemotherapy or procedure

**Patients admitted to the ICU, who develop symptoms of COVID and require COVID testing during admission:**

→Move to a negative pressure room on the same unit
→Institute contact+ airborne precautions+ eye protection

→**PPE**: impermeable gown, faceshield, gloves, N-95 mask

→If the COVID PCR is positive, continue isolation
→If the PCR is negative, discontinue isolation. Patients may be moved out of negative-pressure rooms.

*For the following groups of patients, the **duration of isolation precautions is a minimum of 20 days**:
→immunocompromised patients (patients with neutropenia, those who have recently received chemotherapy or are on steroids/ other immunosuppressants)
→**these patients must remain in isolation until 2 consecutive COVID PCRs taken 24 hours apart are negative**

# Section 7: Guidance for Pregnant Healthcare Workers

**Employees under 28 weeks of gestation**

- Require risk assessment by employee health physicians
- Those with uncomplicated pregnancies and no history of cardiac or pulmonary disease can return to work
- These employees must not be posted to COVID units or EAR
- These employees must strictly adhere to PPE guidelines for areas they work in

**Employees at 28 to 34 weeks of gestation**

- Will be assigned duties with no patient interaction e.g. administrative work and telemedicine clinics

**Employees over 34 weeks of gestation**

- Must be advised to stay at home

# Section 8: Frequently Asked Questions (FAQs)

## 1. What resources are these guidelines based on?

- CDC, WHO, NHS

## 2. What should employees with cough/fever/sore throat do?

- Do not enter the hospital building
- Visit the following areas for assessment:
  SKM Peshawar: COVID Assessment Area (24 hours, 7 days a week)
  SKM Lahore: EAR

## 3. How can hospital staff protect themselves from COVID-19?

- Adhere to **hand hygiene** policies
- Practicing good **cough etiquette** (cover your cough with your sleeve or tissue, appropriately dispose of used tissues), avoid touching eyes and mouth
- Avoid crowds and gatherings. **Physical distancing.**

## 4. What is the policy on code blue situations where the patient is a suspected or known cases of COVID-19, or the COVID-19 infectivity status is unknown e.g patients who are pulseless or code soon after arrival at the hospital?

- Wear gloves, gown, N-95, face shield / goggles. Do not participate in codes without this PPE.
- Minimize the number of staff present inside rooms during codes

## 5. Should employees who have recovered from COVID-19 be considered immune?

- Little is known about COVID-19 infection and immunity.
- Those who have been infected once may be re-infected and, therefore, must continue to follow all PPE guidelines and infection control policies religiously.
- Those with a history of COVID-19 infection and signs/symptoms suggestive of COVID (fever, chills, myalgias, sore throat, cough, shortness of breath, loss of taste or smell) must proceed to the designated assessment areas.

## 6. Should employees who have been vaccinated for COVID-19 continue to follow precautions?

- Those who have been vaccinated may acquire the infection and, therefore, must continue to follow all PPE guidelines and infection control policies religiously.

# Safe Handling and Burial SOPs for Patients with Suspected or Confirmed COVID-19

**Prior to procedure:**

- Only trained personnel should handle the remains of confirmed case and handling should be kept minimum.
- Cultural, religious, and family concerns should be considered before starting the procedure.
- Due respect should be shown to relatives of the deceased in terms of their religious and personal rights.

**Preparing and packing the body for transfer from a patient room/ICU**

- Ensure that personnel who interact with the body (Health care workers or supporting staff) should follow standard precautions, including hand hygiene before and after interaction with the body, and the environment.
- Use appropriate PPE according to the level of interaction with the body, including a face mask, impermeable gown and gloves. If there is a risk of splashes from the body fluids or secretions, personnel should use facial protection, including the use of face shield or goggles and medical mask.
- Prepare the body for transfer including removal of all lines, catheters, and other tubes.
- Ensure that any body fluids leaking from orifices are contained.
- Keep both the movement and handling of the body to a minimum.
- Place the body with plastic body bag and then spray the outer surface of bag with a hospital approved disinfectant.
- Transfer to the ambulance/vehicle as soon as possible.
- No PPE is required during transportation.

## Instructions for the family members

- Children, older people (>60 years old), and anyone with underlying illnesses (such as respiratory illness, heart disease, diabetes, or compromised immune systems) should not be involved in preparing the body. Others may observe without touching the body at a minimum distance of 1 meter.
- If the family members want to prepare the body (e.g., washing the body, tidying hair, trimming nails, or shaving) should wear appropriate PPE according to standard precautions (gloves, impermeable disposable gown [or disposable gown with impermeable apron], medical mask, eye protection).
- Family and friends may view the body after it has been prepared for burial, in accordance with customs. They should not touch or kiss the body and should wash their hands

thoroughly with soap and water after leaving the area; physical distancing measures should be strictly maintained (at least 1 m between people).

- All individuals must wear face masks.
- Those tasked with placing the body in the grave, should wear gloves and wash hands with soap and water after removal of the gloves once the burial is complete.
- Burials should take place in a timely manner, in accordance with local practices. Participants should always observe physical distancing, plus respiratory etiquette and hand hygiene. The number of participants should be limited.
- Belongings of the deceased person do not need to be burnt or otherwise disposed of. However, they should be handled with gloves and cleaned with a detergent followed by disinfection with a solution with at least 70% ethanol or 0.1% (1000 ppm) bleach.
- Clothing and other fabrics belonging to the deceased should be machine washed with warm water at 60−90°C (140−194°F) and laundry detergent. If machine washing is not possible, linen can be soaked in hot water, with soap or detergent, using a stick to stir while being careful to avoid splashes. Laundry should be rinsed with clean water and the linen allowed drying fully in sunlight.
- Burial is admissible in a normal graveyard.

**References:**

World Health Organization, 2020. *Infection prevention and control guidance for long-term care facilities in the context of COVID-19: interim guidance, 21 March 2020* (No. WHO/2019-nCoV/IPC_long_term_care/2020.1). World Health Organization.

https://www.nih.org.pk/wp-content/uploads/2020/03/26-COVID-19-SOPs-for-burial-policy.pdf

https://www.cdc.gov/coronavirus/2019-ncov/faq.html#anchor_1584390222777