

STANDARD OPERATING PROCEDURE

FOR

PERI-OPERATIVE MANAGEMENT OF

PATIENTS WITH SUSPECTED OR

CONFIRMED COVID-19 INFECTION

Purpose: To ensure patient safety and prevention of transmission to healthcare workers and others

Pre-op assessment:

All anesthetic personnel should wear disposable surgical mask and follow frequent hand hygiene practices during pre-op assessment

CASE DEFINITION:

Suspected case

A patient with acute respiratory illness {fever and at least one sign/symptom of respiratory disease (e.g., cough, shortness of breath)}, **AND** a history of travel to or residence in a country/area or territory reporting local transmission of COVID-19 disease during the 14 days prior to symptom onset;

OR

A patient/Health care worker with any acute respiratory illness **AND** having been in contact with a confirmed COVID-19 case in the last 14 days prior to onset of symptoms.

OR

A patient with severe acute respiratory infection {fever and at least one sign/symptom of respiratory disease (e.g., cough, shortness breath)} **AND**

requiring hospitalization **AND** with no other etiology that fully explains the clinical presentation;

OR

A case for whom testing for COVID-19 is inconclusive.

Laboratory Confirmed case:

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

Close contact

A contact is a person that is involved in any of the following:

- ✓ Providing direct care without proper personal protective equipment (PPE) for COVID-19 patients
- ✓ Staying in the same close environment of a COVID-19 patient (including workplace, classroom, household, gatherings).
- ✓ Traveling together in close proximity (1 m) with a symptomatic person who later tested positive for COVID-19.

High Risk Contact:

- Touched body fluids of the patient (Respiratory tract secretions, blood, vomit, saliva, urine, faeces)
- Had direct physical contact with the body of the patient including physical examination without PPE.
- Touched or cleaned the linens, clothes, or dishes of the patient.
- Lives in the same household as the patient.
- Anyone in close proximity (within 3 ft) of the confirmed case without precautions.
- Passenger in close proximity (within 3 ft) of a conveyance with a symptomatic person who later tested positive for COVID-19 for more than 6 hours.

Low Risk Contact:

- Shared the same space (Same class for school/worked in same room/similar and not having a high-risk exposure to a confirmed or suspect case of COVID-19).

- Travelled in the same environment (bus/train/flight/any mode of transit) but not having a high- risk exposure.

SCREENING QUESTIONNAIRE for exposure and symptoms

Criteria A: - Exposure

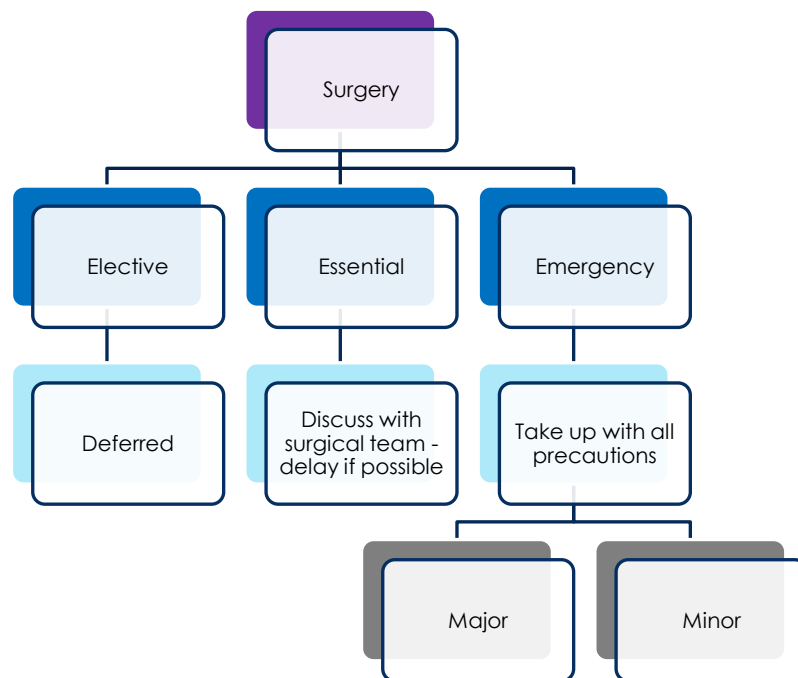
- ✓ Is there a history of travel to a foreign country in the last 4 weeks (TRAVEL)?
- ✓ Is there a contact with a suspected or confirmed case of Covid-19 (CASE CONTACT)?
- ✓ Is there a close contact with a person who has travelled to a foreign country in the last 4 weeks (TRAVELLER CONTACT)?

Criteria B: - Symptoms

- ✓ History of fever or respiratory symptoms (SYMPTOMS)? - Fever, cough, breathlessness, others.
- ✓ Advice patient to wear surgical mask and follow hand hygiene practices frequently.
- ✓ To communicate and discuss with the surgical and nursing team about plans and timing of surgery
- ✓ If patients is already isolated, approach the patient with appropriate PPE.

Operation theatre and Personnel:

1. There must be a designated OT complex for Covid – 19 patients : SSB Annexure OT complex.
2. There must be a designated post anaesthesia care unit nearby the OT complex.
3. Patients posted for surgery will be categorized according to their presentation **(2 Categories)**
 - a. **Category 1:** Asymptomatic with travel history or exposure to Covid – 19 positive patients, Symptomatic patient quarantined at home or hospital (Not tested)
 - b. **Category 2:** Covid – 19 Positive patients
4. There will be 2 designated OTs – One will be primary OT and the other will be secondary OT (will be utilized when the primary OT gets disinfected).



1. There will be a designated team for each OT. The team will consist of
 - a. **Major surgery:** 1 consultant, 1 senior resident, 1 junior resident, 1 OT technician and 1 OT attender.
 - b. **Minor Surgery:** 1 consultant, 1 senior resident, 1 OT technician and 1 OT attender.
2. There will be one anaesthesia technician for all four OTs.

3. There should be a dedicated area for donning and doffing of PPE.

Pre-op holding area:

1. Inform to OT team, to ensure PPE are adequately available and worn properly.
2. Wear full PPE (Cap, Shoe protection covers, water proof gown, Double protection gloves, Goggles, N 95 mask) (Pictures representing donning and doffing of PPE are given below)
3. Avoid unnecessary extra-personnel

Operation theatre preparation:

1. Warning signs (eg: COVID 19 Case) should be displayed on the entrance of the isolation theatre
2. Don't carry any personnel belongings including mobile phone, pen, e-gadgets, keys, wrist watch and stethoscope inside OT
3. Cover all the contact surface areas of anaesthesia machine and monitor with disposable plastic wraps
4. Consider disposable equipment wherever possible. Remove unnecessary equipments.
5. Use HME filter in both " Y" connector end as well as in the expiratory limb.
6. Use passive scavenging system during the procedure.

Intra-operative Management:

1. Consider regional anaesthesia whenever indicated and feasible
2. The patient must wear the mask throughout the procedure.
3. If general anaesthesia considered,

Airway management: "Risk of aerosol transmission is high during airway management"

Precautions to be taken to reduce the aerosol transmission during GA include:

- ✓ Consideration of rapid sequence induction (RSI)
- ✓ Adequately pre-oxygenate with 100 % oxygen and avoid positive pressure ventilation

- ✓ If manual ventilation by bag and mask is required, deliver small tidal volumes
- ✓ Use disposable laryngoscope and blades
- ✓ Consider avoiding LMA (because of risk of aerosol transmission due to inadequate seal). If needed, use disposable AMBU LMA
- ✓ Avoid awake fiberoptic intubation if possible
- ✓ After intubation, positive pressure ventilation only after inflation of ETT pilot balloon
- ✓ Ensure adequate muscle relaxation before attempting intubation to avoid coughing
- ✓ Use single use syringe for pilot balloon inflation for each patient
- ✓ Closed suction system should be used tracheal suctioning if needed
- ✓ Oral suction should be performed with rigid suction catheter instead of soft suction
- ✓ Administer prophylactic antiemetics to reduce the risk of vomiting and retching
- ✓ Plan for smooth extubation to avoid coughing
- ✓ Consider covering the face and mouth of the patient with plastic cover during extubation
- ✓ Immediately after extubation, attach nasal canula with oxygen and cover the patient face with surgical mask.
- ✓ Avoid aerosols therapy like nebulization, steam inhalation to prevent aerosol transmission. Use metered dose inhaler (MDI) if required.
- ✓ Personnel providing anesthetic care, avoid unnecessary movement and keep the operation room doors closed.
- ✓ At the end of case, gas sampling line, D-fend, soda lime, breathing circuit and pre-cut adhesive tapes should be discarded from anaesthesia machine.
- ✓ After surface disinfection of equipment's like anaesthesia machine, defibrillator, infusion pumps and stethoscope, OT should be closed for fumigation.

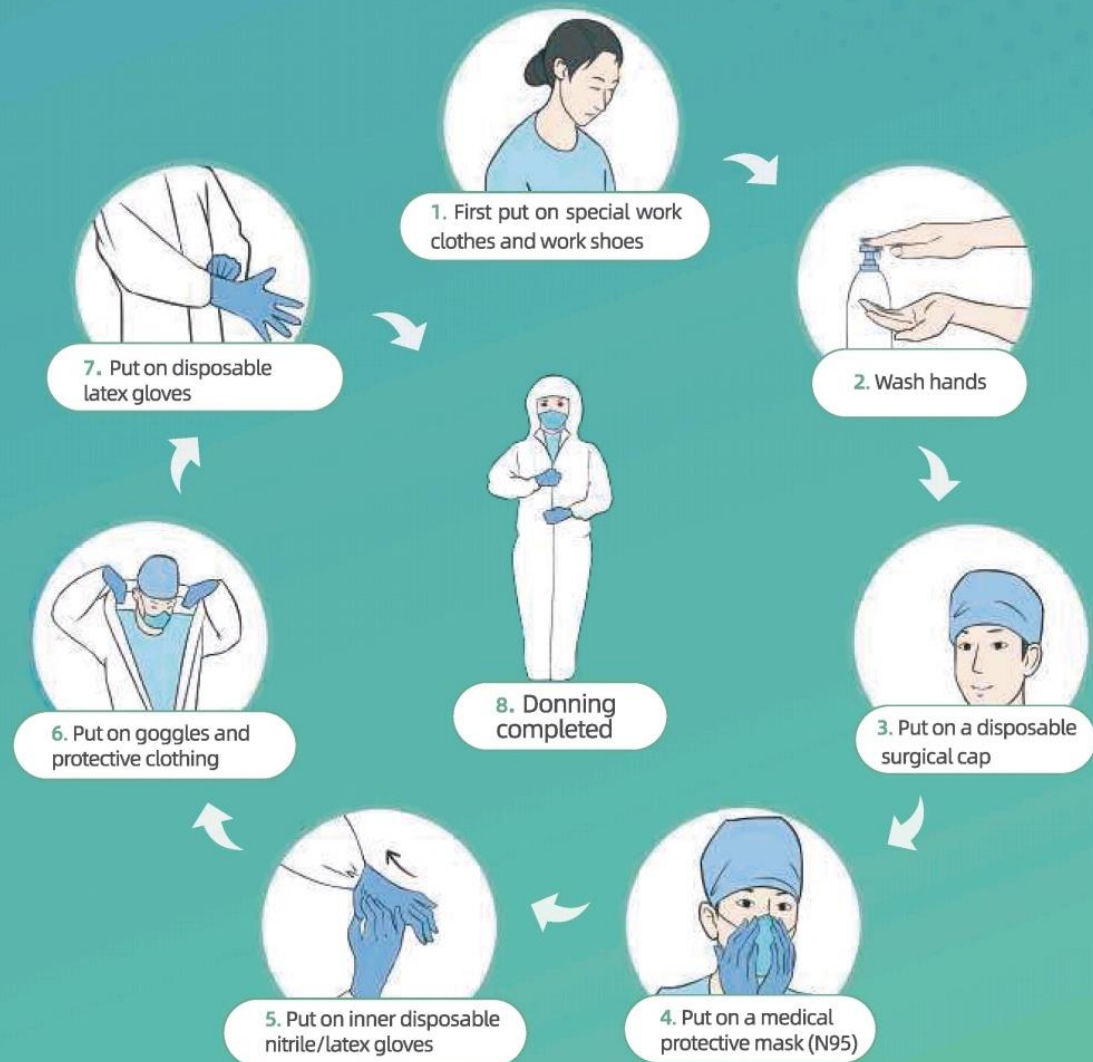
Post-operative management:

- ✓ Recovery in isolation ward
- ✓ Staff and anesthetic personnel should wear full PPE while receiving the patient in recovery room
- ✓ Patient should continue wearing surgical mask until full recovery

Special situations:

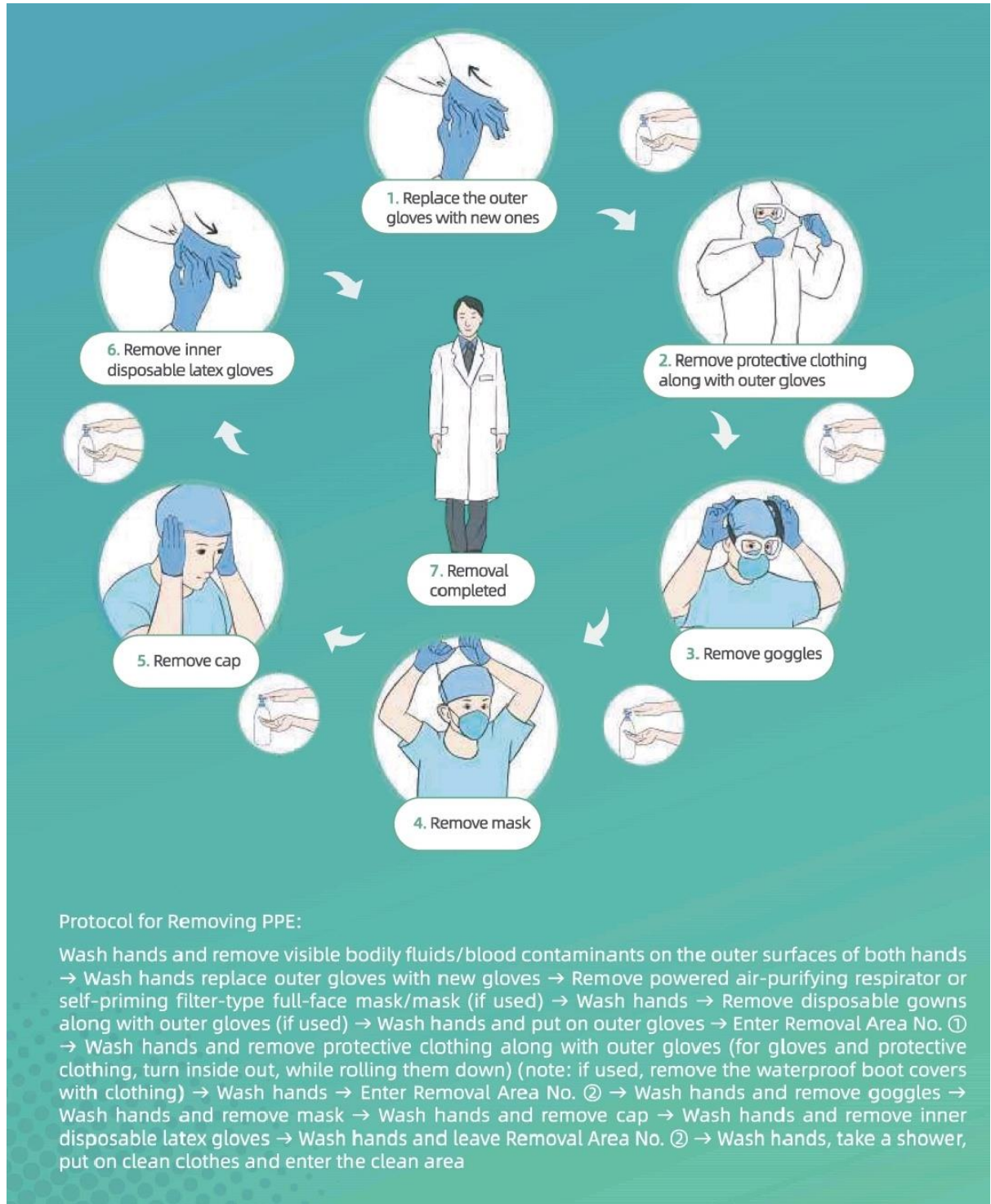
- ✓ A difficult airway cart fully stocked with airway equipment's should be kept in a separate room outside the OR.

1 Guidance on Donning and Removing Personal Protective Equipment (PPE) to manage COVID-19 Patients



Protocol for Donning PPE:

Put on special work clothes and work shoes → Wash hands → Put on disposable surgical cap → Put on medical protective mask (N95) → Put on inner disposable nitrile/latex gloves → Put on goggles and protective clothing (note: if wearing protective clothing without foot covers, please also put on separate waterproof boot covers), put on a disposable isolation gown (if required in the specific work zone) and face shield/powerful air-purifying respirator (if required in the specific work zone) → Put on outer disposable latex gloves



Operating room requirements for for Peri-operative management of suspected or confirmed COVID 19

Required equipment

Essential non-disposable equipment: (for each OT)

1. Anaesthesia Machine with monitor (workstation) and its accessories (Spo2, NIBP, IBP, Capnography, ECG cables) : 1 nos
2. Oxygen cylinders (E type) (Machine backup and for patient transport (with Pressure regulator) : 1nos
3. Medication cart : 1 nos
4. Suction apparatus/ wall mounted suction unit : 2nos
5. Infusion syringe pump : 1 nos
6. Defibrillator : 1 for 3 Ots

Disposable Essential equipment:

1. Disposable laryngoscopes with disposable blades of adult and pediatric sizes
2. Oropharyngeal airway (all sizes)
3. Nasopharyngeal airway (all sizes)
4. Nasal Cannula
5. Face mask – Adult and pediatric sizes
6. L – connector
7. Disposable Stethoscope : 1 nos
8. Bain's circuit and Breathing circuit (circle system)
9. Ambu bag
10. Pressure Bag
11. Suction tubing and Rigid suction catheter (Yanker suction catheter)
12. LMA – AMBU (adult and pediatric sizes)

13. Endotracheal tubes of all sizes
14. HME filters
15. Soda lime
16. Frova intubating introducer, Stylet
17. Intravenous cannula 24 to 16 G
18. Infusion sets
19. Intravenous extension lines – 150, 200 cm
20. ECG electrodes
21. NIBP – Disposable cuffs of all sizes
22. Foleys catheters/ Urinary bags
23. Invasive pressure transducer Set and Mount
24. Capnography – Gas sampling line and D-fend
25. Skin temperature probes
26. Pressure extension lines 25, 100, 150, 200 cm
27. Transparent disposable sheets to anaesthesia machine monitor
28. Transparent clear plastic wraps
29. Spinal needle – 23/ 25 G (Quinke's)
30. Epidural and Combined epidural set
31. Nerve block Needle
32. Central lines – adult and pediatric sizes
33. Sterile disposable drapes for regional anaesthesia
34. Closed suction devices for tracheal suctioning
35. Yanker rigid suctioning tubes for oral suctioning

Equipment required for Special Situations:

1. Difficult airway cart
2. Ambuscope monitor with disposable scopes

Equipment for Recovery Unit:

1. Trolley for patient shifting with Oxygen cylinder with pressure regulator
2. Bain's circuit
3. Suction apparatus
4. Multi parameter monitor