



St John's Medical College Hospital,  
St John's National Academy of Health Sciences, Bengaluru

# What's Up? @St John's Hospital

S1

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## SPECIAL ISSUE ON COVID-19 PANDEMIC

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Issue 41, Supplement 1; Release Date: 01/04/2020

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# MESSAGE FROM THE EDITORIAL TEAM

*Dear All!*

We are releasing the Supplemental for our 41<sup>st</sup> issue of “**What’s Up? @ St John’s Hospital**” magazine today. The current issue is entirely dedicated for the various protocols related to COVID-19 that have been developed by St John’s Medical College Hospital in order to manage the situation effectively. We would like to thank all of you who were involved in preparing these protocols especially department of General Medicine, Chest Medicine, Critical care, Emergency Medicine, HICC, Pharmacy, Laundry, Microbiology, Anatomy, Psychiatry and many others.

Readers, as you are aware, the COVID-19 pandemic is an evolving situation and there are lot of updates every day and therefore the guidelines and recommendations are changing every day. The editorial team has hence taken a conscious decision to release supplements for 41<sup>st</sup> issue, as and when major updates and guidelines are released. This being the first one. This supplement includes all protocol from triage, treatment, prophylaxis, till disinfection. Coping with COVID-19 pandemic for both health professionals and public has also been included in order to take care each and everyone’s mental health. We are happy to dedicate a special section to bring to readers’ notice of our in-house production of hand sanitisers and personal protective equipment.

As usual we look forward to your comments and suggestions. Please feel free to communicate with us to publish your achievements. Feedback on any section of the magazine is welcome. We are happy to evolve to meet the needs to our beloved readers. Take care!!!

**Editorial Team**



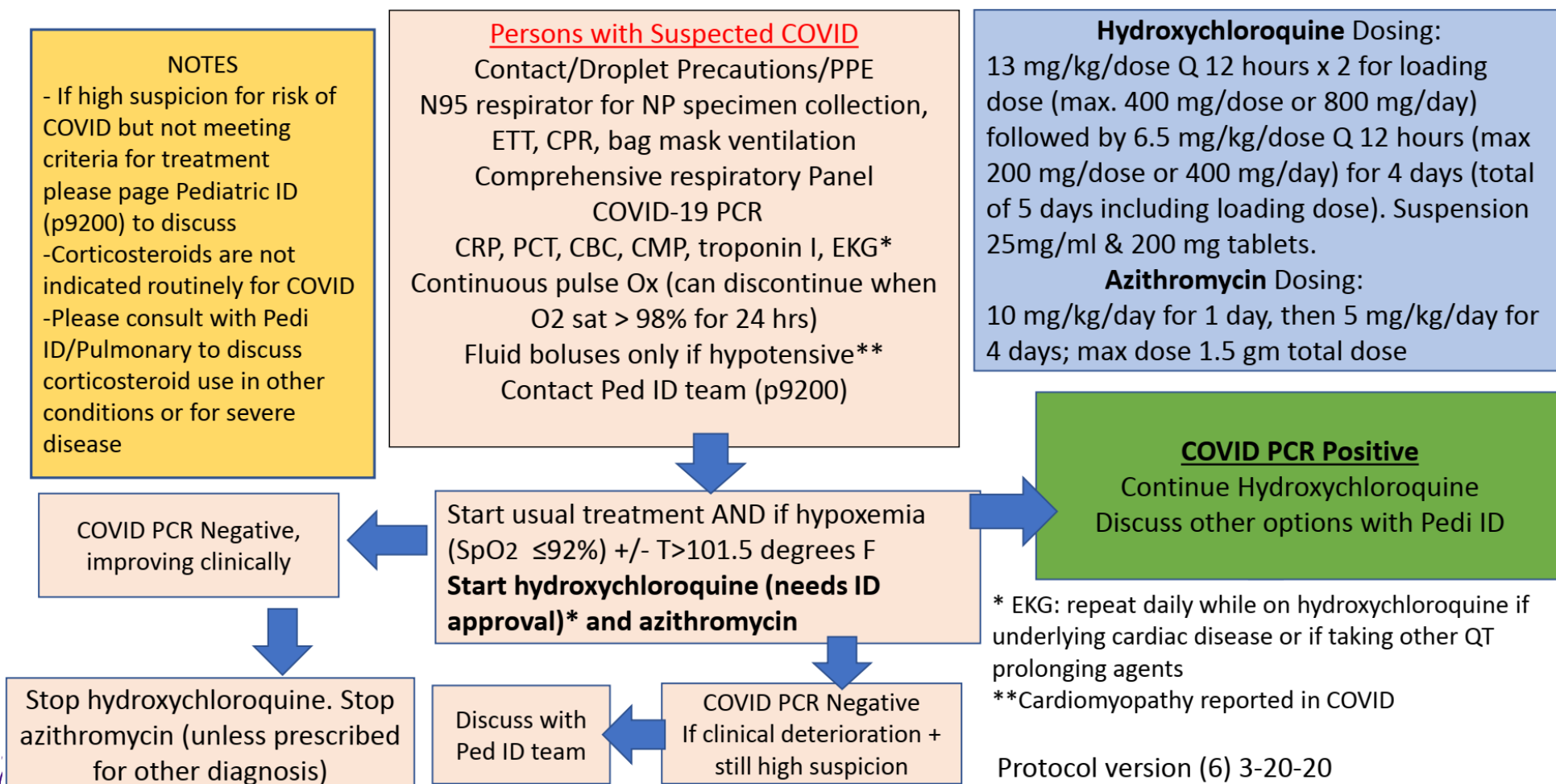
# COVID-19 SCREENING AND MANAGEMENT PROTOCOL v31 March 2020

	Scenario	Swab	Home Isolation/Self Monitoring	Hospital Isolation Ward or MICU if available
A1	ALL Asymptomatic Recent travellers past 14 day Travel from any International Country	NO	HOME QUARANTINE, Daily reporting	NO
A2	Asymptomatic Direct contact (Household OR health worker without adequate PPE) AND High risk (>60 yrs or Diabetic or Heart Disease or Chronic Lung Disorder)	YES (between Day 5 and 14 only)	HOME QUARANTINE, Daily reporting	NO
S3	ALL Symptomatic Recent travellers past 14 day Travel from any International Country	YES	NA	HOSPITAL COHORT ISOLATION/ICU***
S4	ALL Symptomatic Close contact* with Lab confirmed COVID-19 patient	YES	NA	HOSPITAL COHORT ISOLATION/ICU***
S5	ALL symptomatic Health Care Worker	YES	NA	HOSPITAL COHORT ISOLATION/ICU***
S6	ALL Severe Acute Respiratory Illness hospitalised <u>irrespective</u> of Travel or Close Contact ***	YES	NA	HOSPITAL MICU
S7	ALL Symptomatic with <u>NO</u> International travel, <u>NO</u> Close Contact, <u>NOT</u> a HCP, <u>BUT</u> with a history of attending a large gathering (eg. more than 25 persons) for family, religious or political reasons in past 14 days.	Consider YES	NA	HOSPITAL COHORT ISOLATION/ICU***

All Swabs for GOI approved labs require GOK permission after submission of necessary forms BEFORE Swabs

\*\*\* Patient with [Fever **AND** Cough **AND** Breathlessness] **AND** {persistent Tachypnea RR >30 per min **AND/OR** Oxygen Saturation <90% in room air} which requires hospitalisation.

## PAEDIATRIC COVID-19 TREATMENT PROTOCOL v20 March 2020



**CONTENTS**

# Treatment protocol for Suspected nCoV Infection

## Hydroxychloroquine

**Oral:** Hydroxychloroquine sulfate 200 mg TID for 10 days.

Azithromycin 500mg OD for 5 days, combination can be considered to enhance viral clearance.

*Combination therapy may predispose to QT prolongation----needs close ECG monitoring.*

### **Serious adverse effects may include:**

- QT prolongation & Torsades de Pointes
- Reduction in seizure threshold
- Anaphylaxis or anaphylactoid reaction
- Neuromuscular impairment
- Neuropsychiatric disorders (potential to increase delirium)
- Pancytopenia, neutropenia, thrombocytopenia, aplastic anaemia
- Hepatitis

*HCQ May require dose adjustment in renal or hepatic dysfunction.*

Alternative regimen for Severe nCOV– Lopinavir/Ritonavir combination therapy

### **A. When to consider lopinavir/ritonavir combination ?**

Hospitalized adult patients with laboratory-confirmed nCoV infection with any one of the following criteria will be eligible to receive lopinavir/ritonavir for 14 days:

1. Respiratory distress with respiratory rate  $\geq 22$ /min or SpO<sub>2</sub> of  $< 94$  per cent
2. Lung parenchymal infiltrates on chest X-ray
3. Hypotension defined as SBP  $< 90$  mmHg or need for vasopressor/inotropic medication;
4. New-onset organ dysfunction
  - (a) Increase in creatinine by 50 per cent from baseline, glomerular filtration rate (GFR) reduction by  $> 25$  per cent from baseline or urine output of  $< 0.5$  ml/kg for six hours, (b) Reduction of Glasgow Coma Scale (GCS) score by two or more, and (c) Any other organ dysfunction.
5. High-risk groups
  - Age  $> 60$  year
  - Diabetes mellitus,
  - Renal failure,
  - Chronic lung disease and
  - Immunocompromised persons.

# Treatment protocol for Suspected nCoV Infection

## B. When not to start this regimen ?

1. A patient with hepatic impairment (Child Pugh C or alanine aminotransferase (ALT) over 5 times the upper limit of normal)
2. Use of medications that are contraindicated with lopinavir/ritonavir and that cannot be replaced or stopped, e.g., rifampicin, benzodiazepines, simvastatin, voriconazole and sildenafil.
3. Known HIV-infected individual receiving other protease inhibitors containing regimens that cannot be replaced by lopinavir/ritonavir.

## What is the dosage of lopinavir/ritonavir regimen ?

Combination tablet content: Lopinavir/ritonavir (200 mg/50 mg)

- Oral Regimen: **Two** tablets every 12 h for 14 days or for seven days after becoming asymptomatic, whichever is earlier.
- Nasogastric tube (for patients who are unable to take medications by mouth): 400 mg lopinavir /100 mg ritonavir suspension every 12 h for 14 days or seven days after becoming asymptomatic whichever is earlier.

## C. How do you monitor patient receiving this regimen ?

Parameters	Days during admission period														
	D0	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14
Haemogram <sup>®</sup>	✓		✓		✓		✓		✓		✓		✓		✓
Liver function test <sup>*</sup>	✓		✓		✓		✓		✓		✓		✓		✓
Renal function test <sup>†</sup>	✓		✓		✓		✓		✓		✓		✓		✓
HbA <sub>1c</sub> and blood sugar	✓														
qRT-PCR for SARS-CoV-2	✓			✓			✓			✓			✓		
Electrolytes	✓		✓		✓		✓		✓		✓		✓		✓
PT/INR, arterial blood gas	✓														
Lipid profile	✓														
Chest X-ray	✓							✓							✓
ECG	✓		✓		✓		✓		✓		✓		✓		✓
HBV and HCV ELISA	✓														

<sup>®</sup>Hb%, total leucocyte count and differential WBC - neutrophils, lymphocytes, eosinophils, monocytes and basophils, RBC count, platelet count; <sup>\*</sup>Renal function test - BUN, Creatinine; <sup>†</sup>Liver function test - albumin, bilirubin, ALT, AST, alkaline phosphatase. AST, aspartate transaminase; ALT, alanine aminotransferase; RBC, red blood cell; WBC, white blood cell; BUN, blood urea nitrogen; HBV, hepatitis B virus; HCV, hepatitis C virus; ECG, electrocardiogram; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2; qRT-PCR, real-time reverse transcription-polymerase chain reaction; PT, prothrombin time; INR, international normalized ratio; HbA<sub>1c</sub>, haemoglobin A<sub>1c</sub>; Hb, haemoglobin

**Notes:** No renal dose modification required. Crushing and administering tablets may decrease absorption by ~50%



# Treatment protocol for Suspected nCoV Infection

## Serious adverse effects:

- Hypersensitivity reaction, angioedema
- Stevens-Johnson syndrome / Toxic epidermal necrolysis / Erythema multiforme
- QT prolongation & Torsade de Pointes
- AV block, PR prolongation
- Hyperglycemia, hypertriglyceridemia
- Renal failure
- Anaemia, leukopenia, neutropenia
- Pancreatitis
- Hepatotoxicity

## Contraindicated in:

- Cardiac disease (ischemic heart disease, cardiomyopathy, structural heart disease, QT prolongation)
- Liver disease

**\*\* Please note that this is an emerging situation and this protocol is subjected to changes with ongoing updates in literature \*\***

## Adapted from:

- 1) Tarun Bhatnagar et al. Lopinavir/ritonavir combination therapy amongst symptomatic coronavirus disease 2019 patients in India: Protocol for restricted public health emergency use. *Indian J Med Res.* DOI: 10.4103/ijmr.IJMR\_502\_20.
- 2) Cao B, Wang Y, Wen D, et al. A trial of lopinavir-ritonavir in adults hospitalized with severe COVID-19 [published online March 18, 2020]. *N Engl J Med.* doi: 10.1056/NEJMoa2001282.
- 3) Gautret et al. (2020) Hydroxychloroquine and azithromycin as a treatment of COVID-19: results of an open-label non-randomized clinical trial. *International Journal of Antimicrobial Agents – In Press 17 March 2020 – DOI : 10.1016/j.ijantimicag.2020.105949.*
- 4) <https://www.cdc.gov/coronavirus/2019-ncov/hcp/therapeutic-options.htm>



## Respi ER protocol

### Important Points:-

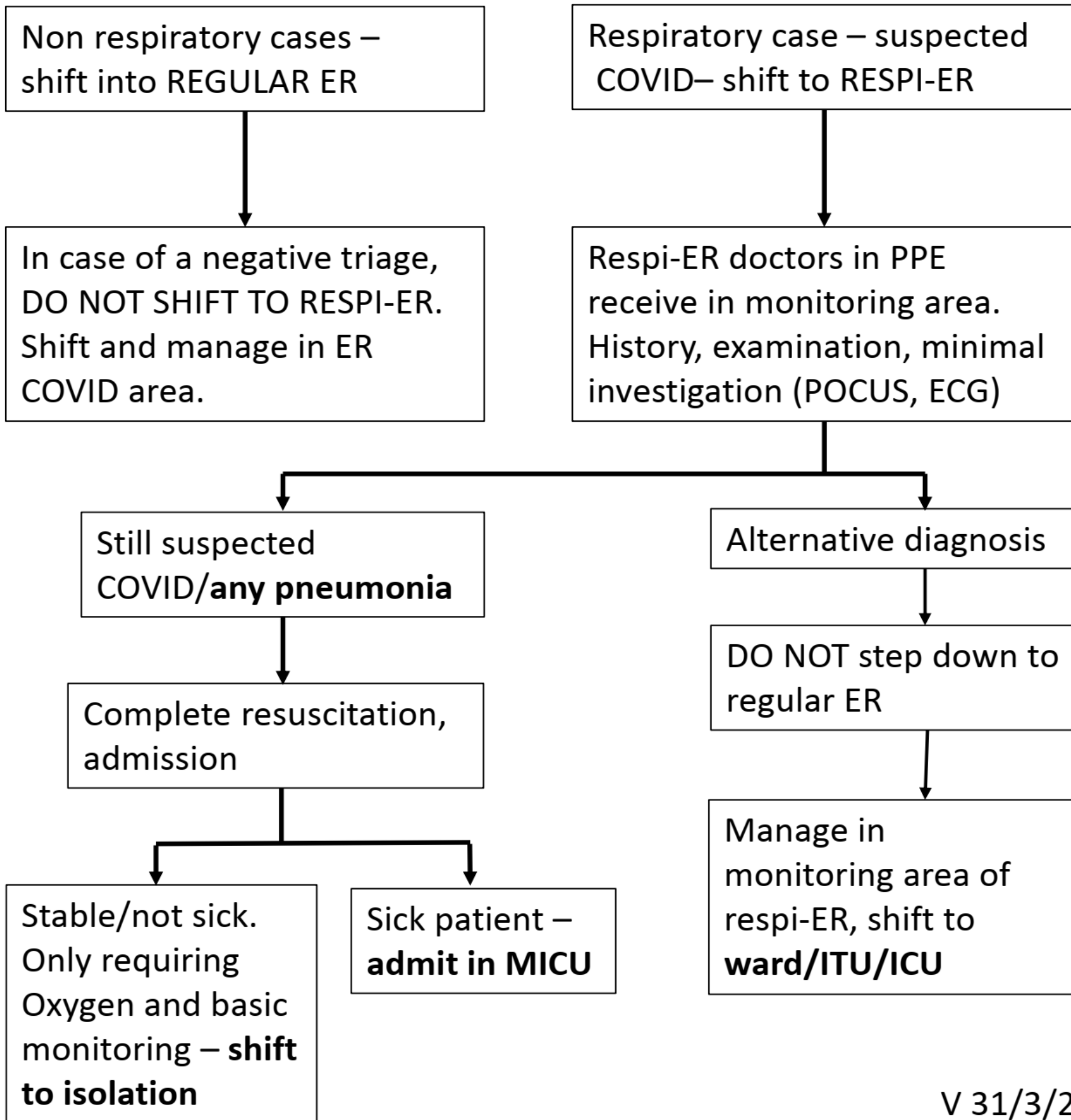
- Consultant in ER stable side to triage and strictly follow triaging based on the updated grid & protocol (31/03/2020).
- Stable walk-in suspected cases to be shifted to flu clinic, not Respi-ER.
- Consultant on shift in ER to ensure triage in ambulance / vehicles to ensure transfer to Respi-ER if required.
- Pay special attention to previous / outside hospital records to help make a proper decision. To ask for history of attending large gatherings of over 25 people in the last 14 days.
- In case of negative triage in either area, do not step up / step down between the 2 ER's to avoid confusion.
- Doctors in Respi-ER to put on goggles and N95 masks through the entire shift.
- Wear full PPE for all aerosol generating procedures like intubations.
- Do not leave area with PPE on except for shifting patient to ICU.
- Minimal investigation in Respi-ER. Depend on history, clinical examination, records & USG to make a clinical decision.
- Shift all patients out of Respi-ER as soon as possible ( be it suspected COVID / Negative triage alternate diagnosis). Aim for 20-30 minutes. This will ensure that negative triage alternate diagnosed cases spend minimal time in exposure.
- In case of more than one patient ensure distance between beds is atleast 6 ft. Change gloves and wash hands between every patient contact.
- Ask for help from senior faculty if needed.
- Ensure disinfection after every suspect case.
- All pneumonias from here on to be treated as suspected COVID.
- Admit stable patients with no tachypnea and just requiring O2 and basic monitoring to isolation ward. Unstable cases with high O2 requirement/tachypnea/requiring continuous monitoring to be admitted to COVID ICU.
- If ICU on discussion decides to admit patient to regular pool ICU its their call but shifting team to take full precautions.
- No swabs for any cases to be taken in Respi-ER. Microbiology will be informed from admitting area, they will then write a mail to the proper authorities, and if given clearance will come and collect sample.





# Respi ER protocol

**PATIENT PRESENTING TO ER MUST BE TRIAGED BY CONSULTANT WHILE STILL IN AMBULANCE – QUICK HISTORY AND RECORDS REVIEW. (LOOK FOR – H/O LARGE GATHERING >25 PEOPLE IN PAST 14 DAYS)**



V 31/3/20

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# Intubation protocol for suspected COVID-19 cases

## I. Personnel:-

Consultant on airway (only one to examine patient)  
 Nurse on drugs  
 Resident on ventilator and equipments  
 EMT on cricoid pressure if needed

## II. Equipment:-

Crash cart with monitor on the right of airway doctor  
 Ventilator with full circuit as in picture, on the right of airway doctor  
 O2 cylinder with ventilator connector under trolley  
 O2 cylinder with humidifier on stand on the left of airway doctor  
 Humidifier on wall O2 supply for NRBM  
 NRBM & Nasal prongs  
 Videolaryngoscope blade 3  
 Macintosh blade  
 ET tube with bougie



# Intubation protocol for suspected COVID-19 cases

## III. Decision making:-

Suspected COVID-19 positive cases with tachypnea and hypoxia (Hemodynamic instability to be considered) needing intubation. If in doubt and can stabilize patient on O<sub>2</sub> and buy time, intubation may be considered in the ICU isolation room.

## IV. Donning PPE:-

Goggles and N95 mask first

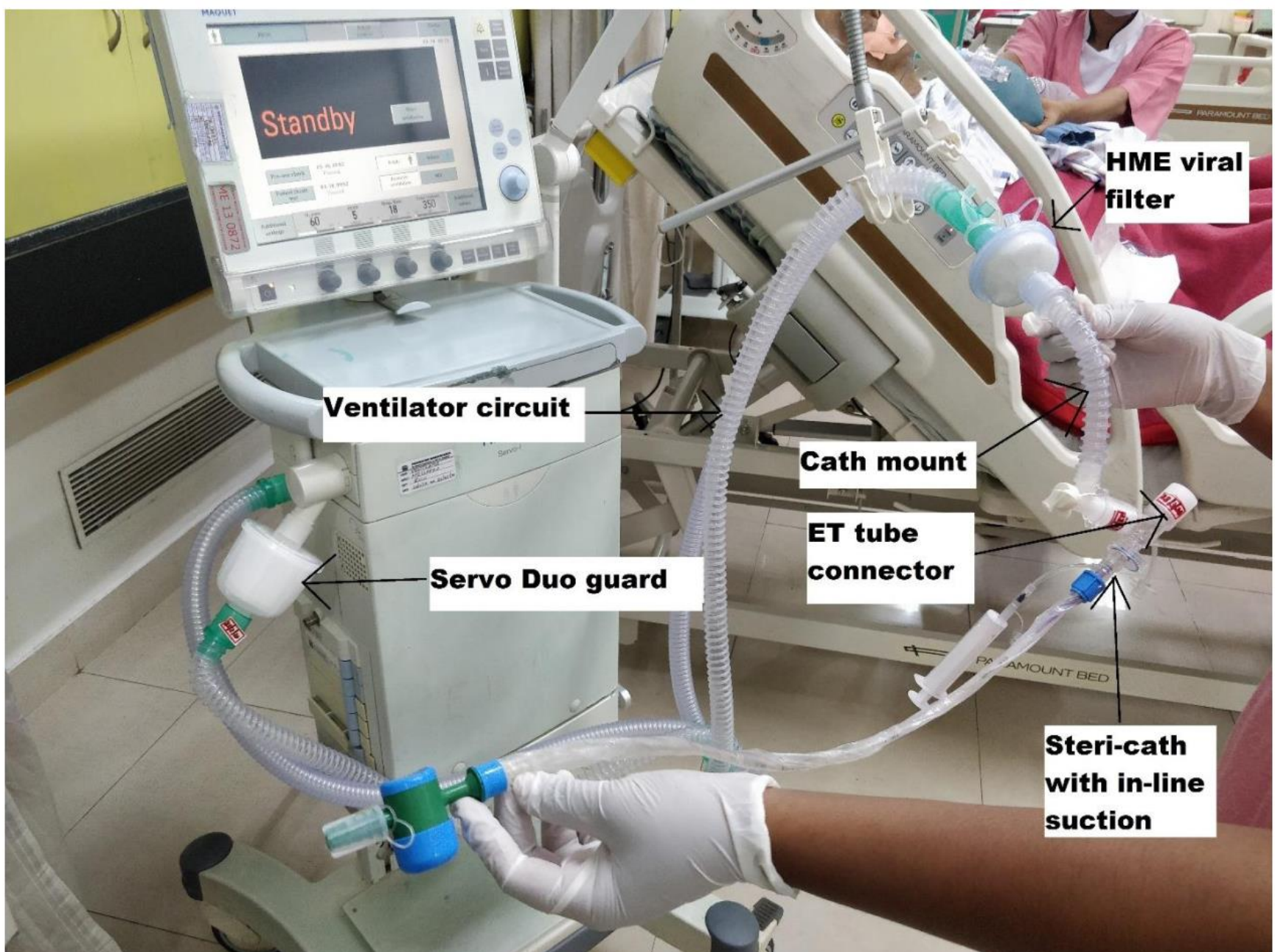
Followed by suit fully zipped

Leg sleeves

3 sets of gloves (Unsterile is also OK as far as it does not tear)

OHP sheet as visor, tied/taped tightly

Checked by buddy



# Intubation protocol for suspected COVID-19 cases

## Preparation Phase:-

Proper donning to be ensured & double checked by a buddy for all personnel involved before entering resuscitation bay.

Discuss & review plan in order with team.

Only consultant incharge of airway examines patient.

Patient to be connected to monitors.

Portable O2 cylinder on trolley of the patient.

Patient put on Nasal prongs at 12L/min connected to stand O2 cylinder humidifier.

Patient put on non-rebreathing mask at 15L/min to wall O2 humidifier.

Pre-set ventilator settings with, Circuit -to- HME viral filter -to- Cath mount -to- Steri Cath with suction, connected & ready.

Ventilator O2 line plugged to wall O2 supply. Ensure connected to power source.

Load all drugs & mark.

Videolaryngoscope with ET tube (with bougie optional) loaded and checked.

Mackintosh blade to be kept ready if needed.

Yellow cover on right of airway incharge, blue/green cover on left of incharge.

## Pre-Oxygenation:-

With nasal prongs & NRBM for extended period than normal (minimum 5 min).

Do not nebulize. Do not use NIV.

## Pre-Medication:-

Glycopyrrolate 1 amp IV to reduce secretions.

Lignocard 1.5 mg/kg (1ml = 21mg). Suppresses cough reflex.

## Paralysis & Sedation:-

Sedation with choice of drug (Etomidate/Propofol/Ketamine).

Succinylcholine 2mg/kg (1ml = 50mg).

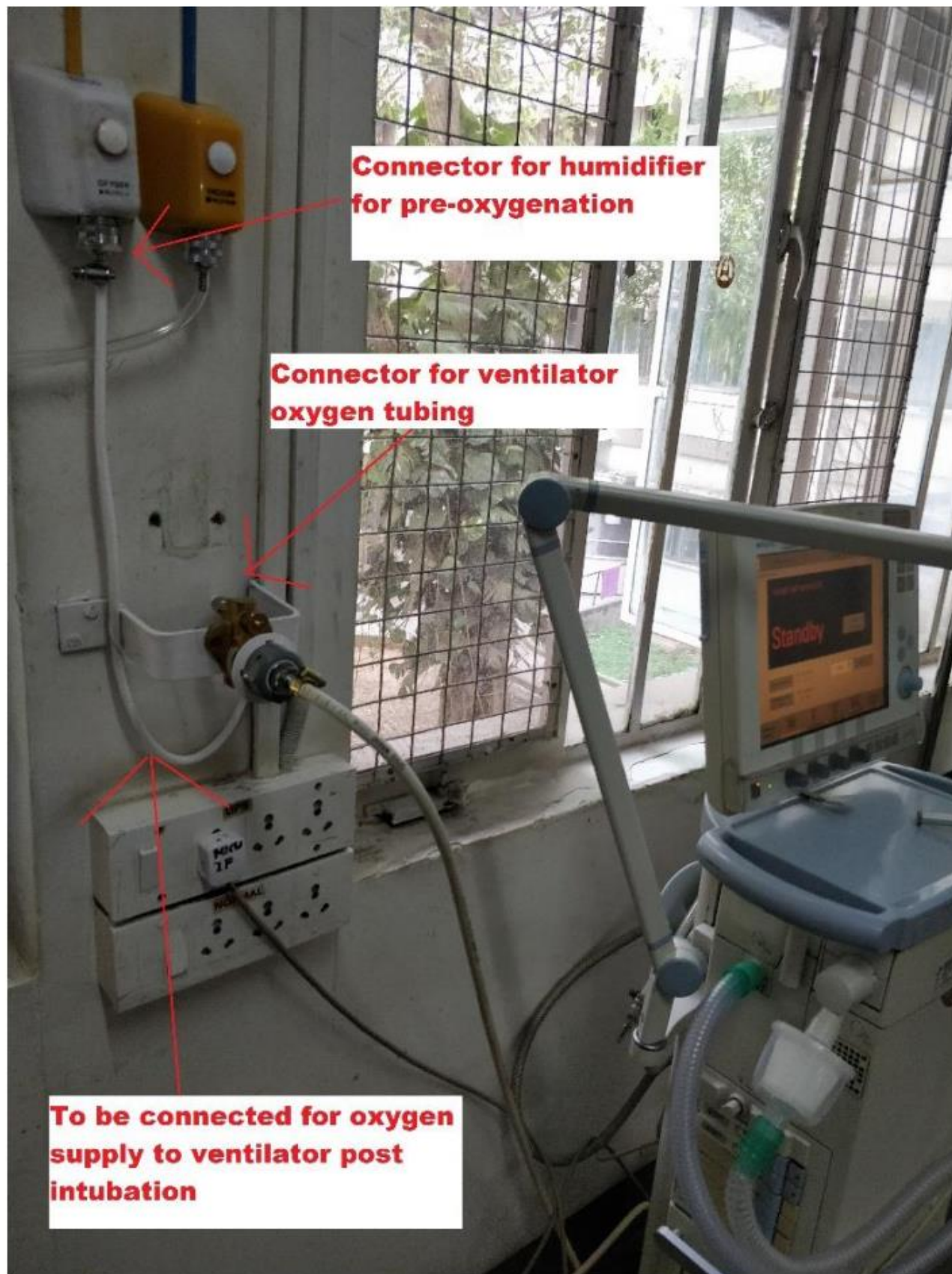
## Patient positioning:-

Switch O2 off from NRBM before taking the mask off the patients face.

**DO NOT USE SUCTION**

The resident to disconnect the humidifier from the wall and connect white tube from the ventilator wall port to the wall O2 port at this point as picture below.

# Intubation protocol for suspected COVID-19 cases



## Placement of tube:-

DO NOT USE SUCTION

Use Videolaryngoscope preferably. Loaded with ET tube.

If using bougie load ET tube into groove with bougie.

Place tip of VL in vallecula such that the tip of epiglottis is visualized (rather than a clear view of the cords).

After guiding ET tube into trachea, pull it out of the groove to the right and then retract the VL.

Dilate the ET cuff.

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# Anaesthetic Management of Suspected/ Confirmed COVID-19 Patients

## Preparation:

- Patient transferred to OR directly from isolation ward, PAC in OR (no preop holding area)
- Consent over phone (to be verified)
- All staff to wear PPE
- Dedicated OT/sign boards
- ORs with closed doors are recommended
- AC off
- Pre-assign a team for intubation- Roles:
  - a) Consultant-Manages airway
  - b) Assistant - PG- loading drugs/ ventilator settings, fluids
- Arrange intubation tray using a checklist\*
- Standard anaesthesia monitoring (invasive if required, femoral cannulations over IO band)
- Rapid pre-op airway assessment in OR
- Drug tray to be prepared by PG before patient entry, narcotics to be preloaded and ampoules to be handed over to Runner before patient arrival
- Disposable electric suction, no wall suction device to be used
- IV access with 100cm extension tubing attached with 3 way connected to infusion tubing for administration of drugs

## Machine:

- Cover machine and monitor with transparent plastic sheet
- New circuit (single use) for every patient
- HME filter between face mask and ETT
- Second filter between expiratory limb and machine
- Gas sampling line and Defend water trap, soda lime absorber, circuit to be discarded at the end of the case

## Anaesthetic Technique:

- Regional anaesthesia
- Put surgical mask or N-95 mask on the patient
- If indicated, supplementary oxygen mask over N95 mask with 3-4L/min of Oxygen
- Maintain safe minimum distance from patient's airway
- Transparent sheet over chest area and face of the patient
- In case of conversion to GA, remove the mask of the patient only when absolutely ready for induction
- Regional peripheral nerve blocks- use of USG avoided in view of availability of only one machine in the OR

# Anaesthetic Management of Suspected/Confirmed COVID-19 Patients

## General anesthesia:

\*All adjustments of the knobs on the machine to be done by the assistant (PG)

\*2-3 suction catheters of appropriate size to be kept and discard after each use

## Pre-oxygenation:

- Five minutes of pre-oxygenation with 100% O<sub>2</sub>
- Use closed circuit
- Flow less than 6 litres per minute to reduce aerosolization
- Remove N95 of the patient, place two wet gauzes over patients mouth and place the face mask for preoxygenation
- CPAP 20-30cm H<sub>2</sub>O
- Use EC grip with two hands to hold mask while pre-oxygenating

## Induction:

- RSI
- Avoid positive pressure ventilation (if Sats <92%, minimal tidal volume ventilations can be done)
- Induce with Midaz: 1-2 mg, Fentanyl 100mcg and Ketamine/Propofol/Etomidate followed by Sux 2 mg/kg
- Wait for 45 seconds
- Direct laryngoscopy / Videolaryngoscope, maximizing distance between patient and provider
- Use bougie or stylet if there is poor glottic visualization
- Inflate cuff with 6ml of air and put a HMEI filter at ETT end,
- Clamp the ETT and then connect to circuit.
- Unclamp and Confirm tube position by ETCO<sub>2</sub> ; place it 1-2cm below cords and avoid endobronchial intubation
- Fix tube
- Re-sheath the laryngoscope blade with outer glove worn by the operator
- Adjust ventilator settings on the machine to be done by the assistant (PG)
- Use low gas flows
- Limit ventilatory disconnections and if needed, place a clamp on ETT
- If failed intubation, put a second generation Supraglottic airway device and ventilate
- Avoid BMV( if Sats <92%, minimal tidal volume ventilations can be done)
- If required, apply small tidal volumes

# Anaesthetic Management of Suspected/ Confirmed COVID-19 Patients

## Induction (contd.):

- Use closed airway suction system
- Avoid awake FOB, nebulization and high flow oxygenation
- Insert an NG (do not deflate the ETT cuff, if required, clamp and then deflate for passage of NGT)
- Prophylactic anti-emetic drug 4mg ondansetron at induction and before extubation along with dexamethasone 6mg)
- Transparent sheet over chest area and face of the patient

## Extubation:

- Place a transparent plastic sheet over the patient's face during extubation
- Limited oral suctioning when patient is deep may be performed with care not to precipitate coughing
- Lignocaine 1mg/kg may be used to attenuate extubation response
- N-95 mask may be kept over the patient's face after extubation
- Immediately place simple oxygen mask onto the patient

## Drug tray:

Drug tray to be prepared by PG before patient entry, narcotics to be preloaded and ampoules to be handed over to Runner before patient arrival

**Premedication :** Glyco, Midaz and Emeset

**Induction agent :** Propofol/ Etomidate / Ketamine/ Midaz

**Muscle relaxants:** Suxamethonium and Atracurium/ Rocuronium

**Narcotics:** Fenatnyl / Morphine/ Pethidine

## Airway Equipment tray:

- Suction catheters 2-3 in numbers 12/14/16G
- ETT- 6.5/ 7.0 /7.5/8.0/8.5 mm
- Laryngoscope- Macintosh and Mac Coy's blade
- Kingvision videolaryngoscope, 10% spray
- LMA (size 3 / 4)
- Bougie
- Guedel airway size 3 / 4
- Micropore/Adhesive tapes
- Scissors



# SOP for COVID-19 in ICU

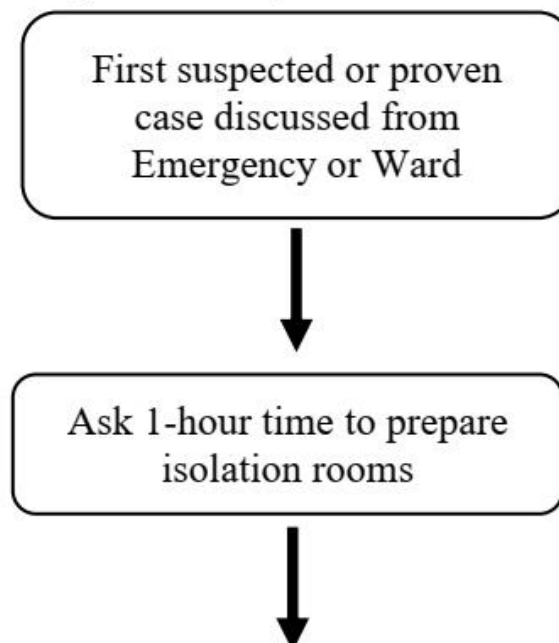
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### 1. Admission criteria:

- Any patient with severe acute respiratory illness (fever, cough, breathlessness with tachypnea > 30 /min; oxygen saturation < 90%; chest x-ray infiltrates) with/without
- Travel history from any international country, or
- Close contact with proven case of COVID-19 in the past 14 days, or
- HCP managing severe acute respiratory illness cases, when they are symptomatic

### 2. Workflow plan for 1<sup>st</sup> suspected or proven case:



# SOP for COVID-19 in ICU

Shift out all the patients from isolation rooms (8 beds) either to outside ICU beds, 2<sup>nd</sup> floor ICU, ITU or ward after communicating with concern executives



Entry should be from door adjacent to elevator  
No one enters this area without a surgical mask  
Seal the door communicating isolation rooms to outside ICU beds



Hand rub, N95 mask & shoe cover kept in lounge  
Nurses room for donning PPE  
Bed no. 5677 (negative pressure) for patient  
Bed no. 5674 for doffing PPE

### 3. Workflow plan for 2<sup>nd</sup> and subsequent suspected or proven cases:

Entry should be from door adjacent to elevator  
No one enters this area without a N95 mask



Hand rub, N95 mask & shoe cover kept in lounge  
Nurses room for donning PPE  
Bed no. 5674 for doffing PPE



For 2<sup>nd</sup> case: Bed no. 5678 (negative pressure) for patient  
Subsequent cases: Other isolation rooms (upto 8 cases)  
More than 8 cases: Outside isolation beds

# SOP for COVID-19 in ICU

## 4. Personal Protective Equipment (PPE):

### Hand Hygiene:

1. Follow 5 moments of hand hygiene as per WHO guidelines
2. Follow 7 steps of hand hygiene as per WHO guidelines

### Donning of N95 mask:

#### Prerequisites

1. WASH YOUR HANDS THOROUGHLY BEFORE PUTTING ON AND TAKING OFF THE MASK.
2. If you have used a respirator before that fit you, use the same make, model and size.
3. Inspect the respirator for damage. If it appears damaged, DO NOT USE IT.
4. Replace it with a new one.
5. Do not allow facial hair, hair, jewelry, glasses, clothing, or anything else to prevent proper placement or come between your face and the respirator. Follow the instructions that come with your respirator

### Steps to wear N95 mask:

1. Position the mask in your hands with the nose piece at your fingertips
2. Cup the mask in your hand allowing the headbands to hang below your hand. Hold the mask under your chin with the nosepiece up
3. The top strap (on single or double strap masks) goes over and rests at the top back of your head. The bottom strap is positioned around the neck and below the ears. Do not crisscross straps
4. Place your fingertips from both hands at the top of the metal nose clip (if present)
5. Slide fingertips down both sides of the metal strip to mold the nose area to the shape of your nose

### Steps to check the seal of your N 95 mask:

1. Place both hands over the respirator, take a quick breath in to check whether the respirator seals tightly to the face
2. Place both hands completely over the respirator and exhale. If you feel leakage, there is not a proper seal
3. If air leaks around the nose, readjust the nosepiece as described. If air leaks at the mask edges, re-adjust the straps along the sides of your head until a proper seal is achieved

# SOP for COVID-19 in ICU

## Doffing of N95 mask:

1. DO NOT TOUCH the front of the mask (It may be contaminated)
2. Remove by pulling the bottom strap over back of head, followed by the top strap, without touching the respirator
3. N 95 masks will be disposed in the yellow bin near restroom
4. Wash hands with soap and water

Click here for explanation with pictures:

<https://www.cdc.gov/niosh/docs/2010-133/pdfs/2010-133.pdf>

## Steps of Donning PPE:

Nursing room (adjacent to female doctor's room) is for donning PPE

1. Hand Hygiene with alcohol rub
2. Wear N95 mask
3. Wear the shoe covers
4. Perform hand hygiene
5. Put on your disposable goggles. For people with spectacles, use the 3M goggles provided separately (looks like swimming goggles)
6. Wear the disposable coverall/gown and pull up the zipper (make sure neck is completely covered)
7. Perform hand hygiene
8. Wear sterile gloves and create a good seal around the sleeves of the coverall
9. Wear disposable gloves over the sterile gloves. (The outer gloves will be changed between patients/procedures)

## Steps of Doffing PPE:

Bed no. 1674 for doffing

1. Perform hand hygiene over infected gloves
2. Pull down the zipper and lower the hood
3. Remove the outer glove and dispose in the red bin
4. Without touching the front of the coverall, slip your hand on the inner side of the coverall and roll down the sleeves, roll the gown all the way down into a ball and dispose it in a yellow bin. The shoe covers also usually come off in along with the gown. if not remove separately
5. Perform hand hygiene, clasp the goggles close to the ear and dispose in a separate bin for goggles without touching the front of the goggles
6. Remove the outer gloves, dispose in red bin and perform hand hygiene
7. Remove N95 mask. First pull the lower strap and then upper strap and while leaning over the yellow bin allow it to drop directly into it

**CONTENTS**



# SOP for COVID-19 in ICU

By no means should you touch the front of the mask and outer part of coverall/gown while doffing. Also avoid touching front of the mask/adjusting the mask once you're in the isolation ICU/caring for the COVID patient

## Airway management:

The airway management include, intubation, extubation, prone ventilation, non-invasive ventilation, tracheostomy, suctioning trachea, and bronchoscopy. The following information is more of experience based with support of evidence. The idea is to get maximal success with minimal complications in majority of patients.

The check list to be followed are

1. Instruments
  - a. Laryngoscope
    - i. Flexi-tip, 3 & 4
    - ii. Conventional, size 3 & 4.
    - iii. Check the function of light
    - iv. Video laryngoscope
  - b. Stylet and bougie
  - c. AMBU (PEEP valve) with reservoir connected to oxygen
  - d. Functioning of Suction, attach suction catheter
  - e. Two syringe pump attached to stand with power cord
  - f. USG machine stand by
  - g. NIV mask – 2 mask with proper straps
2. Ventilator
  - a. Switch on ventilator, confirm testing is done
  - b. CPAP + PSV mode with 100% FiO<sub>2</sub>, PEEP-5 cmH<sub>2</sub>O, PS- 8cmH<sub>2</sub>O
  - c. Attach ETCO<sub>2</sub>, HME, catheter mount, mask (NIV, face mask) in sequence, keep NIV mask straps free
3. Drugs
  - a. Etomidate – 20mg (0.3mg/kg) or
  - b. Ketamine (1-2mg/kg)-100mg
  - c. Succinyl scoline 100mg (1.5mg/kg)
  - d. Rocuranium-100mg (0.9mg/kg)  
→Remember 100 rule ( ketamine, Scoline, Rocuronium, Fentanyl – 100)
  - e. Check Noradrenaline, keep ampule outside with 50mL syringe, 100mL 5%D. Load noradrenaline and attach to syringe if hypotensive or potential for hypotension
4. Prepare sedation
  - a. Load and attach fentanyl syringe before intubation procedure.
5. Monitor
  - a. Switch on the monitor
  - b. Keep wires free
  - c. Attach ETCO<sub>2</sub> an check the functioning
6. Keep tracheostomy tray nearby, two 14G cannula, guide wire dialysis catheter-2

# SOP for COVID-19 in ICU

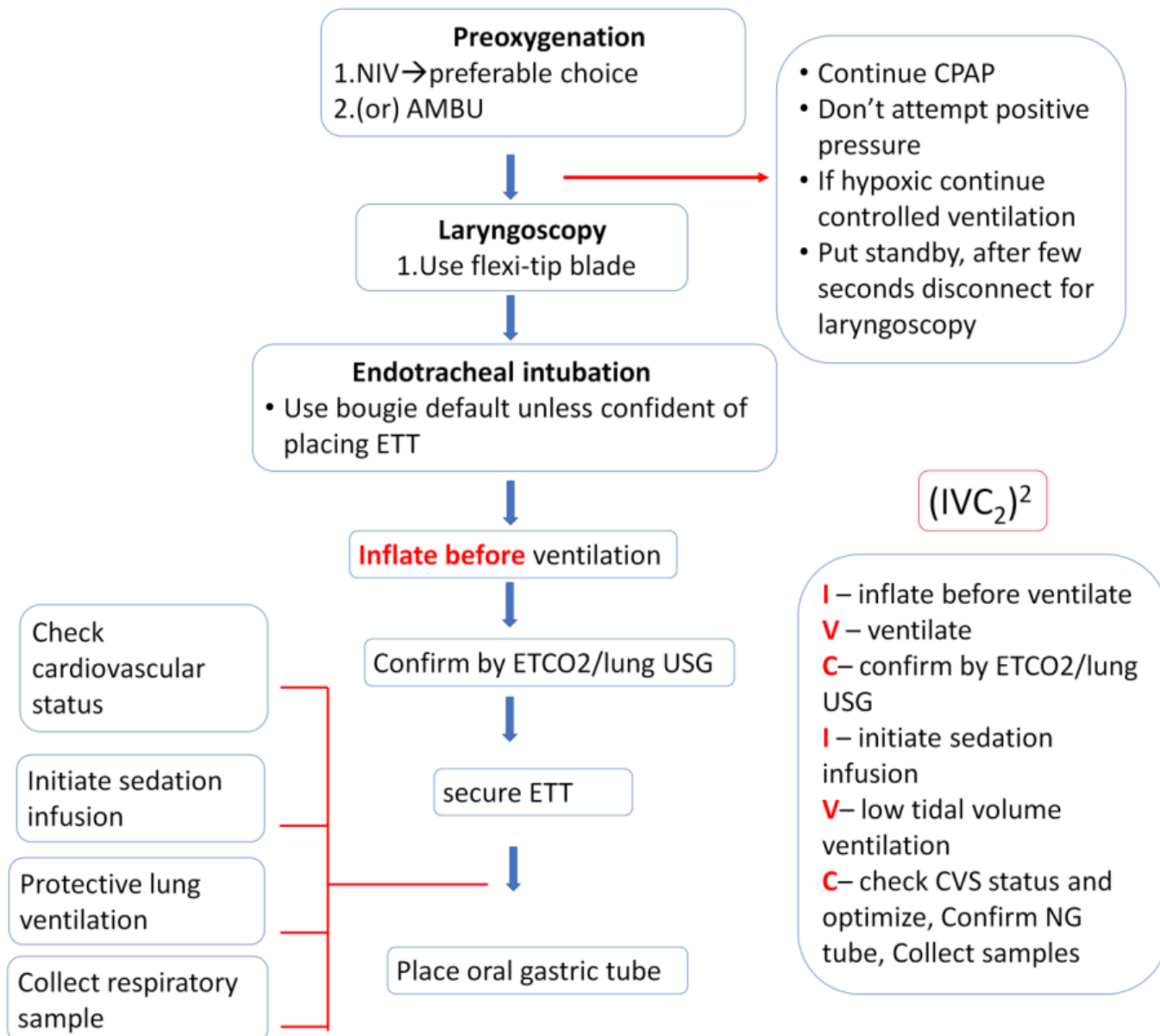
7. Call off floor for backup – the person for help keep herself/himself ready
  - a. Wearing scrubs
  - b. Hand washed and PPE in hand. Wait in nursing station

When patient arrives:

1. Nursing staff
  - a. Checks the patency of i.v. access. Connects RL/NS and check good flow.
  - b. Takes ABG, GRBS as necessary
2. Physician
  - a. Rapidly assess the patient – ABCDE
  - b. Identifies potential difficult airway
  - c. Formulate a plan

Tracheal intubation flowchart:

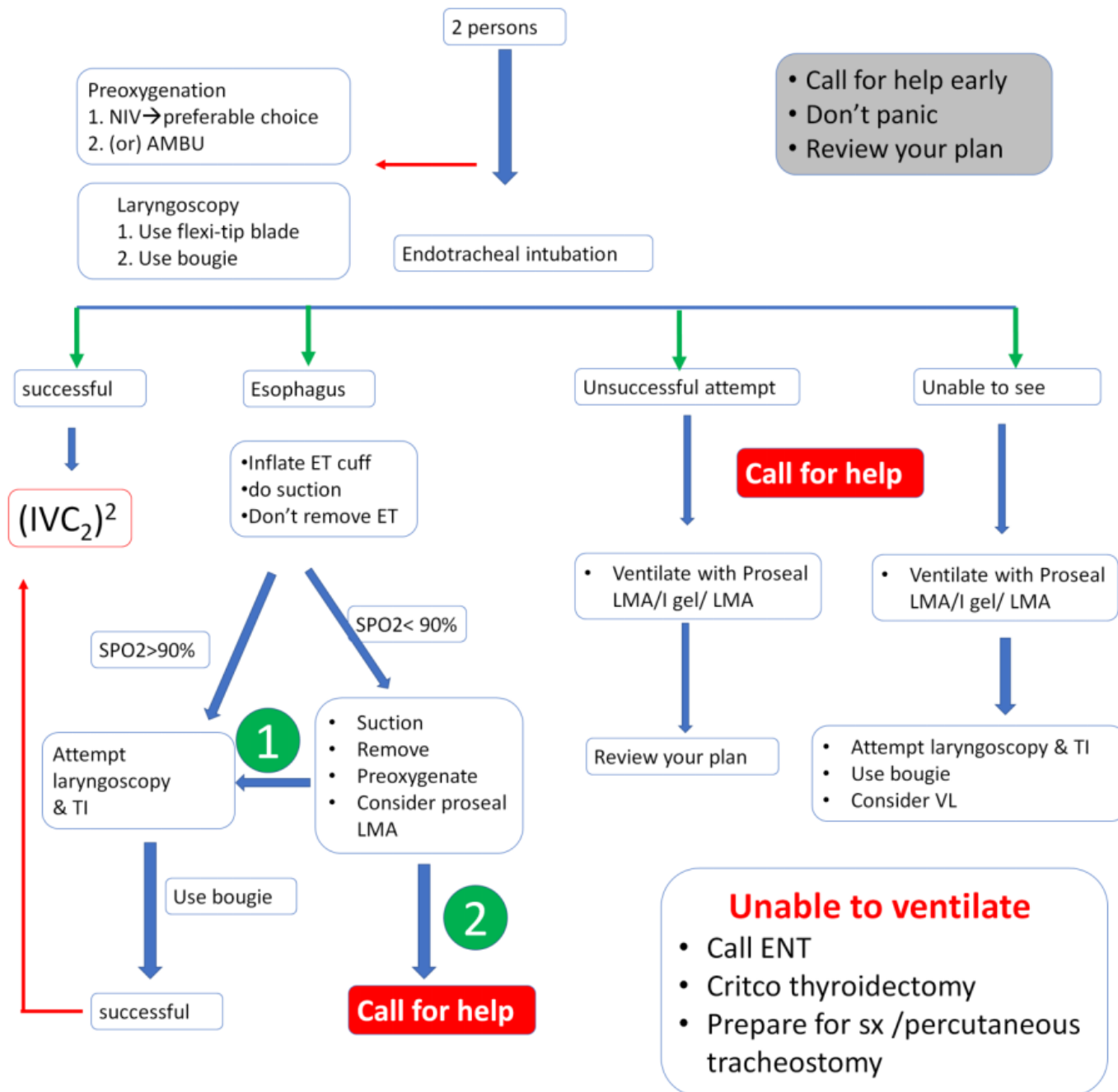
1. Review check list,
2. Communicate the procedure sequence to team
3. arrange the equipment in order. e.g. mask → laryngoscope → bougie → ET tube



**CONTENTS** 

# SOP for COVID-19 in ICU

Algorithm for intubation of COVID-19 patients:



Special note on preoxygenation technique:

## Non-invasive ventilation (NIV)

1. All patients preoxygenate with NIV with PEEP 5-8cmH<sub>2</sub>O and Pressure support – 8-10cmH<sub>2</sub>O (target tidal volume – 6mL/kg PBW).
2. Choose proper fit mask, attach the mask with straps
3. Required give head tilt chin lift
4. Keep patient in semi-recumbent position till muscle relaxant
5. Continue CPAP even patient stops breathing till you attempt laryngoscopy- minimize duration
6. When there is leak:- optimize mask size, review tightness of mask, keep low PS as possible

**CONTENTS**

# SOP for COVID-19 in ICU

7. If you encounter persisting leak:- Switch to spontaneous breathing modes (AMBU, non-rebreathing mask)

## AMBU with adjustable PEEP valve with reservoir

1. Spontaneously breathing patients who are not very breathless and hypoxic, AMBU with PEEP valve can be tried allowing the patient to breathe spontaneously. It gives an advantage of preserving spontaneous breathing, providing PEEP and high concentration oxygen. Better acceptance by patient
2. Attach the mask with straps, attach the following in sequence. The catheter mount, HME, ETCO<sub>2</sub>, AMBU bag with reservoir (keep PEEP around 5cmH<sub>2</sub>O).

## Non-breathing oxygen mask

1. Avoid using as first choice
2. Can be tried when there is no other option or other options didn't work

## High flow nasal cannula

1. Potential alternative to other methods for preoxygenation in patients with hypoxic respiratory failure
2. Not to use HFNC in our unit considering potential aerosol generation, high cost, other logistic difficulties
3. Can be tried post extubation as a bridge to recovery

## Sterile procedure:

### CVC, Arterial line, HD, ICD

1. Do not remove the PPE
2. Remove only the outer glove
3. Do hand rub for at least 40 seconds
4. Wear sterile gown and sterile glove
5. Follow universal sterile technique for all the procedure

## 5. Consumable's required:

1. Minimum requirement of PPE- 15/patient /day
2. Medical scrubs
3. All emergency drugs / intubation drugs & equipment's / difficult airway set
4. 2 intercom connections
5. One set microphone & speaker- for emergency purpose
6. 2 laptops for counselling

## 6. Communication Protocol:

All the communication among HCPs are through 2 dedicated intercoms (5332 & 5333). Patient's relatives counselling is through video chat with the 2 laptops provided. The



# SOP for COVID-19 in ICU

microphone and speaker set are only for emergency announcement like call for help in difficult airway, need for emergency drugs, fire in isolation rooms.

## 7. Medical management Protocol:

*For Prophylaxis (ICMR guidelines): Hydroxychloroquine*

Category	Description	Dosage
Category 1	Asymptomatic healthcare workers involved in the care of suspected or confirmed cases of COVID-19	400 mg BD on day 1 f/b 400 mg once weekly for 7 weeks
Category 2	Asymptomatic household contacts of laboratory confirmed cases of COVID-19	400 mg BD on day 1 f/b 400 mg once weekly for 3 weeks

Note:

1. To be taken with meals
2. Not recommended for age < 15 years
3. Contraindicated in G6PD deficiency, retinopathy or known hypersensitivity

*For treatment:*

1. Hydroxychloroquine with Azithromycin
2. Lopinavir/Ritonavir combination therapy

Hydroxychloroquine with Azithromycin regimen:

Drug	Dose	Route
Hydroxychloroquine	200 mg TID for 10 days	Oral
Azithromycin	500 mg OD for 5 days	Oral
Combination may predispose to QT prolongation HCQ may require renal or hepatic dose adjustment		

Adverse effects:

1. QT prolongation & Torsades de Pointes
2. Reduction in seizure threshold
3. Anaphylaxis or anaphylactoid reaction
4. Neuromuscular impairment
5. Neuropsychiatric disorders (potential to increase delirium)

## SOP for COVID-19 in ICU

6. Pancytopenia, neutropenia, thrombocytopenia, aplastic anemia
7. Hepatitis

Lopinavir/Ritonavir regimen:

Each tablet contains Lopinavir 200 mg & Ritonavir 50 mg

Suspension containing Lopinavir 400 mg & Ritonavir 100 mg

Route	Form	Dose	Duration
Oral	Tablet	2 tablets BD	14 days or 7 days after becoming asymptomatic (whichever is earlier)
Nasogastric tube	Suspension	BD	14 days or 7 days after becoming asymptomatic (whichever is earlier)
Crushing and administering tablets may decrease absorption by ~50% No renal dose modification required			

Note:

1. Do not give this regimen in
  - Hepatic impairment (Child Pugh C or ALT > 5 times the upper limit of normal)
  - Medications that are contraindicated with lopinavir/ritonavir (rifampicin, benzodiazepines, simvastatin, voriconazole and sildenafil)
  - Known HIV- receiving other protease inhibitors
2. Contraindicated in
  - cardiac disease & liver disease

## SOP for COVID-19 in ICU

**Table. Schedule of investigations for the administration of lopinavir/ritonavir combination**

Parameters	Days during admission period														
	D0	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14
Haemogram <sup>®</sup>	✓		✓		✓		✓		✓		✓		✓		✓
Liver function test <sup>*</sup>	✓		✓		✓		✓		✓		✓		✓		✓
Renal function test <sup>†</sup>	✓		✓		✓		✓		✓		✓		✓		✓
HbA <sub>1c</sub> and blood sugar	✓														
qRT-PCR for SARS-CoV-2	✓			✓			✓			✓			✓		
Electrolytes	✓		✓		✓		✓		✓		✓		✓		✓
PT/INR, arterial blood gas	✓														
Lipid profile	✓														
Chest X-ray	✓							✓							✓
ECG	✓		✓		✓		✓		✓		✓		✓		✓
HBV and HCV ELISA	✓														

<sup>®</sup>Hb%, total leucocyte count and differential WBC - neutrophils, lymphocytes, eosinophils, monocytes and basophils, RBC count, platelet count; <sup>\*</sup>Renal function test - BUN, Creatinine; <sup>†</sup>Liver function test - albumin, bilirubin, ALT, AST, alkaline phosphatase. AST, aspartate transaminase; ALT, alanine aminotransferase; RBC, red blood cell; WBC, white blood cell; BUN, blood urea nitrogen; HBV, hepatitis B virus; HCV, hepatitis C virus; ECG, electrocardiogram; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2; qRT-PCR, real-time reverse transcription-polymerase chain reaction; PT, prothrombin time; INR, international normalized ratio; HbA<sub>1c</sub>, haemoglobin A<sub>1c</sub>; Hb, haemoglobin

## Adverse effects:

1. Hypersensitivity reaction, angioedema
2. Stevens-Johnson syndrome / Toxic epidermal necrolysis / Erythema multiforme
3. QT prolongation & Torsade de Pointes
4. A V block, PR prolongation
5. Hyperglycemia, hypertriglyceridemia
6. Renal failure
7. Anemia, leukopenia, neutropenia
8. Pancreatitis
9. Hepatotoxicity

**8. Disinfection & Specimen Shipment Protocol:**

For all reusable items, the following protocol is to be followed

**PPE recommendations:**

1. Wear nonsterile, nitrile gloves when handling potentially infectious materials
2. If there is a risk of cuts, puncture wounds, or other injuries that break the skin, wear heavy-duty gloves over the nitrile gloves
3. Wear a clean, long-sleeved fluid-resistant or impermeable gown to protect skin and clothing
4. Use a plastic face shield or a face mask and goggles to protect from splashes of potentially infectious bodily fluids

**Cleaning & waste disposal recommendations:**

1. Large areas contaminated with body fluids should be treated with disinfectant (1% hypochlorite solution) following removal of the fluid with absorbent material. The area should then be cleaned and given a final disinfection. Small amounts of liquid waste (e.g., body fluids) can be flushed or washed down ordinary sanitary drains without special procedures



## SOP for COVID-19 in ICU

2. Follow standard operating procedures for the containment and disposal of used PPE and regulated medical waste. COVID-19 is not considered a Category A infectious substance
3. Dispose of human tissues according to routine procedures for pathological waste (yellow bin)
4. Clean and disinfect or autoclave non-disposable instruments using routine procedures. These instruments to be collected in a bucket containing 1% hypochlorite solution and subjected to disinfection/autoclaving, taking appropriate precautions with sharp objects
5. Materials or clothing that will be laundered can be removed from the COVID-19 isolation unit in a sturdy, leak-proof biohazard bag (yellow) that is tied shut and not reopened. These materials should then be sent for laundering according to routine procedures
6. Wash reusable, non-launderable items (e.g., aprons) with detergent solution, decontaminate using disinfectant (1% hypochlorite solution), rinse with water, and allow items to dry before next use
7. Keep camera, telephones, computer keyboards, and other items that remain in the COVID-19 isolation unit as clean as possible but treat as if they are contaminated and handle with gloves. Wipe the items with appropriate disinfectant (1% hypochlorite/ 70% alcohol) after use. If being removed from the autopsy suite, ensure complete decontamination with appropriate disinfectant according to the manufacturer's recommendations prior to removal and reuse
8. When cleaning is complete and PPE has been removed, wash hands immediately with soap and water for 20 seconds. If hands are not visibly dirty and soap and water are not available, an alcohol-based hand sanitizer that contains 60%-95% alcohol may be used. However, if hands are visibly dirty, always wash hands with soap and water before using alcohol-based hand sanitizer. Avoid touching the face with gloved or unwashed hands. Ensure that hand hygiene facilities are readily available at the point of use (e.g., at or adjacent to the PPE doffing area)

### **Specimen shipment protocol:**

After collecting, securing and labeling specimens in primary containers with the appropriate media/solution, they must be transferred from the isolation unit in a safe manner to staff who can process them for shipping.

1. The primary container which comprises specimen should be placed in a resealable plastic bag by the sampling staff
2. Then this resealable plastic bag containing primary container should be placed into a second resealable plastic bag which will be received by staff outside COVID-19 isolation unit
3. The resealable plastic bag should then be placed into a biological specimen bag with absorbent material; and then can be transferred outside of the COVID-19 isolation unit
4. Staff who receiving the biological specimen bag outside COVID-19 the isolation unit should wear disposable nitrile gloves and N95 mask

## SOP for COVID-19 in ICU

### 9. Dead body management:

We follow guidelines on dead body management given by Ministry of Health and Family Welfare (MOHFW).

The key facts are

1. The main driver of transmission of COVID-19 is through droplets. There is unlikely to be an increased risk of COVID-19 infection from a dead body to health workers or family members who follow standard precautions while handling body
2. Only the lungs of dead COVID-19 patients, if handled during an autopsy, can be infectious

Precautions to be followed by health care workers while handling dead bodies of COVID-19:

Standard infection prevention control practices should be followed at all times. It includes

1. Hand hygiene
2. Use of personal protective equipment (e.g., water resistant apron, gloves, masks, eyewear)
3. Safe handling of sharps
4. Disinfect bag housing dead body; instruments and devices used on the patient
5. Disinfect linen. Clean and disinfect environmental surfaces

Removal of the body from the isolation room or area:

1. The health worker attending to the dead body should perform hand hygiene, ensure proper use of PPE (water resistant apron, goggles, N95 mask, gloves)
2. All tubes, drains and catheters on the dead body should be removed
3. Any puncture holes or wounds (resulting from removal of catheter, drains, tubes, or otherwise) should be disinfected with 1% hypochlorite and dressed in with impermeable material
4. Apply caution while handling sharps such as intravenous catheters and other sharp devices. They should be disposed into a sharp's container
5. Plug Oral, nasal orifices of the dead body to prevent leakage of body fluids
6. If the family of the patient wishes to view the body at the time of removal from the isolation room or area, they may be allowed to do so with the application of Standard Precautions
7. Place the dead body in leak-proof plastic body bag. The exterior of the body bag can be decontaminated with 1% hypochlorite. The body bag can be wrapped with a mortuary sheet or sheet provided by the family members
8. The body will be either handed over to the relatives or taken to mortuary
9. All used/ soiled linen should be handled with standard precautions, put in bio-hazard bag and the outer surface of the bag disinfected with hypochlorite solution
10. Used equipment should be autoclaved or decontaminated with disinfectant solutions in accordance with established infection prevention control practices



## SOP for COVID-19 in ICU

11. All medical waste must be handled and disposed of in accordance with bio-medical waste management rules
12. The health staff who handled the body will remove personal protective equipment and will perform hand hygiene
13. Provide counseling to the family members and respect their sentiments

Surface cleaning and disinfection:

All surfaces of the isolation area (floors, bed, railings, side tables, IV stand, etc.) should be wiped with 1% Sodium Hypochlorite solution; allow a contact time of 30 minutes, and then allowed to air dry.

### 10. Special instructions to Health Care Professionals (HCPs):

As you all going to wear PPE continuously for at least 4-6 hours, kindly follow these rules to avoid early fatigue:

1. Adequately hydrate yourself and have a meal before donning PPE
2. Minimize the use of washroom to reduce PPE usage
3. Separate change rooms (1 for male staff & 1 for female staff) are provided in 3<sup>rd</sup> floor private rooms to have shower before leaving hospital premises
4. Water resistant shoes is a must

If HCP is experiencing flu like symptoms (fever, cold, cough, sore throat):

1. Inform your higher officials and report to coronavirus screening centre in our hospital immediately.
2. In case if you are advised for isolation, private rooms will be provided

In case of surge of patients:

1. If the suspected or proven cases increase beyond 8 isolation rooms, the adjoining beds will be opened for patient care

### 11. Roles & responsibilities teams:

The doctors and staffs are in charge of following roles -

1. Dr. Bhuvana Krishna- Overall in-charge
2. Dr. Jagadish Chandran & team- SOP manager
3. Dr. Amarja Havaldar & team- Manpower manager
4. Dr. Natesh Prabu & team- Bed manager
5. Dr. Manu Varma & Dr. Shiva Kumar- Infection control team
6. Dr. Carol D Silva & team- PPE manager
7. Dr. Kiran Kumar & team- Therapy manager
8. Mrs Pushpa Mary- Nurses & allied support manpower manager
9. Mrs Sherin- Equipment & drugs manager

**This SOP is subject to change as and when required basis**

**CONTENTS**



# Discharge Criteria for Screened patients with Suspected COVID-19

- **IF the Corona Single Swab report is **NEGATIVE****

- AND Medically Stable, Discharge for home quarantine with mask to self-monitor symptoms and report if any doubt to 104

**OR**

- AND still unwell for any other reason continue care in hospital transferring out of Isolation ward

- **IF the Corona Single Swab report is Preliminary POSITIVE (Preliminary report) Isolate in ward while awaiting a Confirmatory POSITIVE on the same swab already sent**

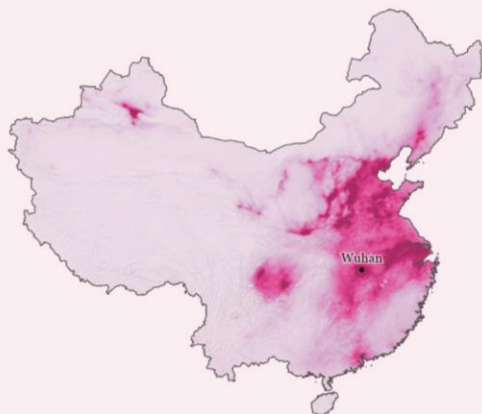
- *Preliminary test detects capsule material hence non-specific on sample swab*
- *Confirmatory test detects specific genetic material on the same sample swab*

Based on DD/SSU/Novel Coronavirus/17/2019-20 dated 23 Mar 2020 HFW, GOK

## Did you know??

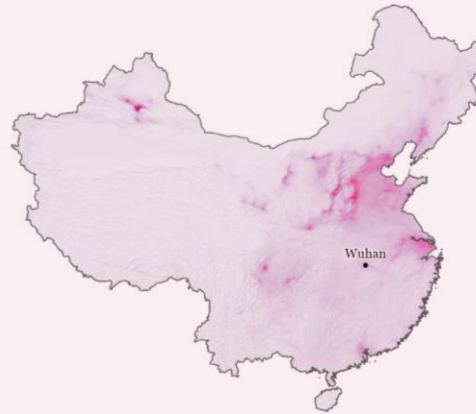
Pollution levels in China are markedly lower than last year

2019 2020 less more NO<sub>2</sub>



Pollution levels in China are markedly lower than last year

2019 2020 less more NO<sub>2</sub>



Pollution levels in China in 2019, left, and 2020. Photograph: Guardian Visuals / ESA satellite data



## Corona Prophylaxis for HCPs

This is to bring to the attention of health care providers (HCPs) involved in the screening & management of COVID-19 that a prophylactic regimen has been recommended by the ICMR.

This document supersedes all previous versions as dated in 27<sup>th</sup> March 2020.

Please be aware that:

1. There is NO currently available data from any Randomized Clinical Trial addressing this issue
2. This is NOT a substitute for frequent handwashing with soap, physical distancing, avoiding face contact.

### **The recommendations are as follows:**

HCPs at risk of-

1. Staff of COVID-19 Acute Respiratory Illness Screening Clinic
2. Emergency department & Critical Care department staff managing COVID-19 cases
3. Staff posted to the COVID-19 Isolation wards

### **Regimen:**

ICMR recommends the use of Hydroxychloroquine (HCQ) to be taken with meals

1. HCQ 400 mg twice a day on day1
2. Followed by 400mg once weekly for 7 weeks

### **Contraindications:**

1. Age < 15 years
2. Known hypersensitivity to this medication
3. Known cardiac illness
4. G6PD deficiency
5. Retinopathy

**ANY PERSON DEVELOPING ANY SYMPTOMS WHILE ON PROPHYLAXIS SHOULD SEEK IMMEDIATE MEDICAL CONSULTATION**



## Corona Prophylaxis for HCPs

Heads of different services including medical, nursing & housekeeping are requested to bring this to the attention of the staff in their respective departments, involved in COVID-19 care defined above as high risk

1. Acute Respiratory Illness Screening Clinic
2. Emergency department
3. Critical Care department areas dealing with COVID-19
4. COVID-19 Isolation wards)

HCPs who are at risk and wishing to take the prophylaxis can do so, need to meet appropriate specified physicians to review risks and to understand the potential adverse effects.

A prescription MUST be obtained from one of the following faculty members:

1. Dr Bhuvana Krishna. Professor & Head. Critical Care Medicine.
2. Dr Jyothi Idiculla. Professor & Head. Medicine, I/C Isolation wards
3. Dr Uma Maheshwari. Professor & Head. Pulmonary Medicine, I/C Acute Respiratory Illness Screening Clinic
4. Dr. Shakunthala, Professor and Head, Emergency Medicine
5. Dr Chandramouli KS. Professor. Medicine.



# PROCEDURE OF COVID-19 SAMPLE COLLECTION

Request forms should be filled either BEFORE sample collection or AFTER discarding full PPE after sample collection. Then place them in a ziplock cover. DO NOT take forms to area where sample collection is done. Ensure that the following are entered in the request forms:

- 1) Patient's name; OP No. and IP no.
- 2) History, signs and symptoms suggestive of criteria for swabbing are entered in the 1<sup>st</sup> 2 sheets. The 3<sup>rd</sup> sheet is only for patients who have travelled.
- 3) Doctor's (person collecting swab) name, phone no. (in case more clinical details are needed) and department email for report: [simch.cms@stjohns.in](mailto:simch.cms@stjohns.in)

ICMR- National Institute of Virology, Pune  
Specimen Referral Form for 2019 Novel Coronavirus (2019-nCoV)

**INSTRUCTIONS:**

- Inform the local / district / state health authorities, especially surveillance officer for further guidance.
- Seek guidance on requirements for the clinical specimen collection and transport from nodal officer.
- This form may be filled in and shared with the IDSP and also ICMR-NIV nodal officer in advance.

**PERSON DETAILS**

Name of patient: ..... 1 Age:.....Yr.....Month Gender: Male  Female   
 Address: .....  
 City: ..... Date of birth: ...../...../..... (dd/mm/yyyy)  
 State: ..... Mobile/phone: .....  
 Email: .....

**EXPOSURE HISTORY (2 WEEKS BEFORE THE ONSET OF SYMPTOMS)**

Recent stay/travel in area (Wuhan, China): Yes  No  If yes, stay/travel duration with date  
 History of visit to wet/seafood market: Yes  No  From:...../...../..... to:...../...../.....  
 Close contact with confirmed case: Yes  NO  Close contact with animal/birds: Yes / N  
 Recent travel to any other country: Yes  NO  Travel place: .....

Health care worker working in hospital involved in managing patients: YES / NO,  
 Hospitalization date: ...../...../..... Discharge date: ...../...../.....

**CLINICAL SYMPTOMS AND SIGNS**

Date of onset of symptoms: ...../...../..... First symptom: .....

Symptoms	Yes	No	Symptoms	Yes	No	Symptoms	Yes	No	
Fever (<7 days)	<input type="checkbox"/>	<input type="checkbox"/>	Cough	<input type="checkbox"/>	<input type="checkbox"/>	Diarrhoea	<input type="checkbox"/>	Abdominal pain	<input type="checkbox"/>
History of fever (< 7 days)	<input type="checkbox"/>	<input type="checkbox"/>	Breathlessness	<input type="checkbox"/>	<input type="checkbox"/>	Nausea	<input type="checkbox"/>	Vomiting	<input type="checkbox"/>
Chest pain	<input type="checkbox"/>	<input type="checkbox"/>	Sore throat	<input type="checkbox"/>	<input type="checkbox"/>	Body-ache	<input type="checkbox"/>	Haemoptysis	<input type="checkbox"/>
Signs	Yes	No	Sign	Yes	No	Nasal discharge	<input type="checkbox"/>		
Wheeze	<input type="checkbox"/>	<input type="checkbox"/>	Stridor	<input type="checkbox"/>	<input type="checkbox"/>	Lower chest indrawing	<input type="checkbox"/>		
Nasal flaring	<input type="checkbox"/>	<input type="checkbox"/>	Crepitation	<input type="checkbox"/>	<input type="checkbox"/>	Accessory muscle use	<input type="checkbox"/>		

**UNDERLYING MEDICAL CONDITIONS**

Condition	Yes	No	Condition	Yes	No	Condition	Yes	No	
COPD	<input type="checkbox"/>	<input type="checkbox"/>	Bronchitis	<input type="checkbox"/>	<input type="checkbox"/>	Diabetes	<input type="checkbox"/>	Hypertension	<input type="checkbox"/>
Chronic renal disease	<input type="checkbox"/>	<input type="checkbox"/>	Malignancy	<input type="checkbox"/>	<input type="checkbox"/>	Heart disease	<input type="checkbox"/>	Asthma	<input type="checkbox"/>

IMMUNOCOMPROMISED CONDITION: YES / NO Other: .....

**HOSPITALIZATION, TREATMENT AND INVESTIGATION**

HOSPITALIZATION date: ...../...../..... DIAGNOSIS: .....  
 DIFFERENTIAL DIAGNOSIS: ..... ETIOLOGY IDENTIFIED: .....  
 ATYPICAL PRESENTATION: YES / NO UNUSUAL / UNEXPECTED COURSE: YES / NO  
 Outcome: Discharge / Death / ..... OUTCOME date: ...../...../.....

Treatment	Yes	No	Treatment	Yes	No	Treatment	Yes	No	
Antibiotics	<input type="checkbox"/>	<input type="checkbox"/>	Ventilation	<input type="checkbox"/>	<input type="checkbox"/>	Antivirals	<input type="checkbox"/>	Steroids	<input type="checkbox"/>
Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	CPAP	<input type="checkbox"/>	<input type="checkbox"/>	Bronchodilators	<input type="checkbox"/>	Other:.....	

Investigation findings: Haematocrit: ..... Hb: ..... WBC (leukocyte count): .....  
 Differential Leukocyte count: Lymphocytes (%): ..... Monocytes (%): ..... Neutrophils (%): .....  
 Basophils (%): ..... Eosinophil (%): ..... Platelet (Thrombocyte) count: ..... ESR: .....

Investigation details: Chest X ray: Yes  No  If yes (findings): .....  
 Blood culture findings (if any): .....  
 Other investigation details: .....

**SPECIMEN INFORMATION FROM REFERRING AGENCY**

Specimen type	Collection date	Label	FOR* ICMR-NIV	Specimen ID	Test performed	Result
1.						
2.						

Name of Doctor: ..... Hospital Name/address: .....  
 Phone/mobile number: ..... Signature and date: .....

ICMR- National Institute of Virology, Pune  
Specimen Referral Form for 2019 Novel Coronavirus (2019-nCoV)

**CASE DEFINITION**

1. Severe Acute Respiratory Illness (SARI) 2

- history of fever YES / NO
- cough YES / NO
- requiring admission to hospital YES / NO

WITH

- no other etiology explains the clinical presentation YES / NO  
(clinicians should also be alert to the possibility of atypical presentations in patients who are immunocompromised);

AND

any of the following

- A history of travel to Wuhan, Hubei Province China in the 14 days prior to symptom onset. YES / NO
- the disease occurs in a health care worker who has been working in an environment where patients with severe acute respiratory infections are being cared for, without regard to place of residence or history of travel YES / NO
- the person develops an unusual or unexpected clinical course, especially sudden deterioration despite appropriate treatment, without regard to place of residence or history of travel, even if another etiology has been identified that fully explains the clinical presentation. YES / NO

2. Individuals with acute respiratory illness of any degree of severity who, within 14 days before onset of illness, had any of the following exposures:

- close physical contact with a confirmed case of nCoV infection, while that patient was symptomatic; YES / NO
- a healthcare facility in a country where hospital associated nCoV infections have been reported; YES / NO
- direct contact with animals (if animal source is identified) in countries where the nCoV is known to be circulating in animal populations or where human infections have occurred as a result of presumed zoonotic transmission\*. YES / NO

\* To be added once/if animal source is identified as a source of infection

Format A - for surveillance of Passenger for 2019-nCoV

Full Name: .....  
 Age in years: .....  
 Gender: .....  
 Passport number: ..... 3  
 Complete Address (For Indian passport holders) .....  
 Place of Stay during visit (For International tourists) .....  
 Landline number with STD code (In India) .....  
 Mobile number (In India) .....  
 Countries visited in last 28 days .....  
 Date of departure from 2019-nCoV affected country .....  
 Passenger History:

Day	Date	Fever	Cough	Day	Date	Fever	Cough
1				15			
2				16			
3				17			
4				18			
5				19			
6				20			
7				21			
8				22			
9				23			
10				24			
11				25			
12				26			
13				27			
14				28			

Clinical details: write 'N' for No & 'Y' for Yes

In case of any symptoms the passenger should be immediately isolated at designated hospital

Filled by: .....

## IMPORTANT: As per the Commissionerate of Health and family Welfare, Karnataka-

- 1) Whenever there is a suspected COVID-19 case, clinicians need to first fill the request form COMPLETELY, don't collect the sample at this stage.
- 2) The filled forms to be sent to Microbiology Lab
- 3) From here these forms will be scanned and sent to the concerned via Email ( a group of doctors designated by the govt will be looking at these) and wait for approval.
- 4) Once there is a reply from that group, the concerned clinicians will be communicated about acceptance or rejection.
- 5) If accepted, VTM (for sample collection ) can be collected from Microbiology lab for further needful

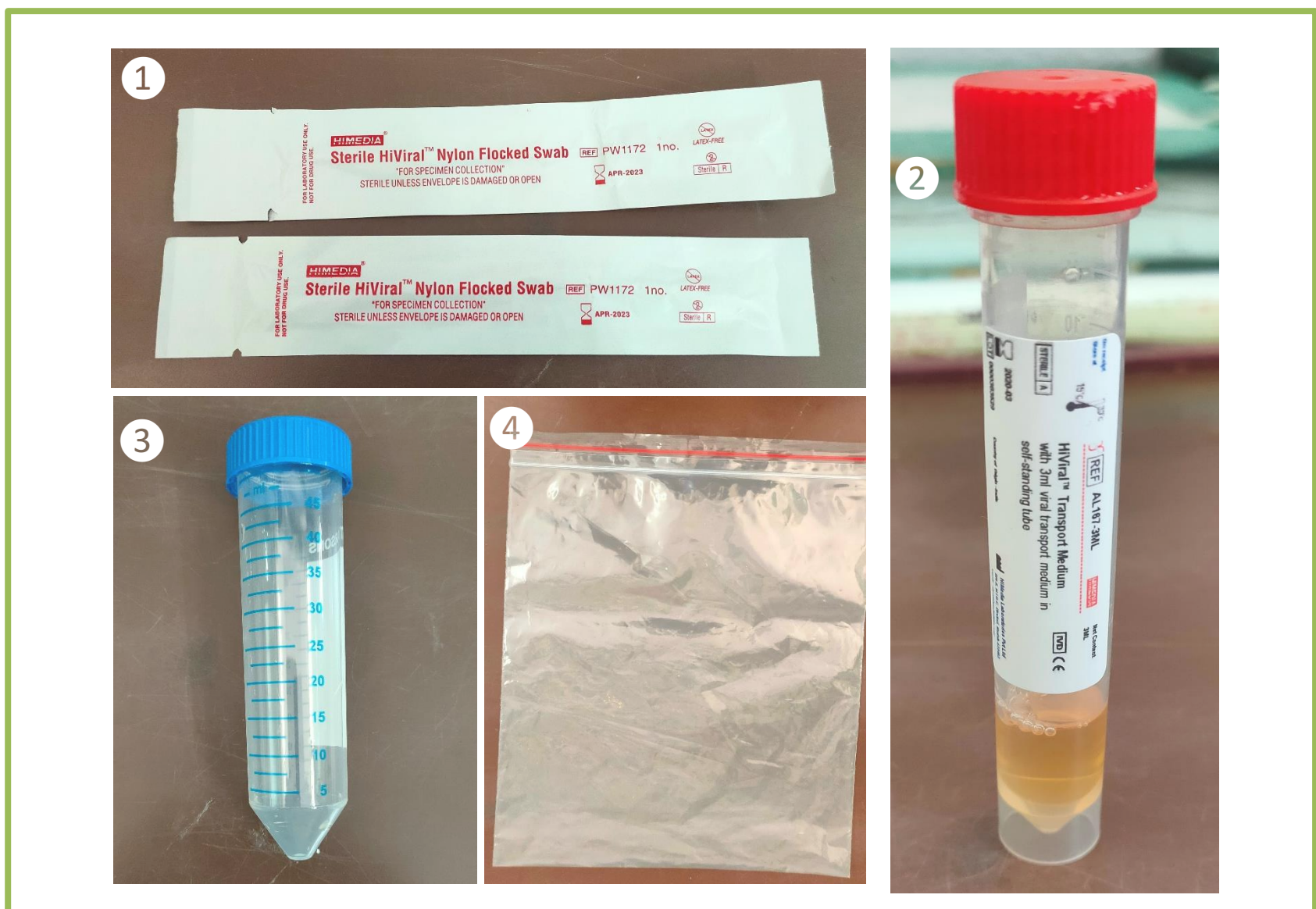
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# PROCEDURE OF COVID-19 SAMPLE COLLECTION

## Sample Collection:

- \* After wearing full PPE,
- \* Label both the tubes with patient details and name of hospital –SJMCH.
- \* Use 1 swab **1** to swab the posterior pharyngeal wall. Place it into the smaller tube containing Viral Transport Medium (VTM). **2** Break off the end of the swab at the indentation.
- \* Use the 2<sup>nd</sup> swab to swab both nostrils and place it into the same tube which contains VTM. Close the tube.
- \* Place this VTM tube into the bigger tube. **3** Close this tube.
- \* Place the bigger tube into a ziplock cover. **4**
- \* Discard full PPE into appropriate BMW liners.
- \* The aide should wear gloves and a mask and immediately (as cold chain has to be maintained once sample is collected) transport to the Microbiology laboratory – holding the sample ziplock cover in one hand and request forms ziplock cover in the other.



# COVID – 19 CASE SHEETS

<b>Corona Clinical Case Sheet</b>				
<b>Date/Time</b>		<b>OP/IP No:</b>		
<b>Name:</b>		<b>DOB (Age):</b>		<b>Sex: Male/Female</b>
<b>Address:</b>				
<b>Pin Code:</b>		<b>Email:</b>		
<b>Mobile:</b>				
<b>Occupation: Especially Health Care Professional HCP/Others</b>				
<b>Emergency Contact person Name/Mobile:</b>				
<b>Referral Doctor/Institute:</b>			<b>Resident Doctor/Department</b>	
<b>History</b>				
<b>Recent (last 14 days) any International Travel Y/N (If Yes where?)</b>				
<b>Recent Close Contact with COVID19 positive Patient Y/N</b>				
<b>Symptom</b>		<b>YES/NO</b>	<b>Duration</b>	<b>Others Specify</b>
Fever				
Cough				
Breathlessness				
<b>Past Disease</b>			<b>YES/NO</b>	<b>Duration</b>
Diabetes Mellitus				
Heart Disease				
Hypertension				
Chronic/ Rec Lung Disease				
Cancer/ Immunosuppressed				
<b>Examination</b>				
<b>Pulse per min</b>		<b>SBP/DBP</b>		
<b>Temperature:</b>				
<b>Resp Rate per min</b>	<18	18-30	>30	
<b>Oxygen Saturatn</b>	>90%	<90%		
<b>General Sign</b>		<b>Yes/No</b>	<b>General Sign</b>	
Pallor			Clubbing	
Cyanosis			Pedal Edema	
Icterus				
<b>RS/CVS/PA/CNS</b>				
<b>Swab Taken Yes/No - Date/Time</b>		<b>US Chest or Chest X-Ray</b>		<b>CBC</b>

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# COVID – 19 CASE SHEETS

CORONA MONITORING RECORD																						
TPR CHART																						
Name					Hospital OPD/IP:																	
Date																						
No. of Hospital days																						
Time					2	6	10	2	6	10	2	6	10	2	6	10	2	6	10	2	6	10
Puls	Temp																					
	°C	°F																				
240	40.6	105																				
220	40.0	104																				
200	39.4	103																				
180	38.9	102																				
160	38.3	101																				
140	37.8	100																				
120	37.2	99																				
100	36.7	98																				
80	36.1	97 <sup>N</sup>																				
60	35.6	96																				
RR per Min					2	6	10	2	6	10	2	6	10	2	6	10	2	6	10	2	6	10
70																						
60																						
50																						
40																						
30																						
20																						
10																						
0																						
Oxygen Sat%																						
100																						
95																						
90																						
85																						
80																						
<80																						

CONTENTS

# COVID – 19 REPORTING FORMATS

## Reporting format A

Name of the Institution:				Date of reporting:		
SL No.	Total No of Designated beds for COVID-19	No of new COVID 19 Admissions	No of beds occupied for COVID 19 cases(New+old OPD)	No of vacant beds for COVID 19	No of OPD Screened for COVID 19	No referred to RGICD/BMC &RI

## Reporting format B

SNo	State	District	Name	Age	Sex	Address	Contact Number	Country of Visit	Date of Arrival from Affected Country	Date of Receipt of Information	Observation started from
1											

Symptomatic (Y/N)	Hospital Where admitted	Referred by (APHO/PHO/EMR/self reported)	Sample Collected (Y/N)	Date of Sample Collection	Result of Sample	Current Status	Remarks

# Hospital Isolation/Quarantine Instructions

## **Dear Patient,**

*This is a National Emergency and we are here to help you get better and protect your own family. Your cooperation is essential for us to win. Please bear with us in this time of crisis, we are here to help you get better soon. Kindly note the following expectations.....*

Our ward is a large, cross-ventilated, cohort, bigender, isolation ward with common toilets and basic amenities (Well ventilated, Similar patients are 2mt/6feet apart and compulsory avoidance of each other's space min 2 mt/6 feet apart).

You must NEVER leave the ward as mandated by law. It is COMPULSORY to

1. Respect all around you and avoid touching each other or other's articles especially phones/chargers and keep physical distance
2. Always wear your mask
3. Frequently wash your hands with soap and water for 20 seconds after touching any common object or surface. Ask for demo.
4. Follow Cough Etiquette (Sneeze or cough into the bend of your elbow or shoulder or use tissue to cover immediately disposing it into YELLOW bin)
5. Avoid touching your face and surfaces outside your area
6. NO Visitors and preferably NO Attenders

Please DONOT waste any water as it is summer; Lights out at 10pm to 6am. All healthcare professionals treating you will be wearing personal protective equipment and you must not touch them or interfere with their duties. Treatment is minimum mainly monitoring. Absolutely NO VIOLENCE will be tolerated. We request you to support our efforts by paying for costs involved based on what is used for your care at no-profit basis to get us through this crisis.

1. Bed charges INR 300 per day
2. Hospital Diet with disposable cutlery (3 meals per day)
  - Veg INR 200 per person per day
  - Non-Veg INR 225 per person per day
  - Provided in disposable containers.
3. Laboratory and Radiology- usually minimum and only if needed according to doctor unless their other illnesses
  - CBC INR 310
  - Chest X-ray portable/Consumables INR 420
  - Corona Swab Service/Consumables INR 800

Expect government swab reports within 48 hrs and be prepared to stay a minimum of 4 days in this facility as per government orders. If positive your stay will be extended as per government orders as mandated. We recommend you to meditate, read, listen to music, rest and eat well as you are champions!

We promise that we will do our best to look after you within our resource constraints, but you must RESPECT one another and us!

# Standard Contact and Droplet Precautions

*The WHO recommends standard, contact, and droplet precautions.....for people without respiratory symptoms, wearing a medical mask in the community is NOT required, even if COVID-19 is prevalent in the area; .....wearing a mask does not decrease the importance of other general measures to prevent infection, and it may result in unnecessary cost and supply problems. (and maybe more infections as hands are repeatedly used to adjust uncomfortable long use of masks!)*

## Standard, contact, and droplet precautions

- Perform hand hygiene before and after every patient contact.
- Safe disposal or cleaning of instruments and linen.
- Private room preferred; **cohorting** allowed if necessary.
- **Gloves** required upon entering room. Change gloves after contact with contaminated secretions.
- **Gown** required **IF** clothing may come in contact with the patient or environmental surfaces or if the patient has diarrhea.
- **Mask:** Wear a mask (surgical) when within 3 feet of the patient. Mask (surgical) the patient during transport.
- Minimize risk of environmental contamination during patient transport (eg, patient can be placed in a gown).
- Non-critical items should be dedicated to use for a single patient if possible.
- **Cough etiquette:** Patients and visitors should cover their nose or mouth when coughing, promptly dispose used tissues, and practice hand hygiene after contact with respiratory secretions.

**Airborne Aerosol Precautions:** *The addition of airborne precautions is warranted during aerosol-generating procedures, such as tracheal intubation, noninvasive ventilation, tracheotomy, cardiopulmonary resuscitation, manual ventilation before intubation, and bronchoscopy.*

## Airborne:

- Place the patient in an AIIR (a monitored negative pressure room with at least 6 to 12 air exchanges per hour) where possible.
- Room exhaust must be appropriately discharged outdoors or passed through a HEPA filter before recirculation within the hospital. A certified respirator N95 must be worn when dealing with airway/breathing in close range of 1 mt (3 feet).
- Transport of the patient should be minimized; the patient should be masked if transport within the hospital is unavoidable.

1. World Health Organization. Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected. January 25, 2020. <https://www.who.int/publicationsdetail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-ncov-infection-is-suspected-20200125> (Accessed 4/2/2020).

2. World Health Organization. Advice on the use of masks the community, during home care and in health care settings in the context of the novel coronavirus (2019-nCoV) outbreak. 29 Jan, 2020. <http://www.who.int/publications-detail/advice-on-the-use-of-masks-the-community-during-homecare-and-in-health-care-settings-in-the-context-of-the-novel-coronavirus-2019-ncov-outbreak>. (Accessed on January 31, 2020)



# Donning and doffing PPE



**ST. JOHN'S MEDICAL COLLEGE HOSPITAL  
BANGALORE, INDIA**

**DEPARTMENT OF EMERGENCY MEDICINE**

## Donning Of PPE(Personal Protective Equipment)

PPE should be put on near the patient's area, in a clean room and it should be stored in this room.

### Pre Donning Instructions

- Adequate Hydration
- Remove personal items(watch,jewelry,cell phone etc.,)
- Equipment check(gown,gloves,N95 respirator,boot cover,goggle,alcohol rub,face shield).

#### 1) Work clothes & shoes



#### 2) Hand hygiene(15-20seconds)



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# Donning and doffing PPE

## 3) Boot cover



## 4) Gown(do not cover the the head with hood of gown at this step)



[CONTENTS](#)



## Donning and doffing PPE

5) Hand rub and then inner gloves (Extend the glove over cuff of the gown)



6) N95 Respirator

Separate the mask to open fully, then separate the head bands using index and middle finger, tilt head slightly forwards and place the mask on your face. Then place the lower headband at nape of neck and other headband at crown of your head. Form the nosepiece tightly across bridge of nose. Adjust the mask to achieve good facial seal (with mask in place, blow air out and check for any air leak)



# Donning and doffing PPE

## 7) Goggle



## 8) Hood of gown



## Donning and doffing PPE

### 9) Face shield



### 10) Outer gloves



Donning of PPE is completed. Observer should check the worn PPE (all parts of the skin should be covered, all areas of body should be covered during range of movement, should be able to extend arms and do range of motions).



## Donning and doffing PPE

Removal of PPE should be done in doffing area, that is separate from the patient room. Do not step into the clean area wearing contaminated PPE.

- 1) Remove outer gloves (outside of gloves is contaminated)



- 2) Remove the face shield (don't touch anterior part of face shield, it is contaminated)



## Donning and doffing PPE

3) Unzip gown till lower end of chest



4) Take hood off (place fingers over inner aspect of hood and remove it by rolling backwards)



## Donning and doffing PPE

5) Unzip rest of the gown



6) Keep hands straight over your back, then pull the sleeves out of arms. (Don't touch anterior aspect of gown, it is contaminated)



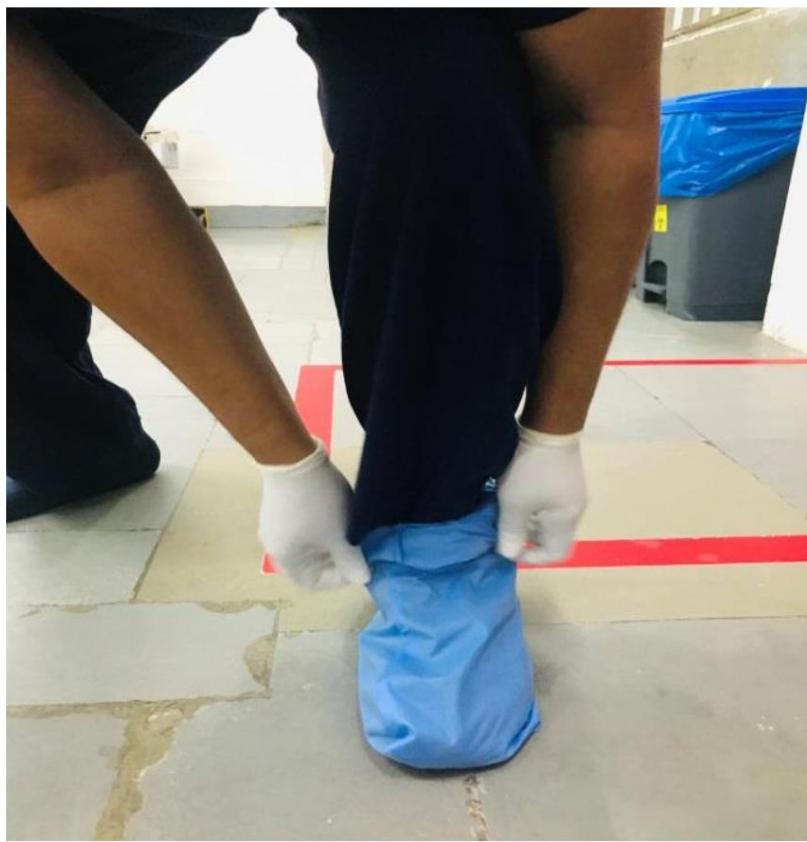


## Donning and doffing PPE

7) Remove rest of the gown completely by rolling inside out.



8) Remove boot cover(inside out)



## Donning and doffing PPE

9) Hand rub and remove goggle



10) Remove N95 Respirator (slightly bend forwards, then remove lower headband first followed by upper)



## Donning and doffing PPE

10) Remove inner gloves, wash hands and move out of doffing area



Perform hand hygiene between steps if hands become contaminated and immediately after complete removal of PPE.

*Please visit this link to access online corona registration:*

[https://forms.office.com/Pages/ResponsePage.aspx?id=TIpq\\_fjXvUOs8gM8AGXllrFd\\_8rTNRDqBrTVdKZy-hURTIDUEU0VEJIMVNIR0pKNjYwMjkyV0tEVi4u](https://forms.office.com/Pages/ResponsePage.aspx?id=TIpq_fjXvUOs8gM8AGXllrFd_8rTNRDqBrTVdKZy-hURTIDUEU0VEJIMVNIR0pKNjYwMjkyV0tEVi4u)

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# Protocol for Cleaning and Disinfection for COVID-19 screening center

Setting- COVID-19 consultation room (Room No 43)	Types	Method of cleaning/disinfection
Type of PPE	Medical mask	Disposal in yellow closed bin
	Disposable gown	Disposal in yellow closed bin
	Cap	Disposal in yellow closed bin
	Goggles	Disposal in red closed bin
	Medical equipments	Stethoscope
	BP apparatus	Cleaning with ethyl alcohol 70%
	Pulse oximeter	Cleaning with ethyl alcohol 70%
	Torch	Cleaning with ethyl alcohol 70%
	Tongue depressor	Disposal in yellow closed bin
Surfaces	Table	Using 1% freshly prepared Sodium hypochlorite solution*
	Stool/chair	Using 1% freshly prepared Sodium hypochlorite solution
Examination bed	Linen	Transported to laundry as infected linen in red liner, leak proof, sealed sack
Environment	Floors	Mopping using 1% freshly prepared Sodium hypochlorite solution

Hand hygiene- health care workers (HCWs) should apply the WHO's 5 Moments for Hand Hygiene approach with an alcohol-based hand rub (ABHR) or with soap and water.

1. Before touching a patient
2. Before any clean or aseptic procedure is performed
3. After exposure to body fluid
4. After touching a patient
5. After touching a patient's surroundings

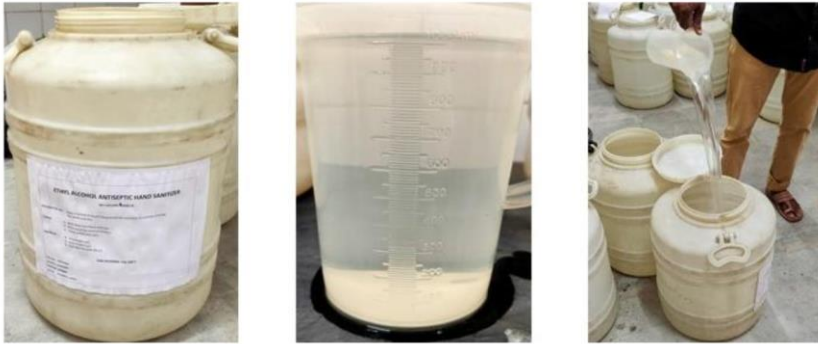
HCWs should refrain from touching eyes, nose or mouth with potentially contaminated hands. HCWs should limit surfaces touched. Housekeeping staff should wear medical mask, gown, heavy duty gloves, closed work shoes while cleaning this room.

**Reference:** Detailed Guidelines for Infection Prevention Control for suspected cases of 2019- nCoV Acute Respiratory Disease. Ministry of Health and Family Welfare. Available at <https://ncdc.gov.in/WriteReadData/l892s/35099303721580629330.pdf>. Accessed on 3rd March 2020

Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected Interim guidance 25 January 2020. World Health Organization. Available at [https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-\(ncov\)-infection-is-suspected-20200125](https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-(ncov)-infection-is-suspected-20200125). Accessed on 3<sup>rd</sup> March 2020

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# STEPS OF IN HOUSE HAND SANITIZER PRODUCTION



**Step 1:** Pouring required quantity of ethanol into a plastic drum using a measuring jar

## Raw materials required

1. Ethanol 96%
2. Hydrogen peroxide 3%
3. Glycerol 98%
4. Sterile distilled water
5. Perfume (optional)
6. Colouring agent (optional)



**Step 2:** Diluting 6% hydrogen peroxide to 3% using equal quantity of sterile distilled water and adding it to ethanol followed by mixing using a spatula



**Step 3:** Adding the required quantity of glycerine using a measuring jar into the solution and mixing it using a spatula



**Step 4:** Adding 10 ml of perfume and colouring agent to the solution and mixing it using a spatula and distributing in 1000ml bottles

D  
E  
P  
A  
R  
T  
M  
E  
N  
T  
O  
F  
P  
H  
A  
R  
M  
A  
C  
Y

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# STEPS OF IN HOUSE PRODUCTION of PPE

**Note:** Used along with full body suit, N95 mask and goggles

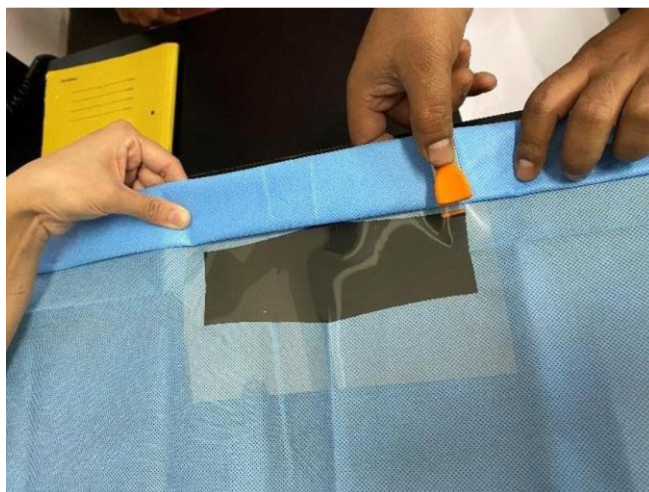
**Requirement:** 1. Disposable hole towel; 2. Transparent OHP sheet; 3. Staplers



1. Make hole in a towel



2. Fold upper end of hole towel till hole



3. Place OHP sheet in hole and staple it

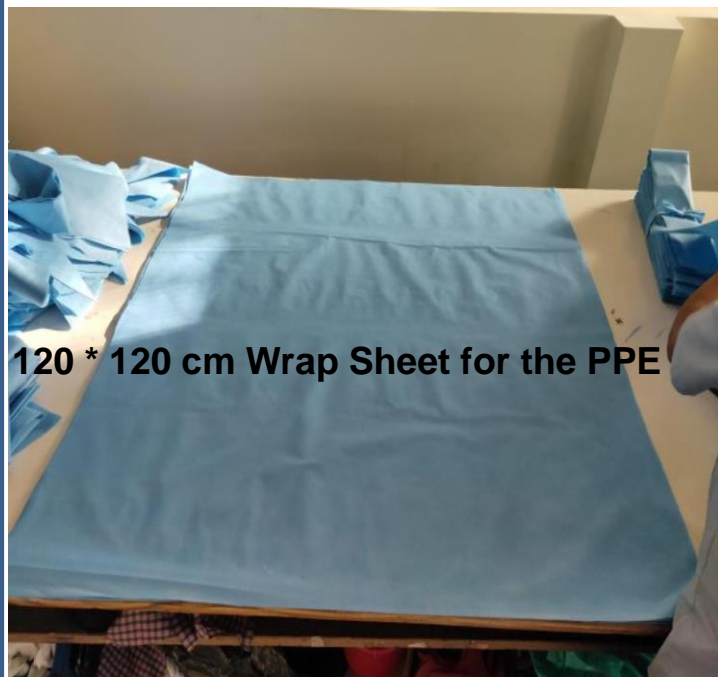


4. Use as demonstrated, can be secured by stapler

Note: one can replace the hole towel with plastic or other fluid impervious material.

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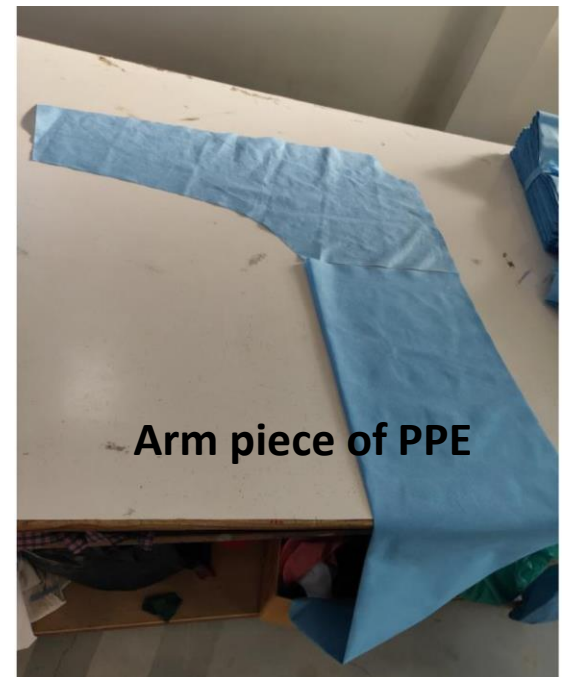
# Full PPE In-house Production



120 \* 120 cm Wrap Sheet for the PPE



Body piece of PPE



Arm piece of PPE



Over Mask



Tailoring



Tailoring the PPE zip



Shoe piece



Fully Body PPE



Over Mask + PPE

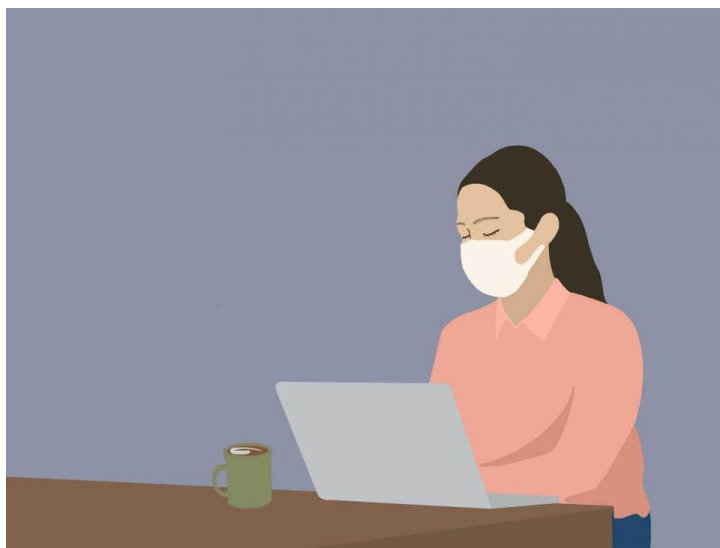
Department of  
Laundry



# Doctor's Wellbeing During COVID-19 Pandemic

## Anxiety and Stress

Uncertainty is normal during times like this. Despite guidelines and targeted work, uncertainties will remain and underlie the feeling of being stressed. In fact, anxiety seen in this context are quite universal and is by no means a reflection of your inability to do the job. An optimal range of this anxiety is productive to an extent, and it will keep you alert and, on your guard, to take necessary precautions. No one can discount the risk of getting infected, when working in such close quarters with COVID-19 patients, but with the right precautions, it is preventable, and there is always a team of great health care professionals right beside you, who will do everything possible to get you better.



## Dealing with anxious patients and caregivers:

- This can get especially difficult in these times, where most patients and even caregivers are worried about having the infection. Literate patients can be pointed to posters, information leaflets and official online forums while more time can be spent on individuals who cannot read.
- Reassure them that everything is being done according to protocol, but at the same time, avoid making statements such as “everything is fine”, or “there’s nothing to worry”.
- Try to have a set of responses to FAQs.
- Do not feel compelled to remove all doubts that the patients may have. Practice saying “It is worrying isn’t it”, “You are doing what is best advised by all agencies, so that’s good”, “We do not have all the answers yet”, “I would request you to talk to my senior about this etc.”





# Doctor's Wellbeing During COVID-19 Pandemic

## Dealing with the massive workload:

- Ask and understand the specific tasks assigned to you and how team members take care of other tasks. Working all the time does not mean you can make an efficient contribution. Do not see yourself as the only person expected to solve all the challenges around.
- Remember that this crisis will pass, after which you will have time for your other work that is currently left incomplete. See this as a once in a generation occurrence that helps you get used to crisis situations. As you finish the work for the day tell yourself that years from now you will look back with pride and satisfaction on your work today regardless of what challenges encountered on the day
- Remember that you are a precious and limited resource. Make sure you use the personal protective equipment correctly. Take a few extra minutes if necessary, no matter the urgency of the situation to ensure that you are following all the protective guidelines and check if your team members have done the same too.

## Taking care of your basic needs:

- Ensure you get adequate rest and respite despite the increased workload and shifts. Get adequate sleep. It will ensure that you are able to focus at work and even minimize mistakes.
- Keep your own water bottles, keep yourself well hydrated.
- Try to eat home cooked food as much as possible.
- Having an exercise routine & keeping yourself physically active is important both for your physical and mental wellbeing.
- Keeping a journal to write about the difficult events of the day can also be helpful.



# Doctor's Wellbeing During COVID-19 Pandemic

## Looking after your peers:

- Having a daily team meeting, giving a pep talk to team members at the beginning of the duty, praising them for their achievements, even small ones can make a significant difference to team morale.
- Team members can have regular debrief meetings with each other.
- Identifying red flags in colleagues who might need extra support/professional help with timely referrals is vital.
- Blaming others or displacing your frustration and anger at your peers or juniors or patients and caregivers will not make you feel better.
- Remember everybody is on the edge and we must believe that everyone is doing the best they can. *We are all in this together.*

## Staying connected:

- It is important to realize that social distancing does not mean social isolation.
- Stay in touch with relatives and friends through phone calls or video chats. Especially try to check in with those peers and loved ones who are currently living alone (Skype, Zoom, Google Duo, WhatsApp call etc. provide audio and video calling).



- Make it a point to talk to your family regularly, while walking from your vehicle to the hospital building, for instance! They would also be concerned for your safety and would require reassurance too.
- Don't allow for news associated with coronavirus to dominate every conversation you have with your family and friends.
- Use the time off to share stories, to focus on all the other things going on in your lives and to have regular conversations.



# Doctor's Wellbeing During COVID-19 Pandemic

## Important to stay informed but don't obsessively check for updates:

- Constant checking of social media feeds can become compulsive and counterproductive. Do it at fixed times twice a day.
- Remember your seniors & administrators will certainly update you if there is any emergent action necessary.
- If you begin to feel overwhelmed, stay away from media completely and ask someone reliable to share the most important updates with you.

## Dealing with the social fallout:

- You may face stigma for working with COVID-19 patients too. You might feel like a hero at work and come back home to feel like an outcast. For example, your housekeeper may refuse to come home, because you work in the hospital emergency. Relatives might show avoidance and neighbors might shun you. It becomes important to not take such reactions personally. Even you are under extreme pressure and such setbacks become difficult to handle.
- It helps to give these individuals a clear understanding of the situation and reassurance that you yourself are taking all precautions to prevent infection to yourself and people surrounding you.
- Be careful not to argue or add to stereotyped observations. Feel free to express your ignorance on this evolving sphere of knowledge and practice moving away comfortably.
- You might also be worried about being a source of infection to your families, which is a natural thought given the context but with necessary precautions the risk is minimal

*Remember we are in the middle of an unusual situation, a crisis requiring a unique set of skills, resolve, flexible responses and teamwork*



# Doctor's Wellbeing During COVID-19 Pandemic

## Getting help:

- If you are experiencing any symptoms it is important that you don't self-medicate.
- Being objective becomes difficult once the roles of a doctor and patient merge. The resulting subjectivity can put you and your family members at risk.
- Know your limits-If you're feeling unwell and feel like taking a few hours off, inform the senior team member and take rest. You need to keep yourself going to help others.
- Please feel free to speak to your seniors, mentors and teammates about any difficulty which may arise, you need to be your own first priority.
- Approach the staff clinic or the Department of general medicine in case of any symptoms. If you would like to talk to a Psychiatrist, kindly call **080-22065460**

## Resources and further reading:

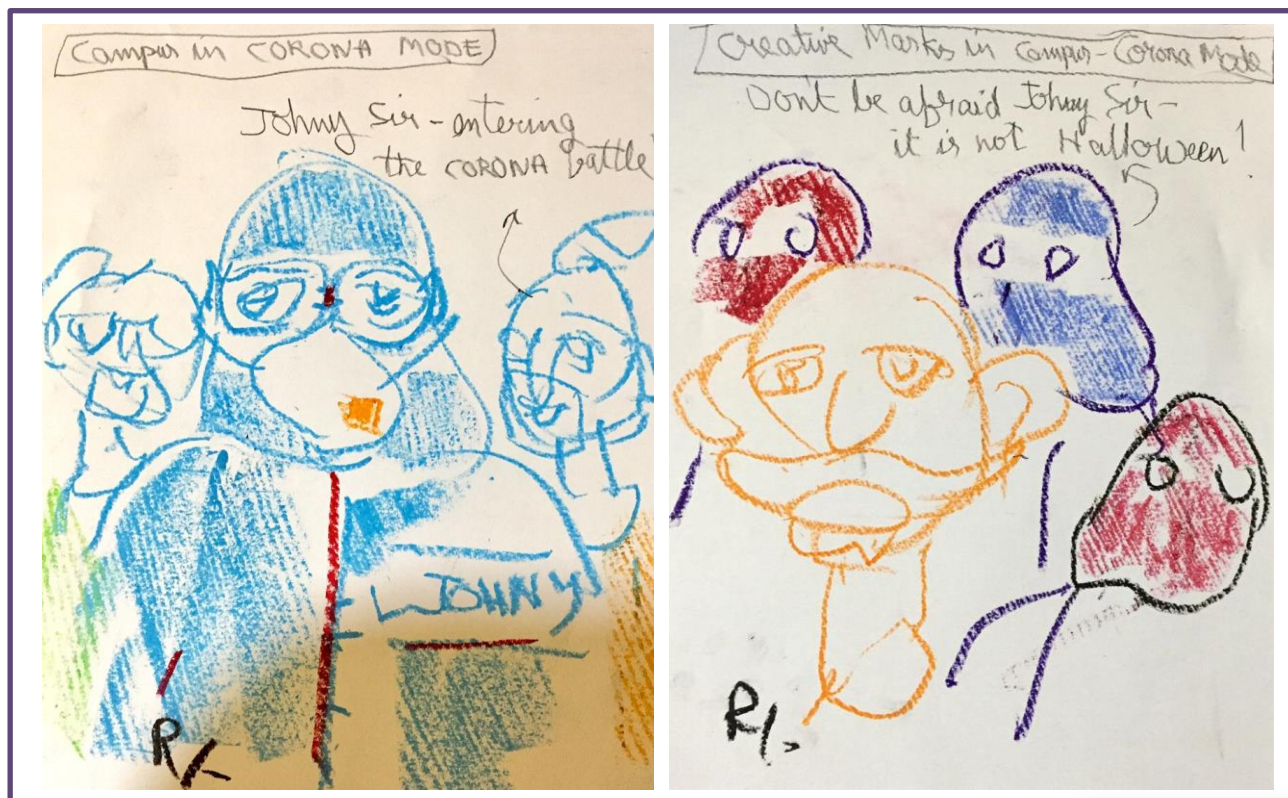
[https://www.who.int/docs/default-source/coronaviruse/mental-healthconsiderations.pdf?sfvrsn=6d3578af\\_8](https://www.who.int/docs/default-source/coronaviruse/mental-healthconsiderations.pdf?sfvrsn=6d3578af_8)

<https://www.cdc.gov/coronavirus/2019-ncov/prepare/managing-stress-anxiety.html>

## Relaxation and meditation techniques for those interested:

Jacobson's progressive muscle relaxation (JPMR), Mindfulness meditation: Websites and Apps are also available for this. (<https://www.calm.com/> and <https://www.headspace.com/>)

*L Johnny*



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# Anxiety, Stress & Coping For Well-Being During COVID-19 Pandemic

The outbreak of Coronavirus disease 2019 (COVID-19) may be stressful for people. Fear and anxiety about a disease can be overwhelming in adults and children. Coping with stress will make you, the people you care about and your community stronger. Everyone reacts differently to stressful situations. How you respond to the outbreak can depend on who you are as a person and the community you live in.

## Features of increased stress during an infectious disease outbreak can include:

1. Fear and worry about your own health and the health of your loved ones
2. Changes in sleep or eating patterns
3. Difficulty concentrating
4. Worsening of chronic health problems
5. Increased use of alcohol, tobacco, or other drugs



## Reduce stress in yourself and others by:

- Sharing accurate facts about COVID-19.
- Understanding the actual risk to yourself and people you care about. When you share accurate information, you can help make people feel less stressed.
- Minimizing watching, reading or listening to news that causes you to feel anxious or distressed.
- Seeking updates at specific times during the day, once or twice. The constant stream of news and reports about an outbreak can get anyone worried.
- Seeking information only from trusted sources. Gathering information at regular intervals in order to help you distinguish facts from rumors. Below is a list of **TRUSTED SOURCES**:
  - World Health Organization ([www.who.it](http://www.who.it));
  - Center for Disease Control and Prevention ([www.cdc.gov](http://www.cdc.gov))
  - Indian Council of Medical Research ([www.icmr.nic.in](http://www.icmr.nic.in))
- Taking care of your body - take deep breaths, stretch, or meditate. Try to eat healthy, well-balanced meals, exercise regularly, get plenty of sleep and avoid alcohol and drugs.
- Make time to unwind. Try to do some other activities that you enjoy. Connect with others. Talk with people you trust about your concerns and how you are feeling.

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# Anxiety, Stress & Coping For Well-Being During COVID-19 Pandemic

## Caring for children:

- Children and teens react according to what they see from the adults around them.
- When parents and caregivers deal with the COVID-19 calmly and confidently, they can provide the best support for their children and can be a role model to the children.
- Talk to your child or teen about the COVID-19 outbreak.
- Answer questions and share facts about COVID-19 in a way that your child or teen can understand. Reassure your child or teen that they are safe. Let them know it is ok if they feel upset.
- Limit your family's exposure to news coverage of the event, including social media. Children may misinterpret what they hear and can be frightened about something they do not understand.
- Try to keep up with regular routines. If schools are closed, create a schedule for learning activities and relaxing or fun activities.



## Caring for older adults:

- Encourage social distancing – at least 1 meter.
- Older adults, especially in isolation and those with cognitive decline/dementia, may become more anxious, angry, stressed, agitated and withdrawn.
- Share simple facts. Give clear information about how to reduce risk of infection in a way that they understand.
- Repeat the information whenever necessary. Instructions need to be communicated in a clear, concise, respectful and patient-friendly manner. Display information in writing or pictures if necessary



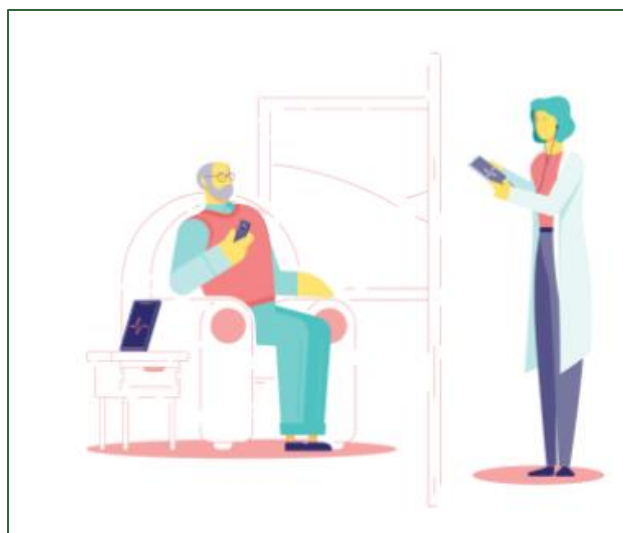
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# Anxiety, Stress & Coping For Well-Being During Covid-19 Pandemic

## For those in isolation:

- Stay connected and maintain your social networks. Even when isolated, try as much as possible to keep your personal daily routines or create new routines.
- If health authorities have recommended limiting your physical social contact to contain the outbreak, you can stay connected via e-mail, social media, video conference and telephone.
- During times of stress, pay attention to your own needs and feelings. Engage in healthy activities that you enjoy and find relaxing. Exercise regularly, keep regular sleep routines and eat healthy food



### **ATTENTION**

**\*It's on the surfaces and our hands being predominately a DROPLET infection!!!**

- \* ***Social distancing*** (Avoid crowds, person to person 3 feet away, avoid public areas, avoid touching objects and surfaces)
- \* ***Hand washing with Soap and Water before and especially after any activity (>60% Alcohol scrubs/gels second choice)***
- \* ***Cough Etiquette*** (Cough/sneeze into bend of elbow, avoid reuse of tissues, avoid handkerchiefs)
- \* ***Avoid touching face region***
- \* ***Clean your Mobile cell***

*AND share with all on your teams...*

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# Identified Areas for Care of COVID-19 Patients

## *Acute Respiratory Illness Screening Clinic:*

- Outdoor cross ventilated, PPE, online form for registration and clinical details/decisions, Doc/nurse, shifts q8hr

## *ARI Emergency Clinic:*

- Indoor, Skilled ACLS team, PPE, for advanced airway management

## *Emergency:*

- Indoor, Skilled ACLS team, PPE, for advanced airway management

## A) Isolation Cohort Cross Ventilated ward (Swab pending, Symptomatic)

- Indoor, Cohort Isolation, no exit, Food delivered inside, 6ft-3mt distance, no visitors/no attenders, 1 Duty doc/ 1 Nurse, PPE, Q8hr shifts, increased manpower/monitoring according to severity of illness Bi, Bii, Use simplified case sheet and monitoring for Corona, Add Medication chart if medicines required.

## B) Isolation Cross Ventilated ward (Positive report, Symptomatic Mild-Moderate Bi, Bii)

- Indoor, Cohort Isolation, no exit, Food delivered inside, 3ft-1mt distance, no visitors/no attenders, 1 Duty doctor/ 1 Nurse, PPE, Q8hr shifts, increased manpower/monitoring according to severity of illness Bi, Bii, Use simplified case sheet and monitoring for Corona, Add Medication chart if medicines required.

## C1) Isolation Separate Rooms (Staff/Students, Swab pending, only Mild-Moderate Bi, Bii)

- Indoor, Separate room, no exit, Food delivered inside, no visitors/no attenders, Self-monitoring use simplified case sheet and monitoring for Corona, twice a day reporting to designated doctor per 15 patients/designated Nurse, PPE only if entering, Q12hr shifts, increased manpower/monitoring according to severity of illness Bi, Bii. Add Medication chart if medicines required.

## C2) Isolation Separate Rooms (Staff/Students, Swab Positive, only Mild-Moderate Bi, Bii)

- Indoor, Separate room, or bi bed cohort Isolation, no exit, Food delivered inside, no visitors/no attenders, Self-Monitoring where possible using simplified case sheet and monitoring for Corona, Twice a day reporting to designated Doc per 15 patients/designated Nurse, PPE only if entering, Designated Doc per 15 patients, Designated Nurse ratio depending upon needs, Q8-12hr shifts, increased manpower/monitoring according to severity of illness Bi, Bii, Add Medication chart if medicines required.

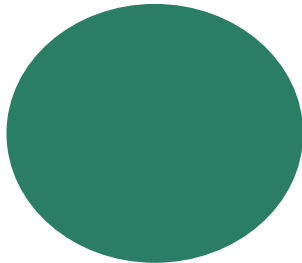
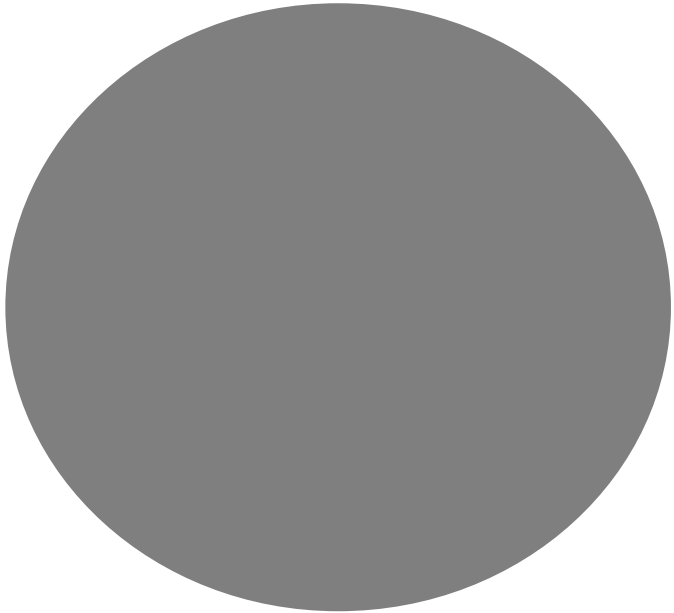
## • MICU Corona Negative Pressure Rooms

As per critical care full PPE full isolation protocol

## • MICU Corona Wing Cohort Single AHU

As per critical care full PPE full isolation protocol





# TELE-CONSULTATION GUIDELINES FOR SJMCH DOCTORS

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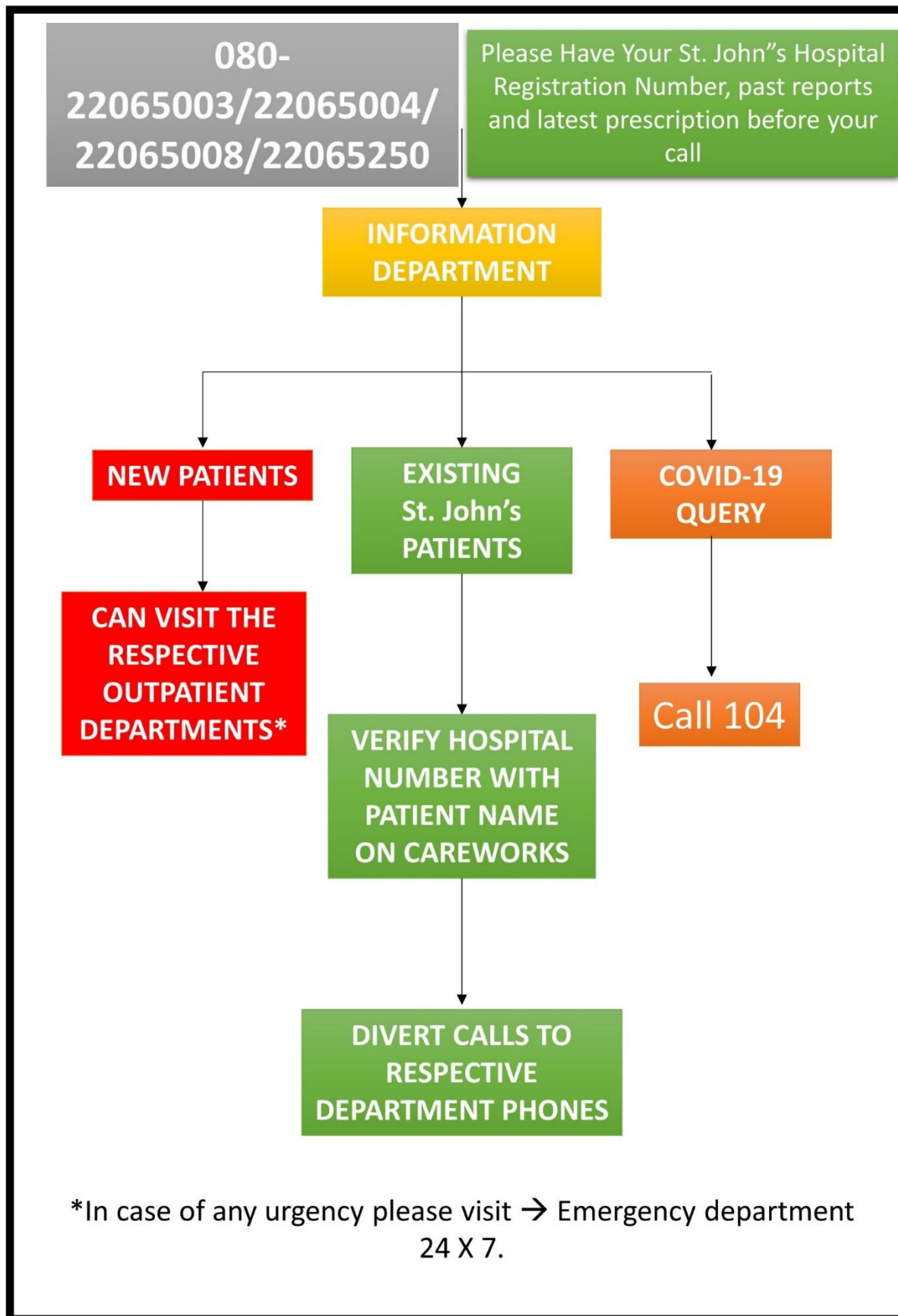
# TELE-CONSULTATION GUIDELINES FOR DOCTORS

St. John's Medical College Hospital, Bangalore announces during this existing COVID-19 crisis to initiate teleconsultation services for **all existing patients of SJMCH**. The teleconsultations services will be function for the period of lockdown of 21 days or till such time the lockdowns are effective by the Government of Karnataka. SJMCH is not charging the patient for this service. The following are the guidelines for the doctors who have volunteered to be a part of this service:

- 1) The patients who are registered with the St. John's Medical College Hospital with a valid hospital registration number will be verified by the Information Department before connecting a call to the respective departments.
- 2) Following disclaimer will be played "Dear Patients, this tele-consultation service has been accessed voluntarily by you and is provided by St. John's Medical College Hospital to reduce visits to the hospital in the existing COVID19 crisis. Your doctor's advice is only based on the accuracy of verbal details provided by you, as the mandatory physical examination is not possible. This is not permitted for any medicolegal purposes. We disclaim any liability or responsibility, of harm or injury happening due to misinformation, misrepresentation, misinterpretation and impersonation. If you are experiencing an urgent medical problem, please visit the nearest Emergency. This is a service accessed voluntarily by individuals knowing the limitations and disclaimers. If accepting these conditions, continue the call that may be recorded."
- 3) After history, please assess the severity and determine if it requires home or a hospital visit or hospitalization.
- 4) Please provide advice only for minor ailments or for routine known follow up patients.
- 5) Provide instructions based on the existing medications available with the patient. Either in terms of alteration of dose or stopping/continuation of medications. Please avoid any new prescriptions, barring exceptions for OTCs.
- 6) As of now we are not equipped to send a prescription in pdf format immediately back to the patient by mobile telecommunication. However, the department email may be used with discretion and only by pdf format with necessary prescription details in the government recommended format.
- 7) Do not prescribe anything for symptoms of clinical suspicion of COVID-19. Such patients must mandatorily report to government screening centre by calling Telephone No. 104.
- 8) Try to limit the duration of consultation to as short as possible.
- 9) If verifications from the OPD folder is necessary, then the call needs to be differed till review is enabled.
- 10) This service will be available only between a stipulated period. Tentatively 10.00AM to 1PM.



# TELE-CONSULTATION GUIDELINES FOR DOCTORS



**DISCLAIMER: For Private Circulation and Academic Non-Commercial Purpose only**

**DO YOU HAVE ANY INTERESTING CONTENT TO BE PUBLISHED?**

Write to Dr. Avinash. H. U: [avinash.hu@stjohns.in](mailto:avinash.hu@stjohns.in)

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# WORKFLOW OF EMBALMING

## STEP 1

**Request Phone call** from SJMCH (Emergency Medicine/ MICU) to the first contact doctor in-charge of embalming (Dr. Stephen Dayal – contact details provided below) from the Department of Anatomy.

Any inpatients of SJMCH who have expired in the hospital can be considered for embalming services, if the attendants of the patients so wish, **EXCEPT** in case that death was due to HIV/Hepatitis/ Fulminant Tuberculosis/COVID 19.

At the time of the call made by the doctor/nurse to the first contact doctor in charge of embalming, the doctor/nurse must share the contact number of the attendant.

**STEP 2:** The doctor/nurse must then inform the attendant about the following:

- Proceed for payment at the emergency cash counter (embalming procedure charges Rs 4500/Dressing charges Rs 1200/ Retaining charges Rs 1200)
- Collect the receipt of the payment.
- Collect the **Original Death certificate** from the hospital.
- Location of the embalming centre.
- Inform the concerned doctor/nurse/family to transport the body from hospital to the embalming service centre in the medical college.

## STEP 3 EMBALMING SERVICE CENTER

- The first contact doctor in-charge of embalming to inform the senior lab technician (Mr Satish T S) and lab attendant (Mr Sagaya Raj) to be ready to receive the body for the procedure.
- The senior lab technician and/or the Lab attendant will open the embalming service centre and receive the body from the attendant(s) of the deceased person.
- The senior lab technician will keep the documents ready and make the necessary entries in the register.
- Once all the above are completed, the doctor in-charge will verify and sign the documents.
- The doctor-in-charge/senior lab technician will then explain the procedure to the attendant(s) and inform them about the waiting time (minimum 45 minutes).
- The doctor-in-charge will then examine the body and give the go-ahead for embalming to be performed.
- The family will be informed to remove jewellery and any other personal belongings from the body of the deceased before embalming.

# WORKFLOW OF EMBALMING

## STEP 4 EMBALMING

- The doctor-in-charge will request the Technician/ Attender to do the procedure and dressing.

## STEP 5

- The doctor-in-charge and the technician will complete the necessary documentation.
- The embalming certificate will be handed over to the attendant.
- The embalmed body will be handed over to the attendant.

### *Protocol to be followed in case of embalming request from registered body donors/ outside SJMCH deaths during the covid-19 pandemic*

1. Confirm the cause of death from the death certificate issued by the registered medical practitioner.
2. Embalming of the body is not allowed if death is confirmed to be due to COVID 19.
3. Take a history of the following:
  - a) International travel within 14 days of the date of death.
  - b) Close contact with a confirmed COVID-19 patient prior to death.
4. If no history of any of the above, go ahead and complete embalming of the deceased body.
5. Universal precautions are to be compulsorily followed before, during and after embalming by the technician and attender.
6. Clean and disinfect the embalming theatre once the procedure is complete.
7. Instruct the attender and technician to compulsorily follow hand hygiene using soap and water after the procedure.
  - Advise the attender to have a bath and change his clothing immediately after the procedure.
  - Contact Details: On call 24/7
  - *First Contact*
    1. Dr Stephen Dayal, Associate Professor, I/C Embalming, Dept of Anatomy - 9845225103
    2. Mr Satish T S, Senior Lab Technician, Dept of Anatomy - 9880962126
    3. Mr SagayaRaj, Lab attendant, Dept of Anatomy - 9731104893
  - *Second Contact:*
    1. Dr Balasubramanyam V, Professor I, Dept of Anatomy- 9379258593
    2. Dr Yogitha R, Professor II & HOD, Dept of Anatomy - 9945008348

\*NOTE: Voluntary Body donation is under suspension during this outbreak of COVID 19 till further orders.\*

## Standard Precautions to be followed by health care workers while handling dead bodies of COVID-19

Standard infection prevention control practices should always be followed. These include:

1. Hand hygiene
2. Use of personal protective equipment (e.g., water resistant apron, gloves, masks, eyewear)
3. Safe handling of sharps
4. Disinfect bag housing dead body; instruments and devices used on the patient.
5. Disinfect linen. Clean and disinfect environmental surfaces.

### Training in infection and prevention control practices

All staff identified to handle dead bodies in the isolation area, mortuary, ambulance and those workers in the crematorium / burial ground should be trained in the infection prevention control practices.

### Removal of the body from the isolation room or area

- The health worker attending to the dead body should perform hand hygiene, ensure proper use of PPE (water resistant apron, goggles, N95 mask, gloves).
- All tubes, drains and catheters on the dead body should be removed.
- Any puncture holes or wounds (resulting from removal of catheter, drains, tubes, or otherwise) should be disinfected with 1% hypochlorite and dressed with impermeable material.
- Apply caution while handling sharps such as intravenous catheters and other sharp devices. They should be disposed into a sharps container.
- Plug Oral, nasal orifices of the dead body to prevent leakage of body fluids.
- If the family of the patient wishes to view the body at the time of removal from the isolation room or area, they may be allowed to do so with the application of Standard Precautions.
- Place the dead body in leak-proof plastic body bag. The exterior of the body bag can be decontaminated with 1% hypochlorite. The body bag can be wrapped with a mortuary sheet or sheet provided by the family members.
- The body will be either handed over to the relatives or taken to mortuary.
- All used/ soiled linen should be handled with standard precautions, put in biohazard bag and the outer surface of the bag disinfected with hypochlorite solution.



## Standard Precautions to be followed by health care workers while handling dead bodies of COVID-19

- Used equipment should be autoclaved or decontaminated with disinfectant solutions in accordance with established infection prevention control practices.
- All medical waste must be handled and disposed of in accordance with Biomedical waste management rules.
- The health staff who handled the body will remove personal protective equipment and will perform hand hygiene.
- Provide counseling to the family members and respect their sentiments.

### Environmental cleaning and disinfection

All surfaces of the isolation area (floors, bed, railings, side tables, IV stand, etc.) should be wiped with 1% Sodium Hypochlorite solution; allow a contact time of 30 minutes, and then allowed to air dry.

### Handling of dead body in Mortuary

- Mortuary staff handling COVID dead body should observe standard precautions.
- Dead bodies should be stored in cold chambers maintained at approximately 4°C.
- The mortuary must be kept clean. Environmental surfaces, instruments and transport trolleys should be properly disinfected with 1% Hypochlorite solution.
- After removing the body, the chamber door, handles and floor should be cleaned with sodium hypochlorite 1% solution.
- Embalming of dead body should not be allowed.

### Autopsies on COVID-19 dead bodies

Autopsies should be avoided. If autopsy is to be performed for special reasons, the following infection prevention control practices should be adopted:

- The Team should be well trained in infection prevention control practices.
- The number of forensic experts and support staff in the autopsy room should be limited.
- The Team should use full complement of PPE (coveralls, head cover, shoe cover, N 95 mask, goggles / face shield).
- Round ended scissors should be used
- PM40 or any other heavy duty blades with blunted points to be used to reduce prick injuries
- Only one body cavity at a time should be dissected
- Unfixed organs must be held firm on the table and sliced with a sponge – care should be taken to protect the hand
- Negative pressure to be maintained in mortuary. An oscillator saw with suction extraction of the bone aerosol into a removable chamber should be used for sawing skull, otherwise a hand saw with a chain-mail glove may be used



## Standard Precautions to be followed by health care workers while handling dead bodies of COVID-19

- Needles should not be re-sheathed after fluid sampling – needles and syringes should be placed in a sharps bucket.
- Reduce aerosol generation during autopsy using appropriate techniques especially while handling lung tissue.
- After the procedure, body should be disinfected with 1% Sodium Hypochlorite and placed in a body bag, the exterior of which will again be decontaminated with 1% Sodium Hypochlorite solution.
- The body thereafter can be handed over to the relatives.
- Autopsy table to be disinfected as per standard protocol.

### Transportation

- The body, secured in a body bag, exterior of which is decontaminated poses no additional risk to the staff transporting the dead body.
- The personnel handling the body may follow standard precautions (surgical mask, gloves).
- The vehicle, after the transfer of the body to cremation/ burial staff, will be decontaminated with 1% Sodium Hypochlorite.

### At the crematorium/ Burial Ground

- The Crematorium/ burial Ground staff should be sensitized that COVID 19 does not pose additional risk.
- The staff will practice standard precautions of hand hygiene, use of masks and gloves.
- Viewing of the dead body by unzipping the face end of the body bag (by the staff using standard precautions) may be allowed, for the relatives to see the body for one last time.
- Religious rituals such as reading from religious scripts, sprinkling holy water and any other last rites that does not require touching of the body can be allowed.
- Bathing, kissing, hugging, etc. of the dead body should not be allowed.
- The funeral/ burial staff and family members should perform hand hygiene after cremation/ burial.
- The ash does not pose any risk and can be collected to perform the last rites.
- Large gathering at the crematorium/ burial ground should be avoided as a social distancing measure as it is possible that close family contacts may be symptomatic and/ or shedding the virus.

