अखिल भारतीय आयुर्विज्ञान संस्थान, एम्स ऋषिकेश
All India Institute of Medical Sciences
Rishikesh, Uttarakhand, India, 249203

Clinical Management

Protocol of Covid-19

AIIMS, Rishikesh

Contents

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Screening @ inside area after entry at Gate 3

PROVISIONAL SCREENING FOR COVID-19 SUSPECT

1. Screening questions to be asked with a printed form:
   - Have u suffered from any of the following symptoms (**fever, cough, cold, throat pain, breathlessness, chest pain, loss of smell/taste, diarrhea, abdominal pain, or bleeding tendency)** in past 14 days
   - Have you visited any **foreign country** or **Indian place/region** where positive cases being detected in past 14 days
   - Do you want to be screened or have any concern for Corona
2. Making patient line as per above questions and deciding whether patient will go to Covid-19 centre or other area
3. Availing Hand hygiene and at least 1m physical distancing of patient and attendants
4. HCWs including guards to wear N95 mask, headcover, face shield, gloves, and scrub suit/disposable gown as per work types

COVID- 19 SUSPECT/CONFIRMED

COVID- 19 NEGETIVE

ENTRY at SCREENING OPD

STABLE PATIENT COMING BETWEEN 8AM TO 4PM

ENTRY TO COVID-19 EMERGENCY

CRITICALLY ILL PATIENT ANYTIME

All PATIENT COMING BETWEEN 4PM TO NEXT DAY 8 AM

ENTRY at NON-COVID SCREENING OPD

	MILD	MODERATE	SEVERE
Clinical Criteria			
SpO2	> 94 % on Room Air	90 - 94 % on Room Air	< 90 % on Room Air
RR (/min)	< 24	24 – 30	> 30
Symptoms	Fever +/-	Fever with breathing dif-ficulty	Fever with respiratory distress
Chest Xray (evaluate 3 zones in each lung - upper, mid and lower zones)	Normal	Pneumonia involving 1 or two zones	Pneumonia involving more than 2 zones
CT Chest Criteria			
Average of the % involvement of each lobe	Normal or < 25 %	< 50%	> 50%

WHEN TO SUSPECT COVID-19 ?

1. A patient with severe acute respiratory illness – SARI /Influenza like symptoms - ILIs (**fever and** at least one sign/symptom of respiratory disease (e.g., cough, shortness of breath) OR **Chest pain** OR **Acute loss of smell/taste** OR **Acute Diarrhea** OR **Abdominal pain** OR **bleeding tendency** OR **Afebrile states* associated** with any respiratory illness, **AND** a **history of travel** to or residence in a country/area or territory reporting local transmission (see WHO/NCDC designated areas) of COVID-19 disease during the 14 days prior to symptom onset

2. A patient with above symptom category **AND** having been **in contact with** a confirmed or probable COVID19 case in the last 14 days prior to onset of symptoms

3. A patient **requiring hospitalization** with any of the above symptoms

*** Afebrile state:** Chronic lung/liver/kidney disease, neurological, hematological disorder, Pregnancy, old age (>60), morbid obesity, malignancy, diabetes, persons of NSAIDs/corticosteroids and other immunosuppressive, or HIV-AIDS**. Maintain high index of suspicion in these patients**

IF YES

REQUIRES ADMISSION @Isolation ward/CCU

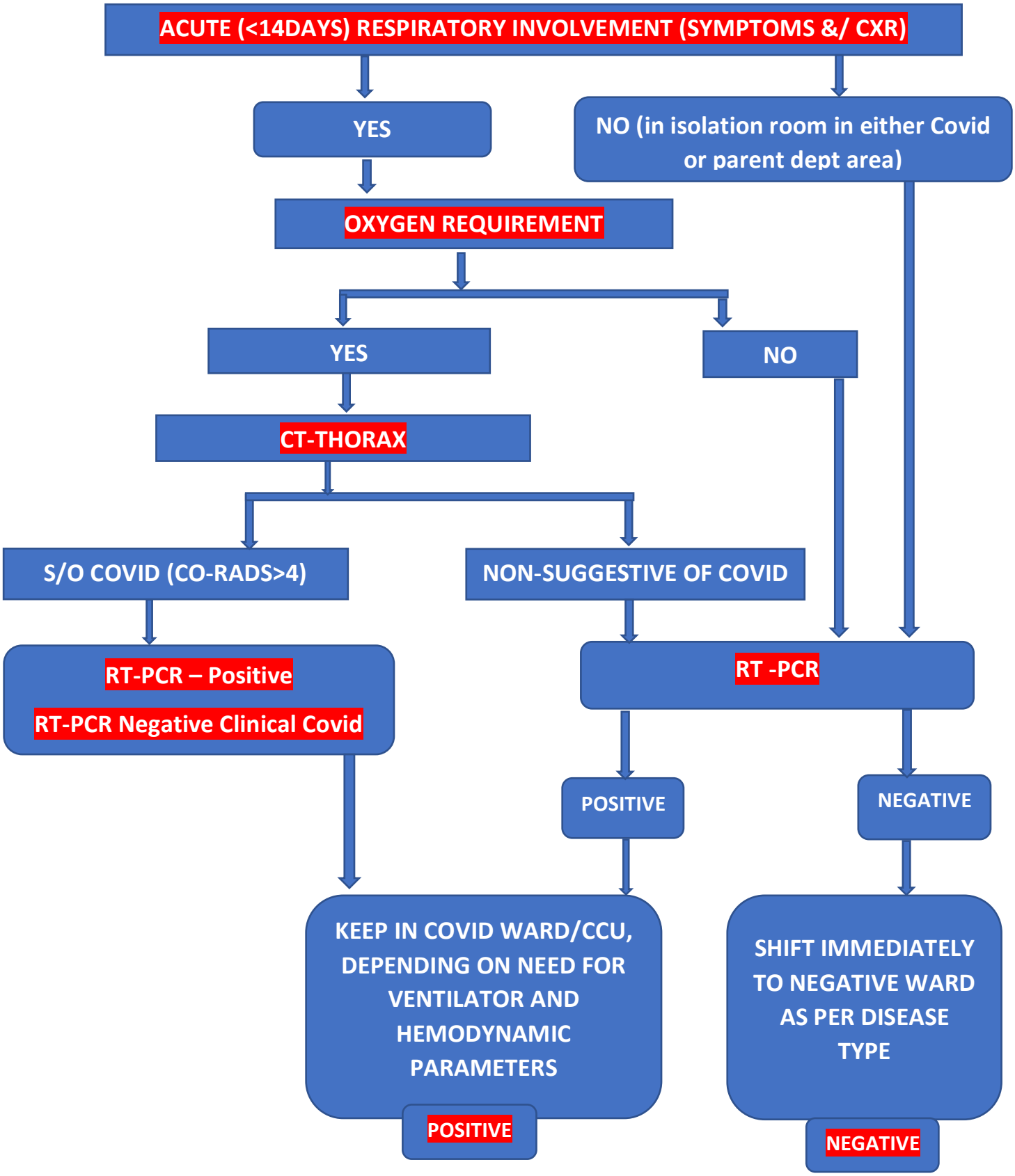
1. Any Severe symptom category – **HDU/CCU of AIIMS Rishikesh (DCH)**
2. Any Moderate symptom category OR mild symptom category AND any co-morbidities - chronic Lung/heart/liver/kidney/ neurological/ blood disease/ Immunological diseases, morbid obesity, malignancy, uncontrolled hypertension /diabetes, HIVAIDS, on long term immunosuppressant/NSAIDs, Pregnancy, Age >60 years – **Referred to nearby category 2 hospitals (DCHC)**
3. Mild symptoms but staying alone/monitoring not possible – **Referred to nearby Facility based isolation/CCC**

DOES NOT REQUIRES ADMISSION

1. Mild symptom category
2. Can be monitored at home

*Advised for Covid-19 testing, **Home Isolation** (till ***reports negative and 24hrs of clinical recovery***), and basic medical management.

HOW TO APPROACH SUSPECT (Rapid antigen negative) PATIENT W.R.T. RT-PCR



N.B. - DECISION OF TREATING FACULTY IN SUSPECT/POSITIVE AREA AND EMERGENCY DEPT IS FINAL IN DECIDING WHICH DEPARTMENT/AREA PATIENT TO BE ADMITTED AS PER HIS/HER ASSESSMENT (IF REQUIRED ALONG WITH CONSULTATION WITH CONCERNED DEPT)

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FLOW OF PATIENTS W.R.T. ADMISSION FROM ED

PATIENT IN ED (Do Rapid antigen test, send RTPCR sample)

DOCUMENTED COVID (RT-PCR/Antigen) POSITIVE

COVID SUSPECT (Antigen Negative)

O2 REQUIREMENT OR RESPIRATORY SYMPTOMS

NO

YES

Parent Dept suspect area if available, otherwise isolation rooms in Covid area

COVID CCU beds

COVID HDU beds

COVID REPORT POSITIVE OR RT-PCR NEGATIVE CLINICAL COVID*

INTUBATED/NIV/HF NC/MOF especially requiring HD: CCU cubicle

Other Category 3 patients: HDU cubicle/room

HCW/VIPs STABLE PATIENT: L6C1 OR L2D4

MUCOR PATIENT: L6C6 first, if more, other dedicated areas

AFTER 20TH DAY OF SYMPTOM ONSET in Category 3 AND STILL REQUIRING Hospital/ICU CARE DUE TO LUNGS INVOLVEMENT: Shift to Parent Dept ward/ICUs

After 10th Day OF SYMPTOM ONSET in Category 1/2 AND asymptomatic for 24hrs: Discharge

N.B. - THIS IS FOR GENERAL GUIDANCE TO SHIFT PATIENTS ON PRIORITY BASIS. HOWEVER, IF ANY DIFFICULTY IS BEING FACED, CONTACT PATIENT TREATING FACULTY INCHARGE FOR FINAL DECISION.

✓ COVID ADMISSION IS A DYNAMIC PROCESS, EACH ONE IS EXPECTED TO CONTRIBUTE TO MANAGE THIS CRISIS.

* CLINICAL COVID – Patients with influenza-like illnesses (ILI) and imaging (CXR – peripheral opacities /CT-chest - if CT – CORADS ≥ 4) suggestive of Covid-19. If clinically non-COVID and RTPCR negative, shift to parent dept immediately if not previously.

Quarantine policy

- All primary contacts will be traced by investigating officer and asked to come Screening OPD/designated place for detail risk assessment
- Individuals in category of primary contact with COVID 19 positive patient will be put on quarantine for specific days as per GOI guideline
- Covid testing will be done at D1 (for unknown index case) and D5-10 of quarantine unless symptomatic inbetween and at that time another testing will be done
- All primary contacts will be asked for Ivermectin prophylaxis and if they want, prescribe.
- Decision of quarantine team (appointed through MS office) will be final
- Accommodation for quarantined personal will be provided by hospital administration either at hostel or other separate facility
- Date of re-joining to duty will be decided by above personel
- Any patient or their attendants exposed to any positive HCW/patient, will be treated in same way as HCW quarantine and continue their ongoing management.
- All suspected or quarantined patient if died will be considered as positive patient and dead body management is same as Covid positive patient. But suspect patient dead body can be handed over to relatives after due undertaking and police information.

Ivermectin prophylaxis of health-care professionals

- All health care professionals and their close family members can volunteer to take prophylaxis.
- Ivermectin tablets to be taken as prophylaxis - 200mcg/kg, two doses, 72hours apart [40-60kg : 12mg; 60 - 80kg : 18mg; > 80 kg : 24mg]

RT-PCR TESTING INDICATION

1. All symptomatic (ILI symptoms) individuals with history of international travel in the last 14 days.
2. All symptomatic (ILI symptoms) contacts of laboratory confirmed cases.
3. All symptomatic (ILI symptoms) health care workers / frontline workers involved in containment and mitigation of COVID19.
4. All patients of Severe Acute Respiratory Infection (SARI) or any of the above listed symptoms with severity.
5. Asymptomatic direct and high-risk contacts of a confirmed case to be tested once between day 5 and day 10 of coming into contact.
6. All symptomatic ILI within hotspots/containment zones.
7. All hospitalised patients who develop ILI symptoms.
8. All symptomatic ILI among returnees and migrants within 7 days of illness.
9. All care takers who wants to be with patients

Sample collection:

Collection location: Designated place beside screening OPD or in isolation rooms or in Emergency
Collection time: 24hrs

Preferred sample: Throat and Np swab in viral transport media (VTM) for RT-PCR and transported on ice; Np swab for Antigen test; Serum for IgG

Alternate: Nasopharyngeal swab, BAL or endotracheal aspirate which has to be mixed with the viral transport medium and transported on ice for RT-PCR

General guidelines for RT-PCR sampling:

1. Trained health care professionals to wear appropriate PPE with latex free purple nitrile gloves while collecting the sample from the patient
2. Maintain proper infection control when collecting specimens
3. Restricted entry to visitors or attendants during sample collection
4. Complete the requisition form in RT-PCR app for each specimen (both for Antigen and RT-PCR testing) submitted
5. 30min gap between two sample collections if in an isolation room
6. Proper disposal of all waste generated
7. Maintaining register of all patients who are tested, report delivery to right place, person and in right time, and update report to non-admitted patients

Lower respiratory tract

- Bronchoalveolar lavage, tracheal aspirate, sputum
- Collect 2-3 mL into a sterile, leak-proof, screw-cap sputum collection cup or sterile dry container

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INVESTIGATIONS FACILITIES AVAILABLE FOR COVID PATIENTS

1. **TRAUMA LABORATORY : for all patients**

LABORATORY	INVESTIGATIONS	TIMING
Hematology	CBC, PT, APTT, Urine R/M, CSF(TLC+DLC)	24x7
Biochemistry	LFT, KFT, HBA1C, Lipid profile, hs-CRP, Amylase, Lipase, LDH, Blood Sugar, NT Pro-BNP, D-Dimer, fibrinogen, CPK MB, Trop I, Ferritin	
Microbiology	Viral Marker (HIV, HBSAg, HCV), Procalcitonin, Thyroid profile, Galactomannan	
ABG		
CSF/ASCITIC FLUID/PLEURAL FLUID-TLC/DLC/PROTEIN/SUGAR/LDH		

2. **TRAUMA RADIOLOGY : for all patients**

INVESTIGATIONS	TIMING
X-ray/CT Scan/MRI/USG	24x7

3. **MICROBIOLOGY LAB (MAIN BUILDING): for all patients**

INVESTIGATIONS	TIMING
Nasal Swab & Oral Swab for Covid-19 Testing	24x7
• Blood culture • Urine culture • CSF culture • Other fluid culture • All fluid stainings	8AM TO 6 PM

4. **BIOCHEMISTRY & HISTOPATHOLOGY (MAIN BUILDING): for all patients**

INVESTIGATIONS	TIMING
All biopsy samples (formalin fixed for 24 hours)	8AM TO 6 PM
All other samples	8AM TO 6 PM

****All other samples which are required for COVID patient management will be received in central lab and concerned dept will arrange for testing and reporting.**

#All the fluids have to be sent in 10% Formalin.

SOP of Blood Collection and processing for Biochemical analysis

This SOP describes procedure for blood collection, transport and processing for biochemical analysis.

Responsibility

- It is the responsibility of the personnel carrying out this procedure to ensure that all steps are completed.

Blood collection system

- Hand sanitization with 70% alcohol
- To wear personal protective equipment (PPE), gloves, protective glasses and mask
- **Blood collection tube**: Plain tube (red cap) for routine biochemistry and CSF protein and glucose, Sodium fluoride & oxalate (grey cap) for Plasma glucose
- **A polystyrene container:** For packaging and transport of specimen
- **Refrigerator (2-4°C),** if sample storage is required

Procedure of Blood collection

Patient preparation

- Before proceeding with blood collection, review first if the patient needs special preparation or any special instruction such as fasting sample.
- Absolute patient identity must be established prior to phlebotomy.
- Inspect Requisitions/testing and Tube type.

Sample Collection

- Locate the area for blood collection (e.g Antecubital vein) and sterilize the area with spirit cotton
- Draw blood directly into vacutainer. Fill the tube to the black mark on the tube or ensure minimum 4 ml blood.
- Do not invert or mix the plain tube **(red top).**
- For plasma glucose analysis **(Grey top),** Invert the tube 8–10 times immediately after collection.
- Blood collection tube is labelled appropriately with a unique study identification number generated and/or a bar code label generated electronically
- Record the time at which sample was taken in data management system

Procedure of Sample Transport

- Transport all specimens or containers of blood and other potentially infectious materials in a secondary container (e.g., plastic bag or other container having a liquid-tight seal)
- Secondary container may be put in separate plastic bag with biohazard symbol for transportation. Transport samples (within 4 hours) directly to POCT laboratory for processing
- Ensure good communication with laboratory personal and provide needed information

Sample receiving and processing

- Laboratory staff must wear personal protective equipment (PPE) when conducting work in laboratory. Following precautions may be used to prevent aerosol generation during centrifugation:
  - Use unbreakable tubes (i.e. not glass)
  - Avoid overfilling the tubes
  - Ensure that the centrifuge is properly balanced
  - Use outer, sealable safety cups and **load/unload them preferably in a biological safety cabinet**. A certified biological safety class I or II) is the primary barrier to protect worker from **aerosols**

- **DO NOT** open lid during or immediately after operation. Allow the centrifuge to come to a complete stop and wait at least 30 before opening. This allows time for aerosols to settle if leakage or breakage occurred during the centrifugation run
- Never exceed the specified speed limitations of rotor as listed in the owner's manual
- Decontaminate the inside and outside of the cups or buckets before and after use and inspect seals regularly for ation. Replace as needed
- When possible, install the centrifuge in an enclosed, specially ventilated area that discharges air from the space

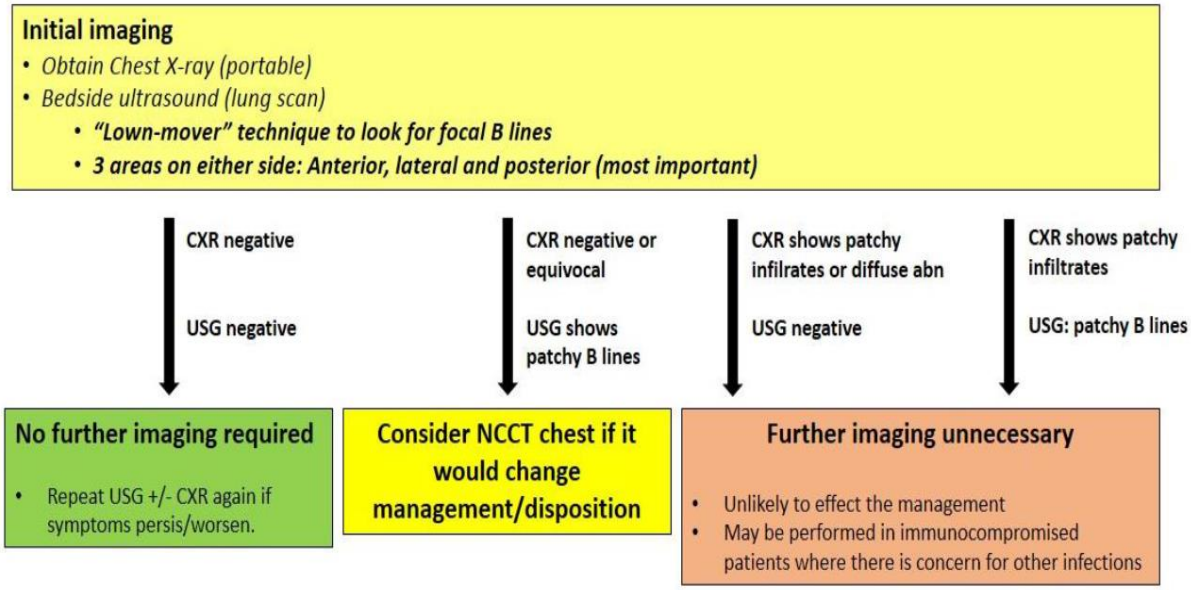
- Handle all blood specimens as potentially infectious material. External surfaces of specimen containers and vials must be decontaminated using a 0.1% sodium hypochlorite
- Use 1% hypochlorite for blood spill with 30 min retention time
- Decontaminate of all surfaces with 0.5% hypochlorite after every batch analysis
- Auto-analysers should be disinfected according to manufacturer instructions before and after sample processing
- Turnaround time for routine biochemistry reports is 4 hours
- PPE must be removed according to biomedical waste management guidelines and hygiene practices including hand washing must be rigorously maintained

Note: ***1% sodium hypochlorite to clean up any spills of blood, serum or urine. Use this solution on all work surfaces at the end of each day***

Radiological services

THORACIC IMAGING IN SUSPECTED COVID-19 PATIENTS:

Schema for chest imaging in patients with respiratory symptoms and suspect of COVID-19



- **X ray, USG and CT services would be available.**
- It is advisable to accumulate cases if possible and do them during later half of their duty hours so as to reduce duration of exposure and this would decrease the need of number of PPE.
- In each shift technician will be present in the waiting room in COVID 19 ward. No technician will remain continuously for more than 6 hrs.
    - They will receive call from referral department.
    - They will donup on call for portable X ray or CT as case may be.
    - If not urgent, they should wait to do the X rays towards the later half of their shift, preferably towards finishing time so that after the procedure, they can don off, change and go out of the hospital to their staying places.
    - If called up early in their shift for a procedure, they should wait in a different area in CT or X ray area donned up till their shift ends. This room should be separate from usual working area in CT or X ray area.
    - At the end of their shift, they will go out of the area as directed and don off in the designated area.
    - They will then leave the trauma building and leave hospital from the exit gates.
    - The persons who are travelling from haridwar, jolly grant and dehradun are presently working from home till lockdown but may be called for duty in case need arises.
    - Technicians will always wear TLD batch below PPE.
- **PORTABLE X –RAY**

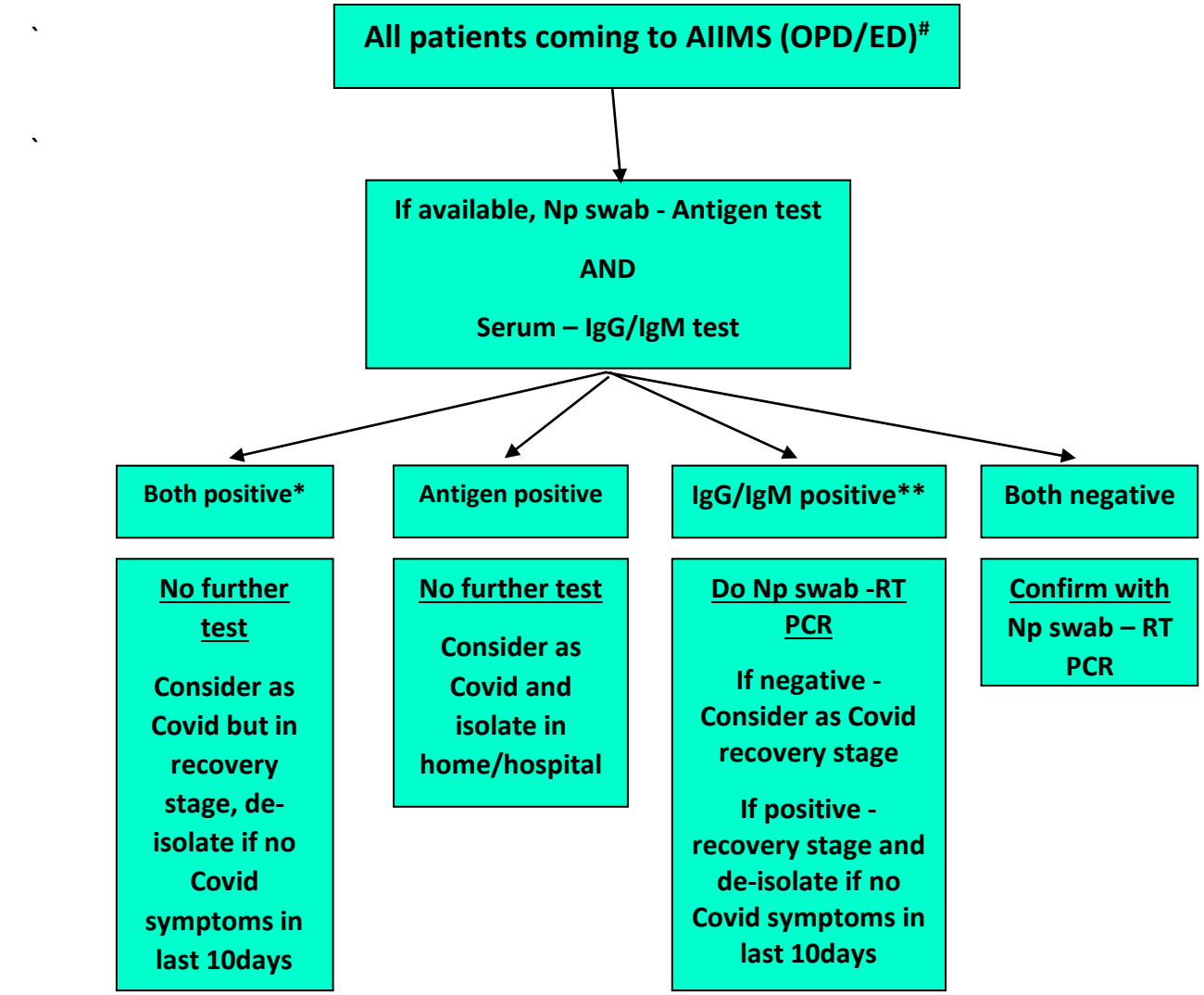
- One portable X ray machine is being used for isolation ward in trauma building.
- On CR reader has been shifted to ground floor in trauma building in triage area and this is being used only for isolation ward.
- Technicians will be doing bed side X rays.
- On called for a portable X ray technician will donup in PPE, do bed side X-ray with protective layer over the cassette and develop it in the CR reader.
- Turnaround time will be 4 hrs for reporting. Reporting to be preferable done in main department from CD prepared by technician and results conveyed to referring department at the earliest.

- **CT scans**
  - Technician will be doing shift duties.
  - Residents and faculty will be reporting this CT on call.
  - One Technician will donup and go to CT room, perform the CT with minimal contact with the patient (shifting etc will be done by attendant bringing the patients from isolation ward).
  - At the end CT films will be printed by the technician.
  - As per guidelines CT of isolation patient should be done at interval of one hour for passive air exchange.
  - After every scan equipment should be thoroughly cleaned as per institutional guidelines.
  - Turnaround time will be 4 hrs for reporting. Reporting to be preferable done in main department from CD prepared by technician and results conveyed to referring department at the earliest.
- **USG (point of care)**
  - One USG machine is shifted in triage area for bed side ultrasound.
  - For effusion/pneumothorax USG may be done by the clinician on duty.
  - For other USG senior resident from radiology may be called.
  - Scans to be done only after donup in PPE.
  - After every scan equipment should be thoroughly cleaned as per institutional guidelines.
  - Reporting will be done stat and conveyed.

**** Imaging should be used judiciously only when required with proper justification of any change in management plan and not for making diagnosis of COVID 19.**

***** If imaging is required X ray should be done first followed by CT. USG should be avoided whenever possible.**

COVID DIAGNOSIS PROTOCOL



 # Possibility of RT-PCR NEGATIVE CLINICAL COVID – Patients with influenza-like illnesses (ILI) and imaging (CXR – peripheral opacities /CT-chest - if CT – CORADS >= 4) suggestive of Covid-19 to be considered

** Possibility of re-infection to be considered*

*** IgG/IgM positive should be co-related with clinical diagnosis of any other infective diseases if suspected and sometimes with Covid symptoms in last 21days helps in diagnosis of Covid when RT-PCR report is negative – This test is being done in Dept of Biochemistry*

Functions of Covid-19 Emergency Area

At security check in

1. Ensure/Provide surgical mask to the patient
2. Attendants will not be allowed inside
3. Attendants to be instructed to stay nearby for sos availability and maintaining 1m distancing

Inside emergency

1. Stabilization of the patient
2. Patients or their attendants requiring testing only to be routed to screening OPD 8am-4pm, but during 4pm to next morning 8am sample collection to be done in emergency isolation room with home isolation/quarantine advice and basic treatments with quarantine team follow-up similar to screening OPD
1. Mandatory investigations before shifting to isolation ward – Covid rapid antigen test (**If antigen is positive, no RTPCR testing, if negative, do RTPCR testing)**, RBS, CBC, KFT, LFT, ECG, CXR PA, HIV 1 & 2, HBs Ag, ANTI HCV Ab, ABG if required.
3. Others investigations if required based on clinical scenario-TROP I, CPK MB, D-dimer, Procalcitonin, CT/MRI, USG
4. Contact Isolation wards for availability of bed based on admission criteria
5. Ensure the patient is shifted to isolation ward in surgical disposable Gown/head cover/mask and accompanied by HCW
6. Maintain a soft copy of all patients' management on daily basis, better will be in excel
7. Fill all forms as required especially death forms of annexures 1-5/6 and undertakings – home isolation/quarantine
8. Maintaining standard and transmission-based precautions are of utmost importance

Functions of Covid-19 Screening OPD

2. Make the patients sit in 1meter distance area from each other according to token no
3. Ensure/Provide surgical mask (if not available, N95) to the patient when entering OPD area and allow attendant with a mask if patient can't take care him/her-self
4. Registration of patient details including contact no and address
5. Doctors will see patients and decide regarding need for testing (Covid rapid antigen test mandatory) and admission. **If antigen is positive, no RTPCR testing, if negative, do RTPCR testing.**
6. Patients requiring testing only to be routed to sample collection center in open designed area with home isolation/quarantine advice and basic treatments
7. Contact Isolation ward for availability of bed if admission required
8. Ensure the patient is shifted to isolation ward in mask/surgical Gown/head cover in wheel chair/trolly and accompanied by HCW en-rooted till emergency entry
9. If no admission required, guide properly home isolation/quarantine with quarantine team follow-up
10. Maintain a soft copy of all patients' management on daily basis, better will be in excel
11. Maintaining standard and transmission-based precautions are of utmost importance

COVID-19 PATIENT ADMITTED IN ISOLATION WARD/ICU

At security check in

A. To receive patient/HCWs with proper mask/surgical grown/Head cover
B. Inform nursing officer at receiving desk
C. Data entry of all personnel entering and exiting from isolation areas.

JUNIOR RESIDENT AT DOCTORS ROOM

- 1st contact Physician of the patient coming from Emergency/Screening OPD
- Will enter data of each patient and ensure protocol being followed

JUNIOR RESIDENT AT BEDSIDE

- Will coordinate with the Doctor room resident when patient is admitted from screening OPD/Emergency
- Will ensure work is being done according to protocol given

Treating SR will supervise all HCWs and take round of all patients on daily basis, overall co-ordinate among all ground HCWs, **and discuss with faculty incharge on daily basis**

Treating Faculty will be physically available on daily basis in Covid-19 areas to co-ordinate SRs, JRs, Nursing officers in all time, will be deciding signatory on 24hr basis, and finally manage patient in all aspects.

Admin/PMI faculty will have more actions w.r.t. patient satisfactions, afternoon bedside round with SNOs, and daily counseling to care takers.

SOP/Protocol of the specific dept will be followed.

Nursing officers will do work on three stations: one reception, one pharmacy/desk in-charge, one in direct patient care

Work division of residents/interns/students

General points for all	• There are averagely two major stations for JRs in all Covid areas: One computer room for data entry and another bedside patient area for treatment; sometimes extra room as per ward type like Dialysis room, sample collection room, common pool area or coffee room, etc. • Reach 15min before duty start time, decide with other co-JR regarding station of work during donning at appropriate place • Take detail over from respective stations • Ensure minimal movement in designated areas unless very essential • Exchange of position in between two major stations in at least 3hrs in each station in morning/evening hours and 4hrs in night hours unless breach occurs • Sometime extra work may be required in special stations under the guidance of SR • Patients will be divided into 2 groups - Suspect or confirmed and either critically ill (any organ impairment) or stable • Suspect pt to be kept in isolation single room/cubicle but confirmed pt will be kept combined in cubicle having 4 or more beds; Critically ill (mostly ventilator/NIV/HFNC) positive pt to be kept in ICU
Few basic principles to be remembered w.r.t. precautions	• No fear inside • Maintain 100% precautions as required • All patient rooms/cubicles are with 100% negative pressure, hence while working in anteroom/corridor/entry point of any patient room, except N95 mask nothing is required but physical distance of 1m among workers, hand hygiene, and standard precautions to be maintained. • Ensure 24 hours negative pressure in the room via exhaust fan • If going inside a patient room transiently (<10min) and exhaust fan is on, no change in PPE required if not directly touching patient or their environments • Ensure complete set of new PPE while examining new patient/sick suspect patient with close contact in suspect area • When working in a composite patient area, make a flow in such a way that always move from suspect patient area towards positive patient area, not reverse. • All positive patients to be taken care with single PPE, while each suspect patients to be taken care with one PPE if contact time is >10min. Hence work division among residents help in

	taking care of multiple suspects in 24 time period with best use of PPE (we have to use rationally so that we can save PPE a lot) • Proper disposal of BMW as per protocol
Junior resident in doctors' computer room	• Ensure that you are wearing N95 Mask and in surgical scrub suit • If any patient comes from screening OPD or Emergency area, informing the resident inside the isolation room about the incoming patient • Filling up the required forms where applicable • Update about the patient status in e-hospital with co-ordination with treating JR; this will be better updated after coming from bedside working station • Everyday census to be updated to ID Whatsapp group and MS office mail by duty JR sharp at 4pm in required format without fail (data to be collected from all Covid area by 3-3.30pm, old data can be retrieved from computer saved data) • Help SR in shifting of Covid-negative patient to respective area • Daily file completion of discharged and dead patients if it is done during your duty time • To prepare death report and forms as per protocol • Overall all computer entry should be done along with preparing notices, letters, data entry, protocol updating/designing, etc • During night time take sleep 4hrs (11pm-7am) with exchange with another JR of 4hrs if patient load is less
Junior resident in bedside patient area	• Ensure that You are wearing full PPE (N95 Mask, Head cover, face shield, gloves, gown, shoe cover) in ICU area and partial PPE in other areas • When new patient comes, ensure patient is always wearing mask if feasible • When new patient comes, take detailed history and perform physical examination and share summary in Whatsapp group under 6points • Check if Investigations done or not, If not done send Investigations (CBC, LFT, KFT, Chest X-Ray, ECG, Viral markers, ABG, D-dimer, HS-CRP, Procalcitonin, LDH, Ferritin) mandatorily • Collect Covid sample if not collected and before leaving the room complete all basic thing whatever required in one flow (just think once before doffing) • For additional investigation discuss with SR/On call faculty and share with next exchanging JR so that when he/she sees same patient will do all • Write a basic treatment and share with nursing officer to start the treatment • Daily - one round per shift of stable patients but monitoring with nursing staff regularly and then SOS basis, continuous monitoring for each unstable patients

	• Daily progress note to be entered in e-Hospital after coming out of bedside area or with coordination with computer room JR and shared in proper format in Whatsapp group @8am and @8pm on 12hrly basis for severe COVID patients • Treatment will be as per the Protocol • Antibiotics to be started after consultation with SR/On call faculty • Use Nebulization, high flow mask when required essentially • Elective intubation when required (coordinate with anaesthesia resident posted in same area or nearby area), otherwise call from ICU area • If patient is in ventilator ensure 24 hours monitoring • Coordinate shifting of Covid-negative patient to non-covid area on urgent basis • In case patient collapses minimal personnel should perform CPR and ensure proper PPE of all those involved in resuscitation • If unsuccessful in resuscitation ensure proper disposal of IV lines, catheter, Tubes and plug orifices of body with cotton and ensure body management by housekeeping staff as per institute protocol
Senior resident	• Ensure that you are wearing N95 Mask and full PPE (when required) • Daily monitoring of treatment • Do detailed round of critically ill Patient and guiding JR/nursing officers throughout at any point of duty time • Decide investigation and treatment plan along with faculty and document in patient file • Coordinate shifting of Covid-negative patient to non-covid area on urgent basis • Ensure daily update of patient status at right time to the higher authority as asked for. • Daily briefing of patient status and prognosis to the attendant • Ensure daily completion of patient details in e-hospital and maintainance of records. • Supervision of work of JR and SNO whether protocol is followed or not • Any issues inform treating faculty
Interns	• Attach with JR and bedside patient management • Ensure that all pt received diet on time, ease of urination/defecation, ease of sleep, relative informed about prognosis, investigation sent and collected, and references attended
MPH/PhD students	• Clinical data operator and manager - will coordinate with admin, treating team, TLs, and MRCs. • Help staffs in making progress sheet/death forms/discharge slips and updated in whatsapp group and ehospital timely.

Classification of patients

Patients shall be classified into two groups – **Suspect** or **Confirmed;** Further each group of patients are classified into two subgroups- **Critical illness or non-critical**

Non-critical Illness (mild category)	• Patients with uncomplicated upper respiratory tract viral infection, may have non-specific symptoms such as fever, cough, sore throat, nasal congestion, malaise, headache. • There is no hypoxia or radiographic evidence of pneumonia. • The elderly, immunosuppressed, with co-morbidities may present with atypical symptoms
Critical illness (mod-severe category)	• Presence of hypoxia (SpO2<93%) or radiographic evidence of pneumonia or ARDS • Any single organ impairment including Kidney, liver, heart • MOFS • Sepsis/Shock • Acute Respiratory Distress Syndrome (ARDS): ✓ Onset: new or worsening respiratory symptoms within one week of known clinical insult. ✓ Chest imaging (radiograph, CT scan, or lung ultrasound): bilateral opacities, not fully explained by effusions, lobar or lung collapse, or nodules. ✓ Origin of edema: respiratory failure not fully explained by cardiac failure or fluid overload ✓ PaO2/FiO2 ≤ 300 mmHg (with PEEP or CPAP ≥5 cm H2O, or non-ventilated)

TREATMENT PROTOCOL

RT-PCR Negative Clinical Covid/ CONFIRMED

NON-CRITICAL ILLNESS (no hypoxia or radiographic evidence of pneumonia)

Supportive treatment only

CRITICAL ILLNESS

1. Presence of hypoxia or radiographic evidence of pneumonia
2. Any single organ failure like kidney, liver, etc
3. MOFS/ARDS
4. Sepsis/Shock

Nurturing care:

In **Viremia phase** (first week of illness), basic viral fever management holds true that includes

1) Start Tab Vit-C 500mg BD for next 15days
2) Paracetamol 650mg (10mg/kg/dose) QID for till febrile, then SOS
3) Tab Monteleukast-LC/Fexofenadine OD if URI symptoms and other symptomatic treatments as required
4) Complete bed rest
5) 100% free of mental stress/fear,
6) Adequate hydration in the tune of 1-2 L extra per day from normal intakes,
7) Taking only easily digestible foods to have low metabolism,
8) Try to sleep in Prone or semi prone positions 4-6 times (30-60min each time with slow change in positions) per day.
9) Add Tab Naproxen 250mg BD for 3days if fever persists after 5days of symptom onset.
10) Add Nebuliser/MDI Budecort 800mcg BD for 5days if cough persists after 5days of symptom onset

Most important in the early viral fever management is to give body rest (this depends on physical rest, mental rest, inner calm and quietness, lowering as low as basal metabolic rate). **This to be discussed with each patient.**

Supportive care:

1. Dexamethasone for Oxygen requiring OR chest infiltrates >25%

2. Inj. LMWH for all symptomatic after 5days of symptom onset or D-dimer >2 UL

3. Awake Proning: Must

4. Azithromycin-5days/Doxycycline-5days/Ivermectin-3days (only in patients with high risk of severity) – As immunomodulatory

5. Other organ supportive therapy as required including antimicrobials as per institute protocol

6. Melatonin – 3-9mg per day at 30min before bed time in mild-moderate cases only

7. Experimental therapy (Tocilizumab, Remdesivir, Plasma therapy, others) – use as per treatment sheet.

Monitoring

a. Daily monitoring of vitals, SpO2, 1MSST (if desaturate in two days in asymptomatic, go for HRCT-CTPA chest and further treatment plan), and symptoms
b. Repeat investigations (CBC, LFT, KFT, D-dimer, HS-CRP, LDH, Chest X-Ray (as required), ECG (as required), USG (as required), ABG (as required), Viral markers (once), Procalcitonin (as required), Pro-BNP (as required), Ferritin (as required), other organ specific tests) every 72 hourly (flexible depending on clinical scenario)
c. Monitoring for adverse drug reactions and documentation
d. Daily update in Case record forms (CRFs – Modules 1, 2, 3) and progress sheets
e. Before discharge ensure 6MWT performance if feasible and document and advise rehabilitation
f. If LTOT, consult Dr Girish (Pulmonary medicine) for TKI/antifibrotic treatment if required

DRUGS	DOSE & SCHEDULE	CONTRAINDICATIONS	ADRS
Tocilizumab	They are experimental therapy, see treatment sheet/consent form for details		
Remdesivir			
Convalescent Plasma therapy			
Dexamethasone ***Pregnancy or breastfeeding women - Prednisolone (40 mg OD) Or hydrocortisone (80 mg BD)**	If GGO 25%-75%, Dexona 6mg IV OD for 5days only in steroid naive or non-immunosuppressive state. If GGO >75% or 25-100% GGO with immunosuppressive state, Dexona 40mg IV OD for 3days f/b 0.2mg/kg/day OD for 7days. GGO % can be averagely calculated by seeing CT images along with CTSS. With steroid, we Must give Pantoprazole, Calcium, Vit-D, and maintaining 100% hygiene (educate all patients) as prophylaxis.	• Hypersensitivity • Systemic fungal infection (e.g. Mucormycosis) • Pulmonary/disseminated tuberculosis • Uncontrolled Bacterial infection **Use with caution:** ✓ DM ✓ Heart failure ✓ Renal dysfunction ✓ Active or latent PUD ✓ Diverticulitis ✓ Abscess ✓ CYP 3A inducers	• Increased appetite • Irritability • Difficulty sleeping (insomnia) • Swelling in your ankles and feet (fluid retention) • Heartburn • Muscle weakness • Impaired wound healing • Increased blood sugar levels
LMWH/Heparin/TPA	See below in detail flow chart in page 23-24		

Supportive management of critically ill patients

1. Give supplemental oxygen therapy immediately to patients with SARI (Severe acute respiratory illness) and respiratory distress, hypoxaemia, or shock: Initiate oxygen therapy at 5 L/min and titrate flow rates to reach target SpO2 ≥90% in non-pregnant adults and SpO2 ≥92-95 % in pregnant patients

2. Use conservative fluid management in patients with SARI when there is no evidence of shock: Patients with SARI should be treated cautiously with intravenous fluids, because aggressive fluid resuscitation may worsen oxygenation

Fluid Management

- ✓ Patients present at different stages of illness in COVID. Those admitted later have increased fluid losses due to fever, tachypnea and other factors.
- ✓ Therefore, there is patient to patient variation of fluid requirement.
- ✓ Broad guidelines can be as follows:
  - ❖ Use conservative fluid management in patients when there is no evidence of shock
  - ❖ For routine maintenance IV fluids @1ml/kg/h of crystalloids
  - ❖ Fluid Creep- Nursing officers to consider all other sources of fluid intake such as oral intake, blood products, enteral or parenteral nutritional intake, fluids required for drug dilution and drug administration
  - ❖ If patient develops hypotension (SBP < 90mm Hg), give 250 – 500 ml of crystalloid fluid over 15-30 min and assess for fluid overload
  - ❖ If no response to fluid overload or if signs of volume overload, reduce fluid administration
  - ❖ IVC collapsibility is a good indicator in such cases
  - ❖ Use vasopressors when shock persists despite fluid resuscitation to maintain mean arterial pressure (MAP) ≥65 mmHg AND lactate is < 2mmol/L, in absence of hypovolemia
  - ❖ Vasopressors (i.e. norepinephrine/ epinephrine/ vasopressin) infusion to be started at a minimum rate to maintain SBP>90mmHg or MAP 60-65 mm Hg

3. Do not routinely give systemic corticosteroids for treatment of bacterial pneumonia or others unless they are indicated for Covid related hypoxia

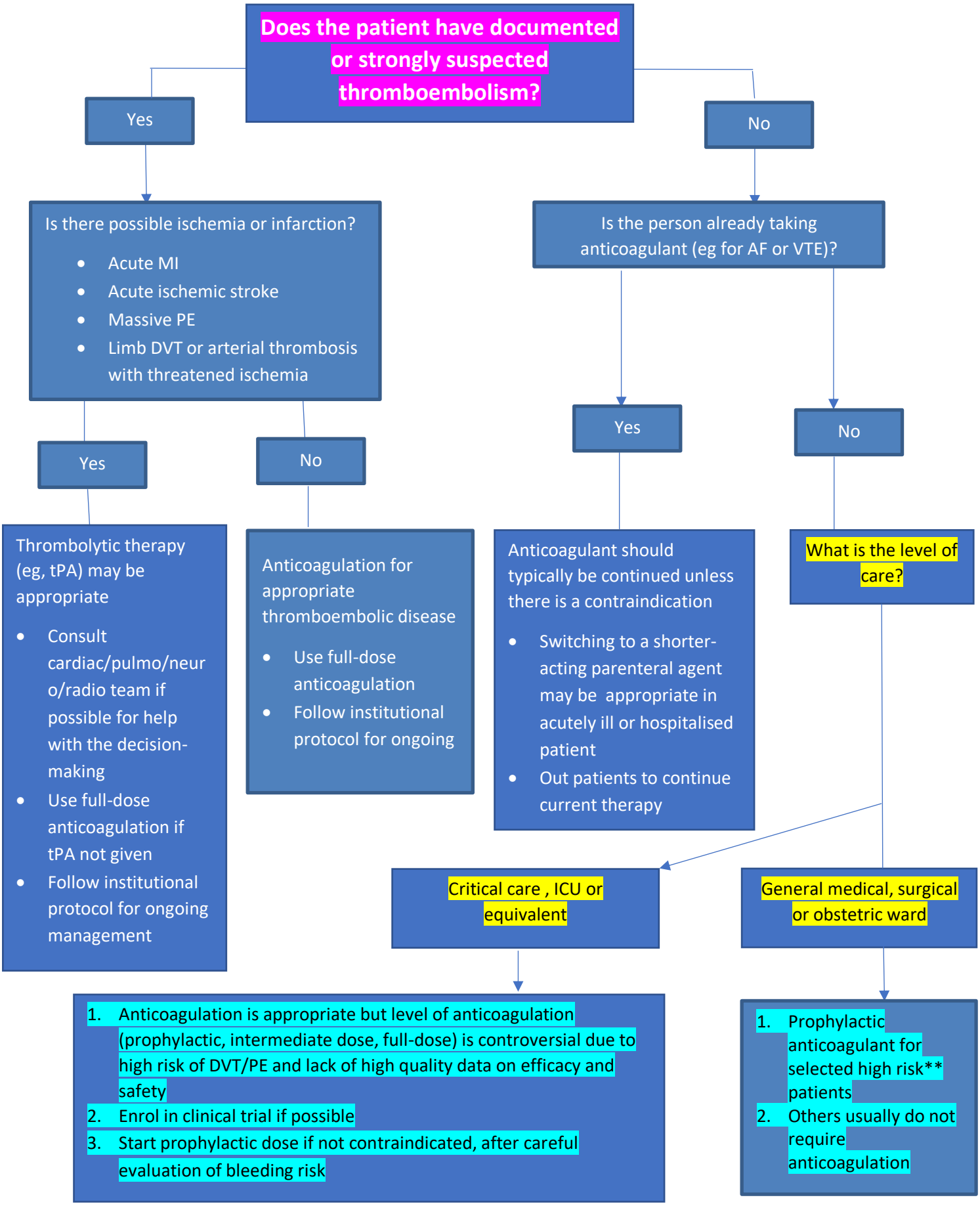
4. Closely monitor patients with SARI for signs of clinical deterioration, such as rapidly progressive respiratory failure and sepsis, and apply supportive care interventions like mechanical intubation immediately

5. During intensive care management of SARI, determine which chronic therapies should be continued and which therapies should be stopped temporarily.

6. Give empiric antimicrobials to treat all likely pathogens causing SARI. Give antimicrobials within one hour of initial patient assessment for patients with sepsis: Although the patient may be suspected to have COVID - 19, administer appropriate empiric antimicrobials within ONE hour of identification of sepsis

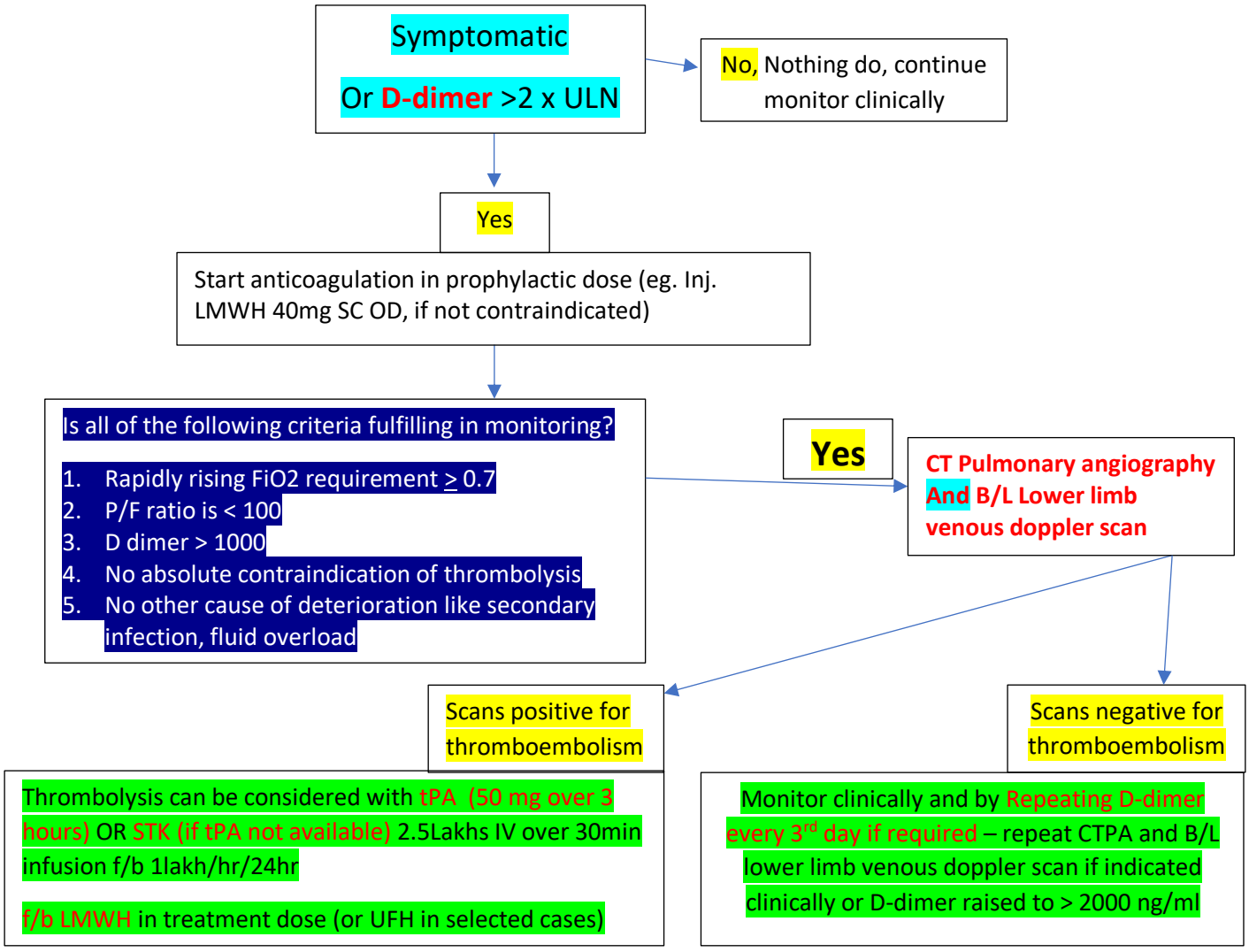
7. Awake proning: As detailed below

Thromboprophylaxis/Treatment in COVID-19 patients



- Thromboprophylaxis should be held only if platelet count is < 25 × 109/L or fibrinogen level is < 0.5 g/L
- Anticoagulants should be given for entire duration of hospitalization
- *__High-risk__ include prior VTE, recent surgery or trauma, immobilization, or obesity
- __DIC and SIC score__ to be calculated on daily basis and if >5 or >4 respectively, be vigilant for requirement of blood products transfusion.

COVID-19 is a hypercoagulable state, and the risk of thromboembolic disease is increased in critically ill (and sometimes well-appearing) individuals. Thromboembolism is typically venous but in some cases may be arterial. Bleeding is much less common but can occur, including intracerebral bleeding, highlighting the importance of documenting ischemia or thrombosis when feasible.



High Flow Nasal Cannula Oxygen Therapy (HFNC/HFNO)

Indication

1- Severe respiratory failure (respiratory rate >30 BPM with oxygen saturations 92% despite oxygen at 15 L/min via reservoir bag, and/or arterial oxygen partial pressure to fractional inspired oxygen (PaO_2/FiO_2) ratio<150)
2- In moderate respiratory failure, if SaO_2 <92%, or increase in work of breathing (WOB), despite supplemental oxygen up to 6 L/pm (alternative to NRBM).

Contra Indication

1. patients with exhaustion or confusion
2. Patients with hypercapnia (exacerbation of obstructive lung disease, cardiogenic pulmonary oedema), hemodynamic instability, multiorgan failure, or abnormal mental status should generally not receive HFNO, although emerging data suggest that HFNO may be safe in patients with mild-moderate and non-worsening hypercapnia.

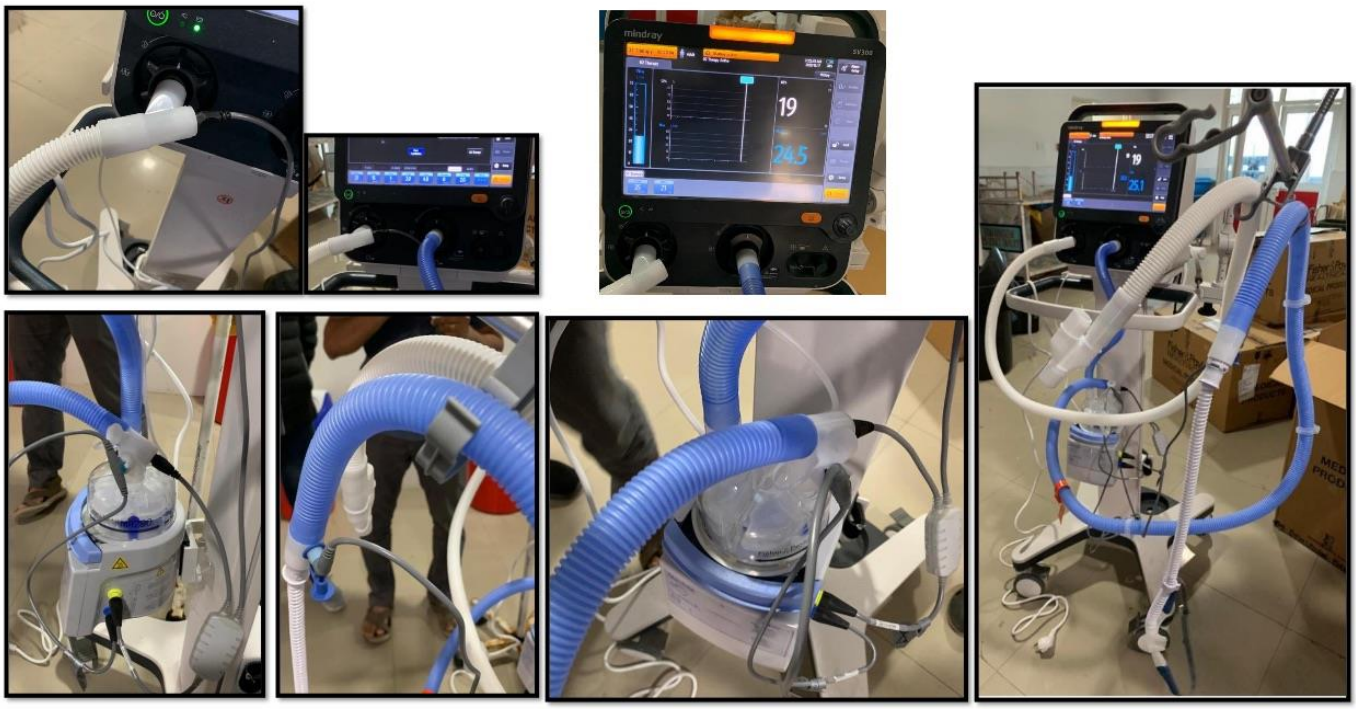
Stetting of HFNC

- For stable patients start with Flow of 20 LPM increase to 50-60 L/min with FiO_2 0.8-1.0. Thereafter the settings to be titrated aiming for an oxygen saturation (SpO_2) >92%.
- In case of sever respiratory distress start with a flow of 60lpm with FiO_2 of 1.0. Thereafter the settings to be titrated aiming for an oxygen saturation (SpO_2) >92%.

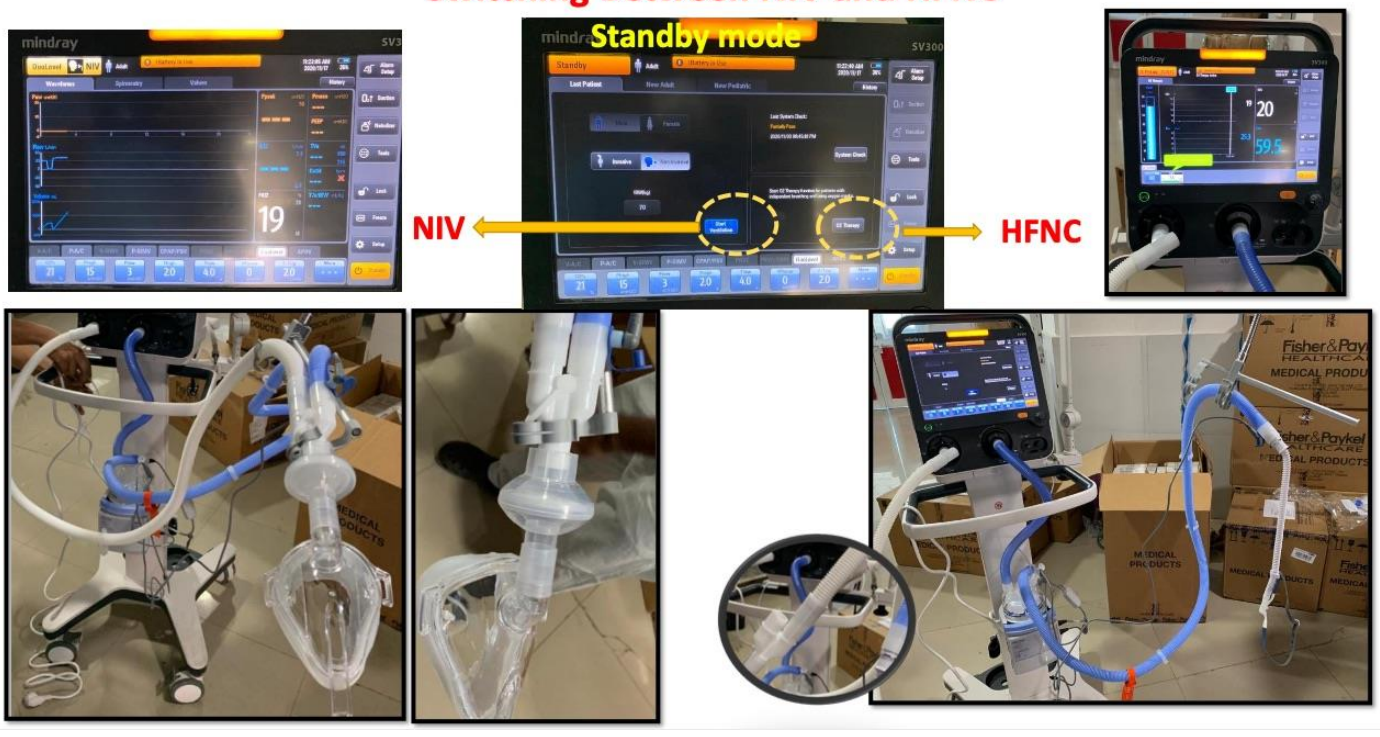
Important considerations for patients of HFNC

1. Awake prone positioning was encouraged at every clinical encounter and reinforced by nursing staff according to a shared clinical protocol.
2. Patients treated with either HFNO should be closely monitored for clinical deterioration.
3. Mechanical ventilation (Invasive/Non-Invasive) should be considered in case of non-improvement or deterioration of respiratory parameters (WOB, SpO_2, RR, etc.) after 1 hour of HFNC therapy with a flow of 60lpm & FiO_2 0.8-1.0

HFNC Connections



Switching Between NIV and HFNC



अखिल भारतीय आयुर्विज्ञान संस्थान, एम्स ऋषिकेश

All India Institute of Medical Sciences

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PROTOCOL FOR PRONE VENTILATION

I. Criteria for consideration of prone ventilation

A. Moderate to severe ARDS resulting in hypoxemic respiratory failure with P/F ratio <150 mm Hg, PEEP > 5 cm H2O, and FiO2> 0.6).
B. Low tidal volume ventilation with tidal volume <6 ml/kg of predicted body weight.
C. Best PEEP titration previously performed unable to achieve above target

II. Contraindications

A. Raised Intracranial pressure or low cerebral perfusion pressure
B. Massive hemoptysis requiring immediate intervention including angiography or placement of a double lumen ETT or bronchial blocker
C. Tracheal surgery/sternotomy during previous 15 days or presence of tracheostomy <24 hrs
D. Patients with high risk airway.
E. Serious facial trauma or facial surgery during the previous 15 days
F. Cardiac pacemaker inserted in the last 2 days
G. Unstable spine, femur, pelvic fractures, or unstable chest wall,major abdominal surgery
H. Mean arterial pressure lower than 65 mm Hg despite fluid resuscitation and vasopressors or mechanical circulatory support
I. Unstable arryhtmia or H/O CAD with risk factors for arrythmias
J. Pregnant women
K. Anterior chest tube with air leaks
L. Suspected or documented intra-abdominal hypertension
M. Use of extracorporeal membrane oxygenation (ECMO)
N. Burns on more than 20 % of the body surface including chest or abdominal surface
O. Any seizure episode

III. Methods

A. Preparation for proning

1. Nursing officer
   a. 3 to 5 nursing officers are recommended depending on the patient size and clinical context to assist in turning the patient
   b. Ensure that the gastric tube (taped around the head)and all vascular devices are secured in place
   c. Duoderms are placed for skin protection (knees, forehead, chest, iliac crests)
   d. Discontinue tube feeds at least 1 hr prior to proning and aspirate all gastric
   e. contents.
   f. Apply eye lubricant and tape eyelids shut

2. Resident doctor
   a. Ensure that the endotracheal tube is secure and that the length of the ventilator tubing is adequate during positioning
   b. It is recommended that the ventilator is set up for capnography to monitor EtCO2 during turning process and while in prone position.
   c. Empty condensate in the ventilator tubing

B. **Proceeding to the lateral position**

1. Move the patient laterally in the bed to the *opposite* side selected for the direction of rotation (*e.g.* if the patient will be turned to the right, the initial lateral movement will be to the left)
2. Attach ECG electrodes to back
3. Monitor for at least 2 minutes in the lateral position for signs of hemodynamic instability or worsening hypoxemia or a change in end-tidal CO_2.

C. **Pillow positioning**

1. Across patient's chest - allowing breasts to be supported and free from pressure
2. Across pelvis - ensuring abdomen to be free of compression
3. Under shins - preventing hyper-extension at ankle and minimising pressure exerted on patient's knees

D. **After prone positioning**

1. Re-check position of endotracheal and gastric tubes as well as vascular access devices paying special attention to ensure that no lines or tubes are kinked.
2. Re-zero hemodynamic monitoring equipment as necessary.
3. Continue ARDSnet ventilation with goal Pplat$\leq$30 cm H_2O, pH 7.20-7.45, $PaO_2 \geq$55 mm Hg
4. Measure Pplat and respiratory system compliance (Crs) 1 hr after proning and q6 hrs after that with ABG's obtained simultaneously. Lung mechanics and blood gas analysis should also be performed immediately before returning to supine position.
5. Keep minute ventilation same as in supine
6. Head should be rotated to the opposite side every 2 hrs.
7. Urine output to monitor 1 hrly.

IV. Indications to return to the supine position

A. The duration of prone therapy ordered (*e.g.* 16 hrs) has elapsed.

B. Complications occurring during a prone session

1. Airway/respiratory complications

a. Unscheduled extubation
b. Mainstem bronchus intubation or ETT obstruction
c. Significant hemoptysis
d. Worsening hypoxemia defined as SpO2<85% or PaO2<55mmHg for more than 5 minutes

2. Cardiovascular complications

a. Cardiac arrest
b. Hypotension defined as systolic blood pressure<60 mmHg for more than 5 min
c. Bradycardia defined as heart rate <40 beats/min for more than 1 minute
d. Any hemodynamically unstable tachyarrhythmia

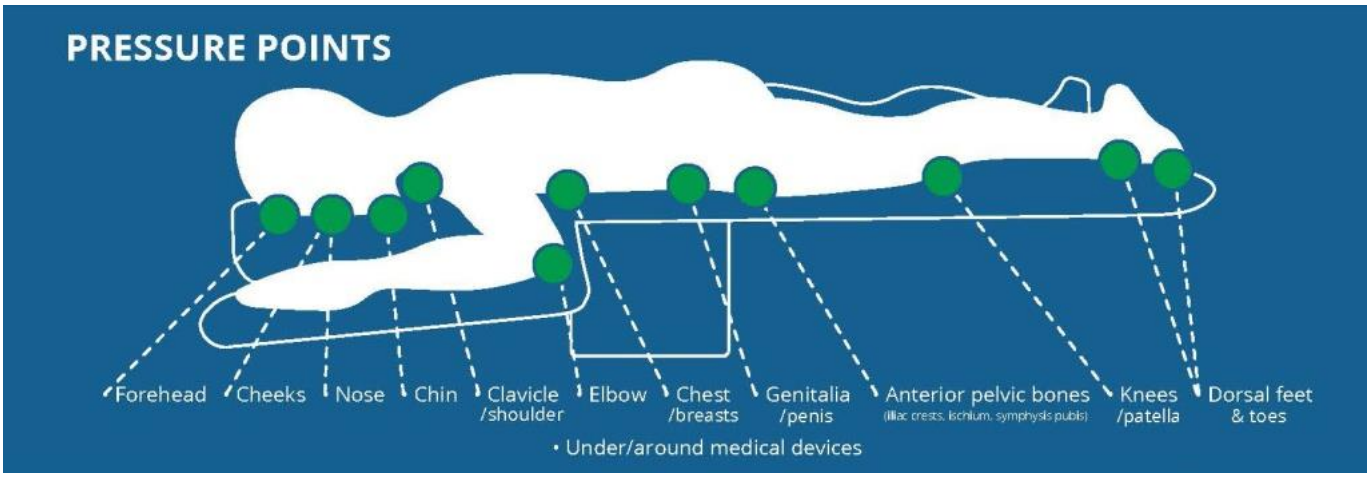
3. Any other life-threatening reason at the discretion of the medical team

V. Indications to terminate prone therapy

A. Improvement in oxygenation with $PaO_2/F_IO_2 \geq 150$ mmHg with PEEP ≤ 10 cm H_2O and $F_IO_2 \leq 0.6$ which persisted 4 hrs after the end of the prior prone session
B. PaO_2/F_IO_2 ratio deterioration by more than 20 % relative to supine after two consecutive prone sessions

VII. Other points to consider

A. Chest x-rays should be performed while in the supine position
B. Enteral nutrition may be continued in the prone position at the discretion of the team.



Flowchart for Mx of Intubation / Ventilated Patients

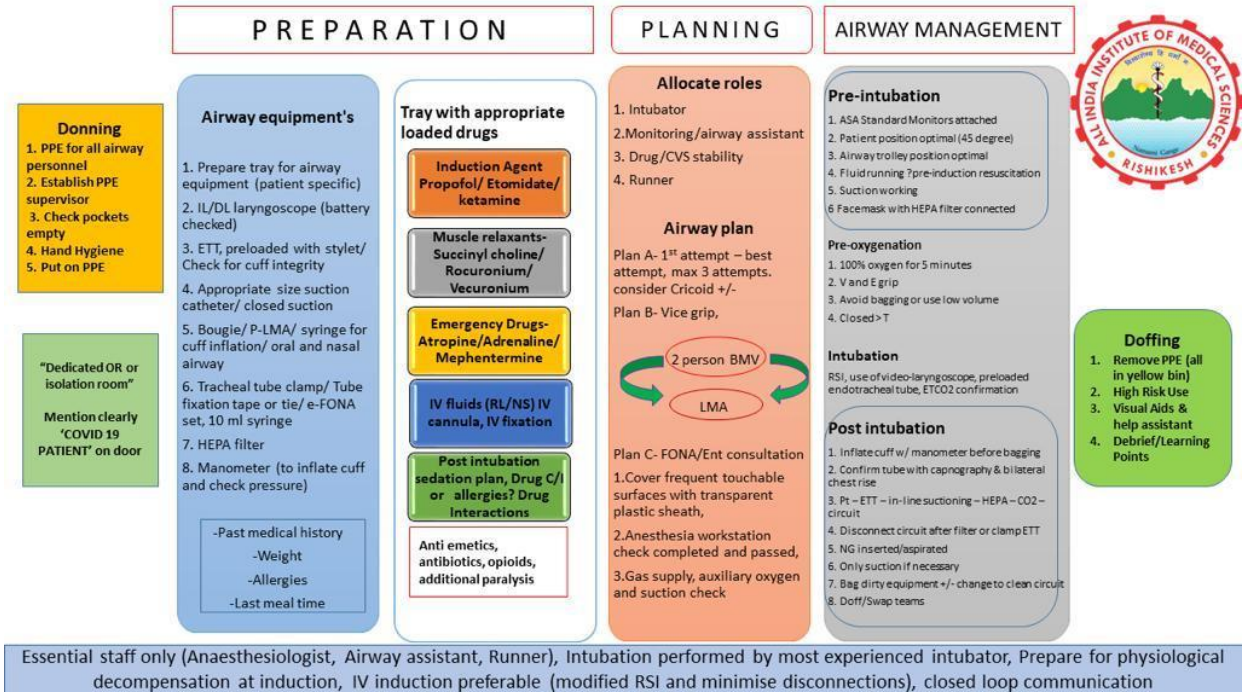
Patient in Covid-19 center requiring Elective/Emergency Intubation

→ To be intubated by concerned treating Team; Any difficulties, anesthesia team to be contacted

Ventilatory Mx in COVID (ICU)

→ To be Mx by SR (Pulmonary/Critical Care) + On duty JR/SR (COVID) + Faculty (Pulmonary/Critical Care)

1. The Anesthesia and or Pulmonary SRs/Faculty are available round the clock.
2. They shall guide areas as and when required.



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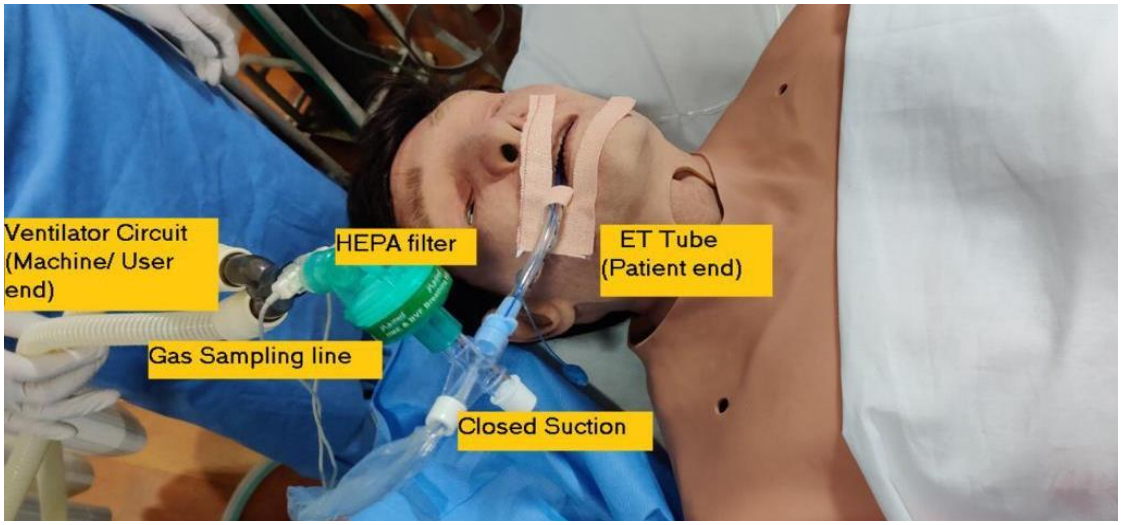
Ventilator Protocol



Indications of Invasive Ventilation after failed HFNO/NIV

1. Worsening oxygenation PaO2/FIO2 or SpO2/FiO2 <150
2. Hypercapnia/acidosis with a pH <7.3
3. High work of breathing (RR>30)
4. Altered mental status attributed to respiratory failure

Ventilatory Settings

1. Ventilation Mode – Assist Control Mode or SIMV
2. Inspiratory Time – 0.7 – 1.2 s
3. Flow rate – initially 25 lit/min (range 15-60 lit/min)
4. Tidal Volume – Tidal volume: initially 6mL/kg predicted body wt. (range 4-8)
5. PEEP – PEEP 10 cm H2O: Monitor hemodynamics with increasing PEEP
6. Respiratory rate: Initially15/min. (Range 15-35)
7. Plateau pressures of ≤30 cm H2O (reflects respiratory system compliance)
8. Peak inspiratory pressure <35 cm H2O
9. FIO2 to maintain a SpO2 of 88-98%
    a. FIO2 <0.6
    b. Try to avoid 100% oxygen, which favors de-nitrogen atelectasis
    c. Lower FIO2 of 0.7-0.9 may not drastically change oxygenation due to high level shunts
10. Sedation Analgesia
    a. Fentanyl – 100 µg bolus followed by 50µg/hr continuous infusion
    b. Midazolam – 0.05 mg/kg bolus followed by 0.02-0.06mg/kg/hr continuous infusion
11. Goals to be achieved
    a. Oxygenation - PaO2 >60 / SpO2 88-98%
    b. Ventilation -
        i. pH 7.25-7.42
        ii. PaCO2 40-65 / end-tidal carbon dioxide (ETCO2) 35-60 mm

12. Precautions:

a. Avoid disconnecting the patient from the ventilator, to avoid loss of PEEP and atelectasis

b. Reduce incidence of venous thromboembolism by

c. Pharmacological prophylaxis

i. Low molecular-weight heparin 40 mg SC/day

ii. For those with contraindications, use mechanical prophylaxis

13. Troubleshooting

a. Peak airway pressure >35 cm H2O / Plateau Pressure > 30 cm H2O

i. Evaluate for pneumothorax

ii. Consider Neuromuscular Blockade

iii. Consider diuresis

iv. Reduce Tidal Volume by 1ml/kg (not < 4ml/kg)

v. Reduce Respiratory Rate by 2-4 / min/change (Not < 8/min)

vi. Consider closed ET suctioning

b. FiO2 > 0.6 with SpO2<88%

i. Increase PEEP by 2 (max 25)

ii. Consider diuresis c. pH<7.25

iii. Increase Respiratory Rate by 2-4 / min/change (max 35) d. pH>7.42

iv. Decrease Respiratory Rate by 2-4 / min/change (min 8)

Management protocol for ARDS Patient

1. Implement mechanical ventilation using lower tidal volumes (4–8 ml/kg predicted body weight, PBW) and lower inspiratory pressures (plateau pressure)
2. Hypercapnia is permitted if meeting the pH goal of 7.30-7.45. Ventilator protocols are available.
3. The use of deep sedation may be required to control respiratory drive and achieve tidal volume targets
4. In patients with severe ARDS, prone ventilation for >12 hours per day is recommended
5. Use a conservative fluid management strategy for ARDS patients without tissue hypoperfusion.
6. In patients with moderate or severe ARDS, higher PEEP instead of lower PEEP is suggested. Tables are available to guide PEEP titration based on the FiO2 required to maintain SpO2.
7. A related intervention of recruitment manoeuvres (RMs) is delivered as episodic periods of high continuous positive airway pressure [30–40 cm H2O], progressive incremental increases in PEEP with constant driving pressure, or high driving pressure
8. In settings with access to expertise in extracorporeal life support (ECLS), consider referral of patients with refractory hypoxemia despite lung protective ventilation.
9. Avoid disconnecting the patient from the ventilator, which results in loss of PEEP and atelectasis.
10. Use in-line catheters for airway suctioning and clamp endotracheal tube when disconnection is required
11. Use of corticosteroid in selected patient is permitted only after consultation with on-call faculty

Prevention of Complications

Anticipated Outcome	Interventions
1. Reduce days of invasive mechanical ventilation	• Use weaning protocols that include daily assessment for readiness to breathe spontaneously • Minimize continuous or intermittent sedation, targeting specific titration endpoints (light sedation unless contraindicated) or with daily interruption of continuous sedative infusions
2. Reduce incidence of ventilator associated pneumonia	• Keep patient in semi-recumbent position (head of bed elevation 30-45º) • Use a closed suctioning system; periodically drain and discard condensate in tubing • Change heat moisture exchanger when it malfunctions, when soiled, or every 5–7 days
3. Reduce incidence of venous thromboembolism	• Use pharmacological prophylaxis (low molecular-weight heparin[preferred if available] or heparin 5000 units subcutaneously twice daily) in adolescents and adults without contraindications. • For those with contraindications, use mechanical prophylaxis (intermittent pneumatic compression devices)
4. Reduce incidence of catheter related bloodstream infection	• Use a checklist with completion verified by a real-time observer as reminder of each step needed for sterile insertion and as a daily reminder to remove catheter if no longer needed
5. Reduce incidence of pressure	• Turn patient every two hours
6. Reduce incidence of stress ulcers and gastrointestinal bleeding	• Give early enteral nutrition (within 24–48 hours of admission) • Administer histamine-2 receptor blockers or proton-pump inhibitors in patients with risk factors for GI bleeding.

SOP FOR EMERGENCY TRACHEOSTOMY

1. All emergency tracheostomy to be managed as COVID positive.
2. Keep the patient in separate room with negative pressure (At least exhaust fans if no negative pressure room).
3. Follow standard precautions to prevent contact with body fluids.
4. Patient should be given 100% oxygen by either a). mask b). nasal cannula (Face to be covered with 3 layered mask if nasal cannula is used). Do not remove oxygen mask if patient has already one.
5. Peripheral venous line to be secured, blood samples to be taken.
6. Intravenous hydrocortisone 1.5mg/kg to be given stat.
7. Inform ENT team regarding arrival of patient. Anaesthesiologist team to provide airway and supraglottic airway to be used.
8. Preference to be given to percutaneous tracheostomy over open tracheostomy.
9. Appropriate size cuffed non-fenestrated tracheostomy tube, tracheostomy tray be arranged in consultation with ENT team till the team arrives. If possible, disposable tracheostomy set to be used.
10. Clinical assessment of respiratory compromise to be done by physical examination, pulse oximetry. If oxygen saturation persists below 94%, repeat dose of hydrocortisone once.
11. Take precautions to exposure to aerosol.
12. High risk consent. death on table consent to be taken.

DEAD BODY MANAGEMENT

- 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.
- Disinfect bag housing dead body; instruments and devices used on the patient.
- Disinfect linen. Clean and disinfect environmental surfaces
- **All suspected or quarantined patient if died will be considered as positive patient and dead body management is same as COVID positive patient. But body will be handed over to relatives if they want after taking undertaking and doing Police information**

DISCHARGE/TRANSFER POLICY FOR COVID 19 PATIENTS

For Non-critically ill cases (mild category)

- ✓ Patient to be discharged:
  - If asymptomatic for 24hrs **AND** / OR
- ✓ No need for RT-PCR testing further
- ✓ Patient will be advised to follow home isolation to complete total **10 days** after symptom onset

For Critically ill cases (mod-severe category – all oxygen requiring patient OR Covid induced one or more organ failures)

- ✓ Patient to be discharged:
  - Clinical recovery **AND**
  - Patient tested once by RT-PCR as below:

RT-PCR test – repeat once at 20th day of symptom onset or earlier if asymptomatic

- ❖ If **negative/**positive and clinically recovered, discharge immediately
- ❖ If negative/ **positive** and clinically not recovered, transfer immediately to negative area. If patients are immunosuppressed, transfer only after one RTPCR negative.

For asymptomatic cases (incidental Covid positive during work-up for other illnesses):
See cycle threshold (CT) values of RT-PCR, if >25 in first report de-isolate immediately, either transfer to parent dept or discharge

FOLLOW-UP POLICY FOR COVID 19 PATIENTS

- ❖ No RT-PCR testing in follow-up if clinically not indicated
- ❖ While discharging from COVID area, please advise to follow-up in **Covid clinic** (Wednesday, 10am-2pm) any doubt contact OPD staff, **7217014335**) **or Telemedicine OPD**
- ❖ HCWs/any community members are allowed for duty joining **after 17days of total isolation** in mild-moderate Covid from day of symptom onset OR from day of first positive sampling in asymptomatics irrespective of RT-PCR positivity status
- ❖ In severe category **after discharge**, they are allowed for duty joining after necessary bed rest as advised during discharge and if clinically fit to join the work through **Covid clinic/non-Covid OPD**

ACKNOWLEDGMENT

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5. Department of Pulmonary and critical care, AIIMS Rishikesh
6. Department of Anaesthesia and critical care medicine, AIIMS Rishikesh
7. Department of Radiology, AIIMS Rishikesh
8. Department of Lab Medicine, AIIMS Rishikesh
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