Dr. RATHAN KELKAR IAS
EXECUTIVE DIRECTOR
STATE HEALTH AGENCY (SHA)
Health & Family Welfare Department
Government of Kerala

No. 96/2020/HNQA/SHA **13.07.2020**

To

All District Collectors / All District Medical Officers / All District Program Managers NHM
All District Project Coordinators - SHA
Medical Superintendents of AB PM-JAY-KASP empanelled Private Hospitals
IMA/KPHA/CHAI/QPMPA/KPMCA/IDA

Sir,

Sub:- Guidelines for partnership with private sector in implementation of the COVID-19 Treatment in private health care institutions under KASP and for the Government referred patients in other private health care Institutions

Ref:- 1. Circular No.34/2019/SHA/KASP dated 04.05.2020
2. G.O.(Rt).No.1246/2020/H&FWD dated 06.07.2020

Government, vide order read above has issued orders fixing the rates for COVID-19 treatment in Private healthcare institutions under the Karunya Arogya Suraksha Padhathi (KASP) and for the Government referred patients treatment in other Private Health Care Institutions. Further, Government has accorded sanction to the State Health agency to revise the circular 1st cited regarding the rates with private hospitals and also to finalise the implementation guidelines in consultation with the private sector hospitals.

In these circumstances, order issuing guidelines, as directed by Government in the order 2nd read above, is forwarded for information and necessary action.

Yours faithfully,

Executive Director (SHA)

13/7/2020

Proceedings of the Executive Director, State Health Agency, Thiruvananthapuram

Present : Dr.Rathan Kelkar, IAS

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In these circumstances, guidelines, as directed by Government in the order 2nd read above, is appended to this order.

Executive Director,
State Health Agency
13/7/2020.

To

The Principal Secretary to Government, Health & Family Welfare Department,
Government of Kerala (with C/L)
District Collector, All Districts
District Medical Officers, All Districts
District Program Managers - NHM, All Districts
District Project Coordinators - SHA, All Districts
Medical Superintendents of AB PM-JAY-KASP empanelled Private Hospitals
IMA/KPHA/CHAI/QPMPA/KPMCA/IDA

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Manager (Hospital Network & Quality Assurance), SHA
Office copy / spare

Guidelines for partnership with Private Sector in implementation of the COVID-19 treatment in private health care institutions under KASP and for the Government referred patients in other private health care Institutions

Ref: G.O.(Rt)No.1246/2020/H&FWD dt.06/07/2020

1.Background

WHO has declared COVID 19 as a pandemic and the world is trying to control the spread by effectively utilizing all its resources. Kerala State has strengthened the surveillance and control measures against the disease with the following broad objectives: Least morbidity, No Mortality, No community spread. Considering the possibility of an escalation in the number of COVID cases in Kerala State it is required to mobilize all the available resources to provide the best care to the patients. The vision of the Government of Kerala is that the citizens of Kerala should receive the highest standards of care and support from healthcare providers of their choice without catastrophic expenditure. There is in place an optimum utilization plan for the Government health care facilities to manage the cases. The Management of the pandemic and ensuring a full delivery of health care will require integration of all resources available in the State. The facilities of the Private health care Institutions will also be required as the number of cases increases to overcome the demand-supply gaps. Hence various discussions were held with representatives from the private sector health care providers. These discussions provided the views of the private sector on how to utilize the infrastructure and expected package rates for the same along with a framework that strongly supports and helps to tide over the COVID 19 crisis. The Government has agreed to the package rates that was arrived at and authorized the State Health Agency to issue the guidelines for engagement.

2 Preparedness at every private hospital

There is a possibility that people with COVID symptoms/positive cases could walk-in any health facility in Kerala for consultations, therefore all health care institutions need to be prepared to handle such cases. The objective should be to manage the cases, ensure that no health care staffs, any other patients,

bystanders in the hospital area affected or become primary contact due to exposure inside a hospital.

The following measures are recommended to be implemented in all private hospitals.

2.1 Triage & Separate Track:

- A good triage system which could separate anybody presenting with COVID like symptoms or COVID suspects or People with high risk
- People with travel history in the last 14 days, People with any history of contact with a confirmed/suspected case within the last 14 days, anybody with fever or respiratory symptoms or diarrhea need to be identified at triage station. Those people move through a separate track in the hospital without mixing with others. People even with mild symptoms should go through the separate 'respiratory track'.
- Triage should be set at the first point of entry into the hospital
- Facilities for social distancing should be available at the triage area
- There should be a system to ensure that at least 1-meter distance between staff and patients/ bystanders at triage and between patients.
- There should preferably be a physical barrier (glass/partition) at triage to limit close contact between staff and patients
- Visual alerts need to be placed at triage area for patients to self-identify themselves
- All patients, bystanders to sanitize their hands properly and wear masks before entering into the hospital
- The system for triage should be there at the emergency department also.
- Waiting time of patients with 'respiratory symptoms' to be minimized by fast-tracking them everywhere including consultation, lab, and pharmacy
- The patient waiting area and examination room in 'respiratory track' should be well ventilated [at least 10% of floor areas on each side with opening]
- After detailed history and examination, people in 'respiratory track' will be classified as 'COVID suspects' or 'Non-COVID suspects'

- There should be a separate well-ventilated area/ room identified for suspected COVID patients to stay while waiting for further procedures/ tests/referrals.
- There should be a system to ensure that even materials from the 'Respiratory track' are not reaching the 'routine track' without proper disinfection (eg oxygen cylinder, BP apparatus)
- There should also be a mechanism to ensure that staff working in 'respiratory track' are separated from 'routine track' and are not intermingling even for changing uniforms, signing attendance, lunch, etc. Advisory issued by the Department of Health and Family Welfare regarding HCW management in a hospital dated 20th June may be referred to as https://dhs.kerala.gov.in/wp-content/uploads/ 2020/06/ HCW-Management-guidelines-20.06.20.pdf.
- All health care workers working in 'respiratory track' to wear a face mask and eye protection (face shield)
- There should be identified space for admitting COVID suspects preferably in a well-ventilated bath attached room.
- There should be a system to do investigations (eg x-ray) of respiratory symptomatic without coming in contact with others. The investigation should be
- There should be a vehicle arrangement for transporting COVID patients/ suspects to transport to the nearest COVID hospital without coming in contact with anybody. No transfer should be done without proper co-ordination with the referral hospital.

2.2 General Measures

- All visitors to the hospital to be restricted by policy.
- Social distancing to be promoted everywhere inside the hospital - in general patient waiting area, MRD, pharmacy, laboratory with reminders, visual alerts, and specific markings.
- All patients, bystanders sanitize their hands properly and wear masks before entering into the hospital, the same to be followed in IP facilities.

- There should preferably be a physical barrier (glass/partition) at reception/pharmacy to limit close contact between staff and patients
- Full PPE and a special area for performing aerosol-generating procedures
- Nebulizers may be replaced with inhalers to the possible extent
- Every health facility should have a system for collecting specimens and send for COVID testing
- All staff including security staff to be trained in the infection control protocol
- An Infection Control committee to monitor and ensure adherence to infection control practices
- There should be a facility to screen all health staff while entering a hospital. Any health staff with symptoms (even mild) should not work
- Adequate facility for hand washing to be ensured for staff, patients and bystanders
- The social distancing of staff to be promoted inside the hospital. There should not be a close physical mingling of staff within hospitals or hostels.
- There should be a system to ensure that all healthcare staff adheres to all additional precautions and standard precautions while being in the hospital.
- There should be a mechanism to disinfect the frequently touched surfaces (eg doorknobs, handrails, toys, waiting area chairs) regularly with 1% sodium hypochlorite solution.

Promote tele-consultations for minimizing patient visits to hospitals. Increase the duration of dispensing medicines (e.g. 2 months medicines may be provided to well-controlled diabetes patients instead of 1 month, tele-consultation may be offered at the end of the first month). Promote hospital visits through an appointment with history wherever possible.

2.3 COVID-19 Hospitals

The hospitals can set up COVID-19 treatment facilities for management of positive cases after ensuring that these institutions have the required

infrastructure and Human resource. General checklist for assessing the eligibility of hospitals to set up COVID Hospital is given below:

2.3.1 Checklist for Hospitals to assess eligibility for setting up COVID Hospital

Entire hospital or part of the hospital could be converted to COVID hospital

Minimum eligibility criteria for a COVID hospital is as follows

Checklist	Remarks
The Hospital should have a dedicated building or a block for exclusively managing COVID-19 to ensure that there is no mixing of routine patients with COVID patients.	
There shall be at least one entry and a separate exit for the entire building/block	
There shall be a facility for at least two ways inside the hospital/block throughout – one for 'clean' and one for 'dirty' for proper infection control systems.	
Number of COVID patients that could be catered at a time shall be minimum 20	
At least 30% of the total capacity for COVID care to have individual rooms with attached bathrooms for COVID suspects	
At least 30% of dedicated COVID beds to have facilities for centralized oxygen	
At least 10% of dedicated COVID beds to have Critical Care facilities	

Availability of minimum two general wards for cohorting of positive patients	
Ability to offer primary investigations within the COVID block without transferring patients to the general block	
The hospital should have a dedicated Infection Control Management team	
Ability to spare dedicated HR (Doctors/Nurse (1:10 beds in general and 1:3 for Critical Care area/other staff) for COVID management	
Availability of dedicated Laundry management system	
Availability of dedicated Bio-Medical Waste management system	
Availability of Doctors trained in Critical Care & basic specialties	

**Refer annexure 3 & 4*

3. How to Convert existing facilities into COVID Hospitals - Partly/ Fully

Department of Health and Family Welfare has published a document on converting the existing facility to COVID hospital. Relevant portions of the document applicable to private facilities are as follows.

3.1 COVID Cell

The success of any large endeavor is planning and the constitution of a core and cohesive team. The institution should constitute a dedicated COVID cell to plan, implement, and deliver outcomes. The COVID cell should be the hub of all the activities in the institution and should be led by persons with decision making and implementing capacities (Superintendents, Directors etc.). Identify and entrust a nodal officer for each domain like Infrastructure, Processes, Inventory

Management, Human Resources Management, Communication plans (including messages to the public, Signage etc.), Training and sensitization to hospital staff, etc.

Identify a Core team in your Hospital with staff from different Categories (limiting to 4-5 members) for plan preparation. Consider brainstorming sessions with people and experts around you. The COVID cell of the institution should be empowered to constitute the core team for the planning and implementation of the process of converting the hospital into a COVID-19 treatment center. Get inputs from peers, colleagues from other hospitals, and experts from Medical Colleges. Continuously take efforts to improvise the plans.

3.1.1 Resource Mapping

Resource Mapping is the process of identification and listing of all available resources in the institution like infrastructure, human resources, facilities, drugs, supplies, etc. This will help in efficient planning and execution.

Identify all buildings, Number it serially and draw a schematic diagram with or without a scale. (A scale of 1:200 meters may be adopted)

The hospital can be divided into zones as shown below for efficient patient management and infection control.

Try to have a Floor plan by identifying all utility areas, corridors, stairs, etc, and mark the same in the floor plan.

3.2 Requirements to convert a Hospital into a COVID Hospital

Designate/Propose for each area in your Hospital into Entry/Exit, Reception, Triage area, OPDs, Wards, Emergency areas, special care zones, etc. A plan for patient flow in case of regular OPD, Triage and Emergency, etc. Is to be drawn. A floor plan and flow of patients in different scenarios may be displayed in the patient entry zone (reception, Triage, etc.)

1. Identify all possible areas in the Hospital which can be converted into ICU. Existing ICU, HDUs, OT (except emergency OT and obstetric OT, if available). Identify wards which can be converted into ICU.

2. Establish medical gas lines (Oxygen ports- 2 nos, suction port and 1 compressed air minimum in each patient care area for those in need of ventilators). Keep stock of Oxygen three times the requirement for the contingency. Establish an uninterrupted O2 supply.
3. Establish uninterrupted power supply
4. Monitor per bed with ECG, SpO2, NIBP (mobilized from OT, Private hospitals)
5. Syringe pumps- 3 per bed
6. Blood gas with a point of care facility
7. Portable X-Ray and ECG machine
8. Ambu bags at each bed
9. Glucometer 2 per patient care area
10. Pulse oximeter (Finger Probe) 2 per patient care area
11. Infrared Digital thermometers- 1 per patient care area
12. Beds that can be adjusted from the fowler's position & air bed.
13. Bedside locker
14. Bins for waste segregation
15. 100- 125 sq. feet per patient care area.
16. Smart phones with Whatsapp video calling facility in all ICUs and patient care areas.
17. Suction apparatus one for 2 beds where central suction is not available

3.2.1PLANNING AND MANAGEMENT OF HUMAN RESOURCES (HR):

List out the HR available in the Hospital with their Name and Designation under different cadres. Keep their contact details ready.

1. Categorize required human resources into various categories. (Doctors, Pharmacists, Security, Nurses, Laundry, Housekeeping, Biomedical engineering, Pharmacist, Lab, ICU technicians, X-ray technicians .....). Physician-patient ratio 1:12 (ICU), Nurse patient ratio 1: 3 for ventilated patients, for HDU nurse to patient ratio 1:6, and for the ward patients nurse ratio 1: 10 Mobilize human resource and equipment from all private

institutions in the third phase or earlier based on the requirement. (only emergency cases in private institutions).

2. Group each category of the workforce into three groups; group in action (duty group), one group reserve (Standby), and one in the non-COVID area depending upon the surge capacity of the institution. These groups can be rotated as per the advisory https://dhs.kerala.gov.in/wp-content/uploads/2020/06/HCW-Management-guidelines-20.06.20.pdf

   Similarly, nonclinical and para clinical staff can be engaged in activities like training, triage, communications, data management, logistics, etc. (For practical purposes it is proposed to have two groups one on duty/shift as planned and the second group as a reserve so that in case of sickness or absenteeism, we will be able to fill the gap).

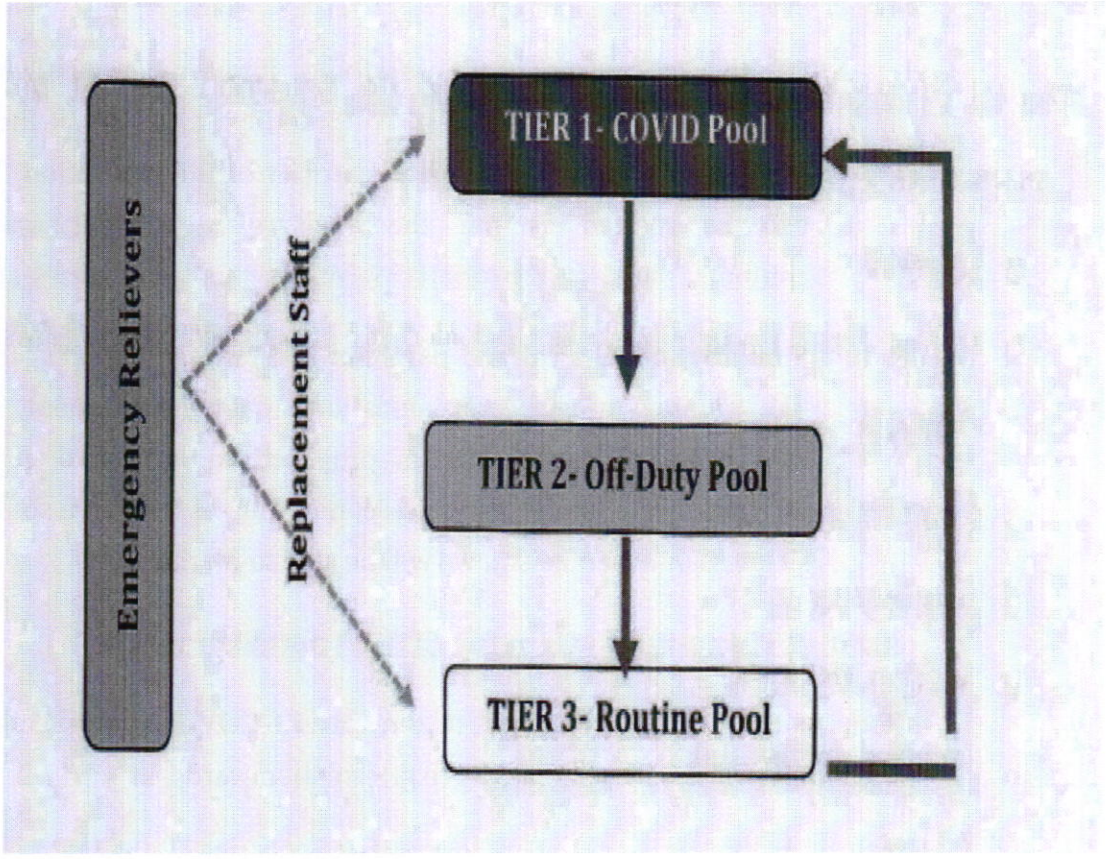
3.2.1. A Three-tier system for COVID management

Tier 1: Staff directly involved in the care of COVID-19 suspected/confirmed cases and maintaining the facility (e.g.) isolation ward

Tier 2: Backup team for support of Isolation facilities

Tier 3: Staff involved in the care of other patients

Duty Rotation



*Institutional specific rearrangements of duty shall be made by the Superintendent as and when the need arises.

3. Plan to monitor staff absenteeism and sickness every shift and pull from the reserve group.

4. Plan the minimum needs of the staff to ensure operational sufficiency and to keep staff stability. (food, stay, transport, psychological support, medical care if he/she becomes sick, family support, child care). The designated staff (documented appropriately) looking after Human Resource in each clinical area should coordinate this.
5. Plan shift rotation for self-care
6. Prepare a job card for everyone (to whom to report and what to do)
7. Training as per job card.

3.2.2 PLANNING AND MANAGEMENT OF HOSPITAL INFECTION CONTROL

The Hospital Infection Control Committee has an active role in the planning, implementation, and execution of the COVID Hospital plan. Infection control should be given the utmost priority in the whole planning and implementation. Transmission based precautions are to be applied in the settings. Training for all medical and non-medical staff should be provided on COVID as well as on infection control

3.2.3 PLANNING AND MANAGEMENT OF EQUIPMENT AND CONSUMABLES:

Inventory of all the equipment and consumables related to COVID treatment is to be prepared by the COVID cell. Daily update of the inventory should be done. Utilization rates by various isolation wards / ICU should be assessed.

A model recommended inventory recommended by the WHO is given below.

WHO Code	WHO Description	Qtity
YMEQGLASWS1--A1	GOGGLES PROTECTIVE, wraparound, soft frame, indirect vent.	300
PEXTALCO1G---A1	ALCOHOL-BASED HAND RUB, gel, 100mL, bottle	60
EWASBAGBR007-A1	BAG BIOHAZARD, REFUSE, AUTOCLAVABLE, 30x50cm, yellow	100
EWASYCHN5G1--A1	CHLORINE NaDCC, 45-55%, gran., 1kg, pot	8
CPPEGOWI3L---A1	GOWN, AAMI level 3, non sterile, disp., size L	540
CPPEGOWI3M---A1	GOWN, AAMI level 3, non sterile, disp., size M	630
CPPEGOWI3XL--A1	GOWN, AAMI level 3, non sterile, disp., size XL	450
CPPEGOWI3XXL-A1	GOWN, AAMI level 3, non sterile, disp., size XXL	180
CMSUGLEN1L1--A1	GLOVE EXAMINATION, nitrile, pf, size L	2200
CMSUGLEN1M1--A1	GLOVE EXAMINATION, nitrile, pf, size M	4200
CMSUGLEN1S1--A1	GLOVE EXAMINATION, nitrile, pf, size S	4200
CMSUGLEN1XL--A1	GLOVE EXAMINATION, nitrile, pf, size XL	1600
CPPEMASS2RL--A1	MASK SURGICAL, type IIR, level 2, s.u, non sterile, earloop, size L	1100
CPPEMASS2RM--A1	MASK SURGICAL, type IIR, level 2, s.u, non sterile, earloop, size M	1100
CPPEMASS2RS--A1	MASK SURGICAL, type IIR, level 2, s.u, non sterile, earloop, size S	1100
CPPEMASPF20S-A1	RESPIRATOR, mask, FFP2/N95, type IIR, s.u., unvalved, noseclip	6000
CPPEFSHIED02-A1	FACE SHIELD, clear plastic, disp.	2700
CMSUTHERI01--A1	THERMOMETER, INFRARED, no contact, handheld	30
CINSCONTC51--A1	SAFETY BOX, needles/syringes, 5l, cardboard for incineration	40
OPACUN62BS1--A1	BOX, triple packaging, biological substance UN3373 +pouch	100
OPACUN62IS1--A1	BOX, triple packaging, infectious substance UN2814	20
CMSUBAGB4A04-A1	BAG BODY, 8 handles, U-shaped zip, white, 400 microns, adult, 230x100cm	20

WHO's list of personal protective equipment module for SARI treatment center based on 100 patients

3.2.3.A. Institutional SOP for the following activities should be developed:

A. Plan how to triage all patients with epidemic symptoms without coming in contact with the general pool of patients. Establish a triage criterion of all patients with respiratory symptoms that can be utilized. Find triage places in each center, train staff, make sure 24x 7 days availability, and practice safe infection control protocols.
B. Those who need a resuscitation need to be transported to a resuscitation area, intubated with minimal droplet expulsion, and then shift or admit. For this, we need an Anesthesiologist / Intensivist/ACLS trained person. We need a dedicated resuscitation area. Plan how to resuscitate safely. Need to develop an SOP for safe intubation. (Video laryngoscopy, covering Ambu with plastic cover with suction, clamping while putting ET tube, Intubation after full muscle relaxation, Viral Bacterial filter with HME)
C. Plan how to reduce infection contracting to the workforce (HME HEPA filter at exhalation limb, centralized monitoring system (stasis system on bulk), keeping the breathing circuit as intact, avoiding unnecessary movement, strict disinfecting policy, closed suction ....)
D. Plan how to transport patients safely outside the COVID area in case of need. (Red channel: overall avoid all types of transport/avoid CT like investigation, more point of care tests).
E. Infection control practice /PPE usage training and retraining for all relevant workforces.
F. Clinical Management Protocols, Discharge Protocols as per the latest State Government Guidelines
G. Plan staff surveillance based on respiratory symptoms before every shift and quarantine if needed.

3.2.4 SURGE CAPACITY AND COHORTING APPROACH

Surge capacity - Surge capacity is the ability of a health system to meet the increased demand for health services. Planning for surge capacity should allow for progressive scale-up of activities over several stages, with clearly defined activation thresholds for each stage.

Cohorting approach- Patient cohorting means placing patients infected with the same laboratory-confirmed cases in a designated ward or area. Cohorting may be done as per their test positivity and gender status.

Cohorting of patients

Reference: SARI treatment center. Practical manual to set up and manage a SARI treatment center and a SARI screening facility in health care facilities, WHO March 2020.

3.2.5 PLANNING AND MANAGEMENT OF HOUSEKEEPING.

1. Calculate and identify manpower required for all shifts x 24-hour x 7 days in each center.
2. Disinfection SOP.
3. Training to the staff on SOP.
4. PPE use and hospital infection control practice training.
5. Daily screening of staff for sickness.
6. Plan for procurement, acquisition, storage, stock, and stockpile monitoring of disinfectants. Identify multiple vendors in advance.
7. Estimating the daily consumption of disinfectants.
8. Plan for updating daily inventory.
9. Plan for estimating future requirements based on consumption and inventory check.
10. Decide each role by Job card.
11. Cleaning strategy for environmental surfaces, moving systematically around the patient care area. Courtesy: WHO.

3.2.6 PLANNING AND MANAGEMENT OF HOSPITAL LABORATORY SERVICES

1. Manpower estimation 24 x 7 days.
2. Plan only the essential test to be done minimum for COVID patients, calculate the surge capacity of the lab in each hospital based on the daily essential tests, and decide the turnaround time.
3. Develop an SOP for safe handling of the biological fluid and provide training for safe disposal of biological fluids.
4. Infection control practice /PPE usage training of the staff.
5. Housekeeping /cleaning activities of the unit, develop an SOP.
6. Plan for procurement, acquisition, storage, stock, and stockpile monitoring of reagents. Identify multiple vendors in advance.
7. Plan for estimating the daily consumption of reagents.
8. Plan for updating daily inventory.
9. Plan for estimating future requirements based on consumption and inventory check.
11. Coordinating with the procurement system to make sure of a constant supply of reagents.
12. Job card for each staff.
13. Staff screening for sickness.
15. Plan for safe transportation of specimens.
16. Train the staff on Hospital Infection control and PPE.
17. Check how early and how to receive test results from the outsourced lab
18. Develop an internal quality check mechanism without interrupting the lab work.

3.2.7 PLANNING AND MANAGEMENT OF LOGISTICS

1. Arrange a centralized procurement system for each institution for procurement, transport, warehousing, stock monitoring, tracking, and reporting of essential equipment.
2. Prepare a list of essential equipment, consumables, and medications in consultation with end-users for each district (Includes ventilator with

inbuilt compressors, NIV with hood (NOT mask), monitors, syringe pumps, infusion pumps, blood gas machines) and list out consumables.

3. The list of essential medicines a list of pre-defined essential medications required for each hospital
4. Plan how to get feedback from the end user's consumption and inventory and plan procurement so that there won't be any interruption in the supply chain.

3.2.8 PLANNING AND MANAGEMENT OF SECURITY SERVICES

1. Make a list of security staff available in the hospital.
2. Identifying possible major security issues that may come up when dedicated COVID areas are identified.
3. Provide training on Infection control practices and PPE.
4. Provide training on how to restrict and manage traffic to restricted areas.
5. Provide training on how to ensure that there is no overcrowding.
6. Plan how to connect with Governmental organizations like police, ambulance services, fire, etc. whenever needed. The list of contact persons and phone numbers may be provided at designated places.

3.2.9 PLANNING AND MANAGEMENT OF LAUNDRY

1. Estimate linen required to run a given bed.
2. Plan and make an SOP for the laundry department. (methods of sorting, disinfection, washing, extraction, drying, ironing, folding, mending and delivery). Use power laundry if available
3. Maintain stock and transfer register.
4. Train with the SOP.
5. Plan additional infrastructure to keep an uninterrupted supply of linen in case of a surge of patients.
6. Issue Job cards with the job description to the workers in the laundry department.

3.2.10 PLANNING AND MANAGEMENT OF BIO-MEDICAL WASTE MANAGEMENT

The advisory for management of Bio-Medical waste from patients/suspects of COVID-19 is given in the link below.http://dhs.kerala.gov.in/wp-content/uploads/2020/03/bwm_08022020.pdf

1. Plan segregation of contaminated sharps, syringes, blood-contaminated materials safely as per existing biomedical rules.
2. Plan for the safe transport of Bio-Medical waste.
3. Develop an SOP for the institution and provide training.

3.2.11 PLANNING AND MANAGEMENT OF DIETARY SERVICES

1. Find human resources for dietary preparation and supply for the institution.
2. Preparing a list of raw materials of food for the workforce and patient as per various phases.
3. Develop a system to monitor procurement, storage, stock, and issue of dietary items.
4. Estimating the daily consumption of food.
5. Plan for updating daily inventory.
6. Plan for estimating future requirements based on consumption and inventory check.
7. Ensure food safety and hygiene

3.2.12 PLANNING AND MANAGEMENT OF BIOMEDICAL ENGINEERING SERVICES.

1. Identify the biomedical human resource available.
2. Estimate the need for equipment. (Ventilators, Syringe pumps, NIV, Crash carts, airway requirements, ventilator accessories) for each phase.
3. Plan how to ensure continuous power source and alternate power sources.
4. Ensure continuous O2 supply. (Medical gas supply)
5. Ensure the working status of equipment daily.

6. Identify serious maintenance problems and rank them in order of maintenance.
7. Plan for corrective and preventive maintenance.
8. Describe how to provide external technical service if necessary, in case of in vivo maintenance service not competent.
9. Infection prevention practice/PPE training.
10. Plan for staff screening.
11. Job card with the job description.

3.2.13 PLANNING AND MANAGEMENT OF COMMUNICATION.

1. Make a system in each center to communicate with the workforce, patients, family, other healthcare institutions, and Government as per the need and situation.
2. Make a system on how to collect this information from the treating group and patient care areas.
3. Dedicated communications may be established especially with the institutional COVID cell.
4. Assign roles and responsibilities and prepare a Job card.

3.2.14 PLANNING AND MANAGEMENT OF MORTUARY SERVICES

It is recommended to use a combination of standard, contact, and droplet precautions to protect health-care workers managing the body of a person with suspected or confirmed COVID-19.

1. Ensure dignity to the dead body at all times.
2. Decide manpower for 24x7 coverage of services.
3. Infection control and PPE training for the staff while receiving, storing and transfer of bodies
4. Plan and train how bodies are to be packed and disposed of as per national guidelines.
5. Plan for the transportation of bodies.
6. Plan how family members are catered

7. Plan disinfection practice of the vehicle after the body transportation, advisory regarding this matter has been published onwww.dhs.kerala.gov.in
8. Plan what infection control practices to be followed by the driver
9. Plan how to do daily surveillance of mortuary staff
10. Plan housekeeping practice of mortuary

3.2.15 MONITORING OF ACTIVITIES AND DAILY REVIEW

All the activities should be monitored. A few of the indicators for monitoring are given below:

- No. of patients attending COVID OP
- No. of samples taken
- No. of Hospitalizations
- No. sent on home isolation
- No. of COVID19 positives at present
- No. of discharges
- No. of HRs on each shift
- Infection control practices
- Stock position of PPE kits and other consumables
- The onset of symptoms among health care workers etc.
- Issues faced by each department
- Patient complaints/suggestions

A daily review of the day's activities should be reviewed by the COVID cell in the institution. A fixed time may be used so that all the members can come prepared for the daily review

3.2.16 MANAGEMENT OF NON-COVID PATIENTS CURRENTLY ADMITTED IN THE HOSPITAL.

All the emergencies shall be handled as it is being done now if the patients are coming to the existing facilities because people know the address and for convenience, they should be attended to, if we refer them to some other

Hospitals, the time lost to travel to another hospital will be detrimental to the life of the patient.

All super specialty Hospitals will continue to function as they have been functioning during the normal time. They should also provide services to emergency cases.

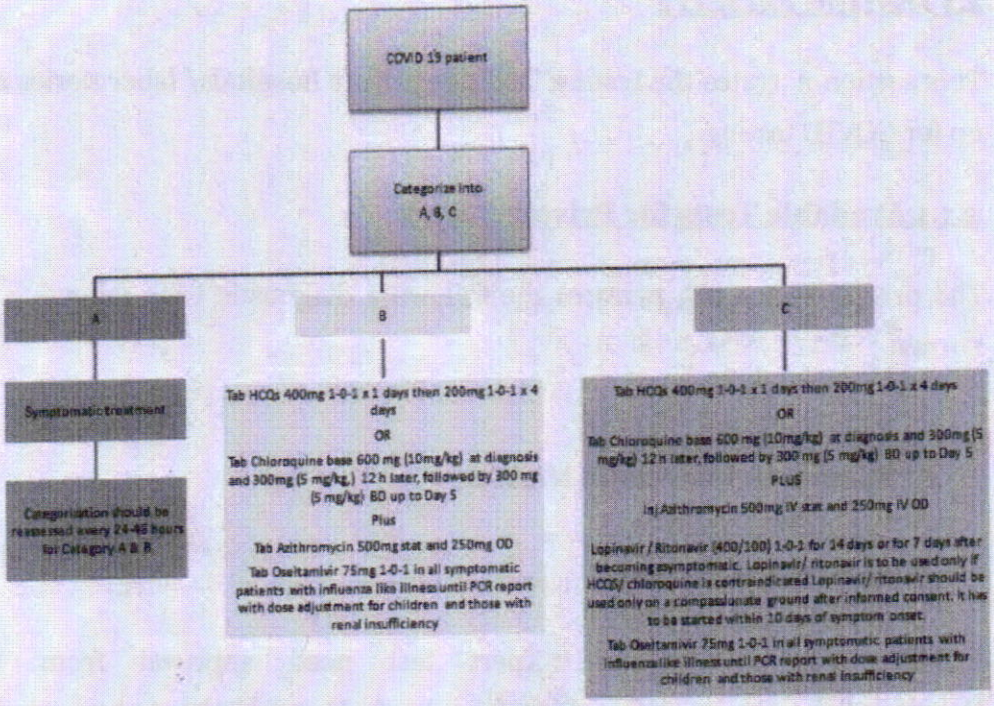
All COVID positive patients such as delivery etc. to be done as per the protocol and any capacity building requirements will be assisted by the district level committees.

3.2.17PLANNING AND MANAGEMENT OF CONCURRENT EMERGENCIES

1. Decide what emergencies can be catered to in the hospital during the pandemic and list them.
2. Decide what the workforce is needed to cover the concurrent emergencies and plan manpower to handle concurrent emergencies.
3. Plan how to cater to all these emergencies
4. Plan how to avoid mixing up of pandemic management with concurrent emergencies.
5. A staff surveillance mechanism needs to be planned.
6. Credentialing, privileging and training of extra manpower
7. Job sheet for each category of the workforce.

4. Management of COVID cases

For management of COVID cases an institutional level medical board should be established at every private hospital and if in case of any query or need any clarification regarding management then those may be escalated to the district medical board or to the state medical board. The management of COVID 19 is regulated by the treatment guidelines of the government



A	Mild sore throat / cough / rhinitis /diarrhea
B	Fever and/or severe sore throat / cough OR Category-A plus two or more of the following Lung/ heart / liver/ kidney / neurological disease/ Hypertension/haematological disorders/ uncontrolled diabetes/ cancer /HIV- AIDS On long term steroids Pregnant lady Age –more than 60 years. OR Cardiovascular disease
C	Breathlessness, chest pain, drowsiness, fall in blood pressure, haemoptysis, cyanosis [red flag signs] Children with ILI (influenza like illness) with ***red flag signs*** (Somnolence, high/persistent fever, inability to feed well, convulsions, dyspnoea /respiratory distress, etc). Worsening of underlying chronic conditions.

Contraindications to chloroquine /HCQS

- QTc > 500msec
- Porphyria
- Myasthenia gravis
- Retinal pathology
- Epilepsy

Pregnancy is NOT a contraindication
If Baseline QT prolongation – Monitor ECG

For Protease inhibitors
Assess for drug-drug interactions (including with calcineurin inhibitors) before starting.
Gastrointestinal intolerance may be seen
Monitor liver function tests while on therapy.
Discontinue these agents upon discharge regardless of duration, unless previously used as maintenance medications for another indication

If CAT C progresses to ARDS/MODS on HCQ/Chloroquine plus Azithromycin, addition of lopinavir / ritonavir may be considered

In Children: HCQs 6.5mg/kg/ dose BD, day 1 followed by 3.25mg/kg/dose PO BD X 4 days
Azithromycin: 10mg/kg (max 500mg) day 1, Followed by 5mg/kg/day on days 2 to 5.
Lopinavir/Ritonavir (based on lopinavir component): 14 days to 6months : 16mg/kg PO BD, < 15kg : 12 mg/kg PO, 15-25 kg: 200 mg-50 mg PO BD, 26-35 kg: 300 mg-75 mg PO BD, >35 kg: 400 mg-100 mg PO BD

4.1 TESTING FACILITY

This section narrates the testing facilities private hospitals/ laboratories can set up for COVID testing.

4.1.1 Available Tests for Private Sector

The private sector can perform the following diagnostic tests following ICMR norms

1. RTPCR -Open
2. Xpert- SARS-CoV 2 (CB NAAT)
3. Truenat (Molbio)
4. Rapid Antigen Assay

RTPCR open system and Xpert test need approval from ICMR. Hospitals/laboratories with Biosafety level II and above can apply for performing these tests directly to ICMR. RTPCR Open system can handle huge volumes of tests. Xpert gives the fastest confirmatory results.

Truenat tests require minimal biosafety precautions and give results in 90 minutes. Step II assay using the RdRp gene is a confirmatory test for COVID. Truenat is suitable in hospital settings.

The antigen test gives results within 30 minutes but has only moderate sensitivity (50-80%). It can miss 20-50% of cases. Hospitals/ Laboratories with NABL/NABH accreditation can do this test.

Antibody tests are recommended for sero surveillance and not for clinical decision making and hence not of much use to the private sector.

Setting up all these testing facilities requires approval from the state which is a simple process (Write to covidpsnodedme@gmail.com, covpsnodnat@gmail.com for permissions)

Laboratories/hospitals need to follow state guidelines and ICMR guidelines

A comparison of the available diagnostic tests is summarised below.

Tests	Time to be applied	Meaning of a Positive Test	Meaning of a negative test	Turnaround Time	Maximum Number of individual samples per day	Biosafety Requirements	Other Uses
RTPCR (open)	Initial Days of illness	Positive	Negative	8 hrs	200	Very High	Respiratory Viral Panel, Encephalitis Viral Panel
Xpert (4 modules)	Initial Days of illness	Positive	Negative	45 Minutes	120	Medium	TB, H1N1, Nipah, Dengue, Chikungunya
Truenat (4 modules)	Initial Days of illness	Repeat using step II to confirm	Negative	90 minutes	40	Minimal	TB, HIV Viral Load, CD4 count, HPV (Cervical Cancer), HBV, HCV
Antigen Detection Kit	Initial Days of illness	Positive	Negative in symptomatic need to be reconfirmed by any RTPCR based tests	20 Minutes	Any Number	Minimal	-

The rate of testing is regulated by the government of Kerala. The details regarding this are available as per –

1.https://www.dropbox.com/sh/l2h2n9hu737lea3/AACo6zeAsaw4NItsVw1LIrTVa/Govt.%20Orders?dl=0&preview=G.O.-+PPP+for+COVID+19+testing.pdf&subfolder_nav_tracking=1

2.https://www.dropbox.com/sh/l2h2n9hu737lea3/AACo6zeAsaw4NItsVw1LIrTVa/Govt.%20Orders?dl=0&preview=G.O.-+Private+Lab.+COVID+19+-Rates+Fixed.pdf&subfolder_nav_tracking=1

4.2 – Rational use of PPE

The government has put up guidelines to manage the use of PPE, maintaining optimum use as well as to reduce the wastage of this essential material especially during this. Pandemic. The advisory of the government regarding rational usage of personal protective equipment is added as annexure. The detailed version of the advisory is available in this link http://dhs.kerala.gov.in/wp-content/uploads/2020/03/ppe_260320202.pdf. Please review annexure 11

5.Empanelment of Hospitals into the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana – Karunya Arogya Suraksha Padhathi (ABPM-JAY-KASP)

5.1 Basic Principles

For providing the benefits envisaged under the scheme, the State Health Agency (SHA) through State Empanelment Committee (SEC) will empanel or cause to empanel private and public health care service providers and facilities in the State as per the guidelines.

The SEC is free to decide the mode of verification of empanelment application, conducting the physical verification either through District officials, under the broad mandate of the instructions provided in the guidelines.

During the testing times of Corona virus pandemic when every Indian/every organization needs to contribute to the wellbeing and safety of our citizens, the Government has opened a process of temporary empanelment process for the hospitals to avail benefits of ABPM-JAY-KASP.

5.2 Process of Empanelment

A web-based platform is being provided for the empanelment of hospitals for ABPM-JAY-KASP – www.hospitals.pmjay.gov.in.

The existing Hospital Empanelment guideline remains as the basis for empanelment under ABPM-JAY-KASP. The following flexibilities are introduced for temporary Empanelment of hospitals through a Lite version of Hospital Empanelment Module (HEM Lite):

1. Considering the ground situation and to minimize the time for processing the application, the hospitals may request temporary empanelment with minimum details and documents. The same may be approved for temporary empanelment based on the relaxed criteria for a period of 3 months, as per the process laid down by the National Health Authority. MOUs is to be signed with such temporarily empanelled hospitals initially only for 3 months.

2. The decision to go ahead with temporary empanelment needs to be taken at the SHA level and communicated to district officials.

3. The SHA may request for extension of temporary empanelment beyond 3 months if required.

4. Eligibility criteria for temporary empanelment may be decided by SHA. If need be, given the ongoing COVID-19 pandemic, these may be relaxed compared to criteria for permanent empanelment.

5. Temporary empanelment can be for COVID-19 and non-COVID-19 hospitals both.

6. To speed up the process of temporary empanelment, the approval for empanelment maybe given by ED, SHA, or officer authorized by ED, SHA (instead of State Empanelment Committee) on the recommendation of DMO of the district.

7. The process of scrutiny at the district level (desktop scrutiny or on-site verification) may be decided by the SHA. If desktop scrutiny is adopted for temporary empanelment, on site verification may be done in a reasonable period as decided by ED, SHA.

SHA may decide the officer(s) who shall be responsible for on-site verification (physical scrutiny).

8. Such temporary empanelled hospitals, if otherwise eligible for permanent empanelment, maybe permanently empanelled (even before the 3-month duration of temporary empanelment) by making the online request after which regular process for empanelment should be followed. Otherwise, the hospitals may be de-empanelled after 3 months.

Detailed guideline on the empanelment and a fast track empanelment approach through Hospital Empanelment Module Lite version to speed up the process is annexed for reference.

5.3 Guidelines for raising the claims by Hospitals as per the approved packages under the scheme

The detailed guidelines and the process of claim admission to final submission and its processing are explained in the enclosed annexure.

For COVID-19 treatment, the circular issued by the SHA on the treatment package and PPE claiming procedures fixed in consultation with NHA has to be followed.

The current HBP 2.0 packages for COVID-19 have been revised as given below which will be applicable for private hospitals for COVID-19 management (Rs. / day) under the ABPM-JAY-KASP and for Government referred patients in Private Institutions.

In view of the COVID-19 pandemic, National Health Authority and the State Government have incorporated certain treatment packages in the current transaction system whereby the AB PM-JAY-KASP beneficiaries can avail free treatment for COVID-19 in all the Empanelled Public and Private Hospitals.

In addition to the selected 6 packages given below, the hospitals can claim the cost of PPEs used and isolation charges for the treatment of beneficiaries through the system.

COVID Packages

1. Acute Febrile Illness for COVID 19 Treatment

2. Pyrexia of Unknown Origin for COVID 19 Treatment

3. Pneumonia for COVID 19 Treatment

4. Severe Pneumonia for COVID 19 Treatment

5. Respiratory failure due to any cause for COVID 19 Treatment

6. Type 1 / 2 Respiratory failure for COVID 19 Treatment

For admission of above packages, following rates apply. (Rs. / day)

1. For PPEs and Isolation - Rs. 1,000/unit (Multiples of 1000 -Max Rs. 1 lakh per case)
2. General ward - Rs. 2,300
3. HDU - Rs. 3,300
4. ICU without ventilator - Rs. 6,500
5. ICU with ventilator - Rs. 11,500

The packages and the process for claiming the PPE in the Transaction Management system has been provided in the enclosed annexure.

The COVID-19 tests for the beneficiaries can be carried out in the existing public facilities which cannot be claimed under the scheme. If public facilities are not available the testing can be arranged in the private facilities for which the Government will bear the expense as per the norms.

5.4 Grievance Redressal

Any Grievance related to the scheme can be raised before the District Grievance Redressal Committee (DGRC) chaired by the District Collector through the District Project Coordinator of State Health Agency who will be the Convener of the Committee. Appeals against the DGRC can be brought before the State Grievance Redressal Committee (SGRC) chaired by the Executive Director of SHA and in case of the matter concerning SHA, the meeting will be chaired by the Principal Secretary, H&FWD.

6. District level Committees

For the effective implementation of the Public-Private Partnership, each District shall have a District level Committee comprising of the following

1. District Collector - Chairman
2. District Medical Officer(H) - Convenor.
3. District Program Manager NHM- Member
4. State Health Agency District Coordinator. – Member
5. A representative of IMA.- member
6. A representative of KPHA - member
7. A representative of CHAI - member
8. A representative of QPMPA- member
9. A representative of the Kerala Private Medical College Association- member.
10. A representative of the Indian Dental Association- member
11. Any other member as decided by the District Collector

6.1 Functions of the District Level Committee:

6.1.1.The District Committee shall review and monitor the situation periodically, refer cases, Identify and empanel Private Hospitals for COVID case management.

6.1.2. The committee shall put in place an action plan to optimally utilize the private health care institutions for COVID management.

6.1.3. The committee shall ensure capacity building and trainings to the private health care institutions in COVID case management and infection control practices.

6.1.4. The committee may take appropriate action to engage nursing homes and clinics based on the progress of the epidemic.

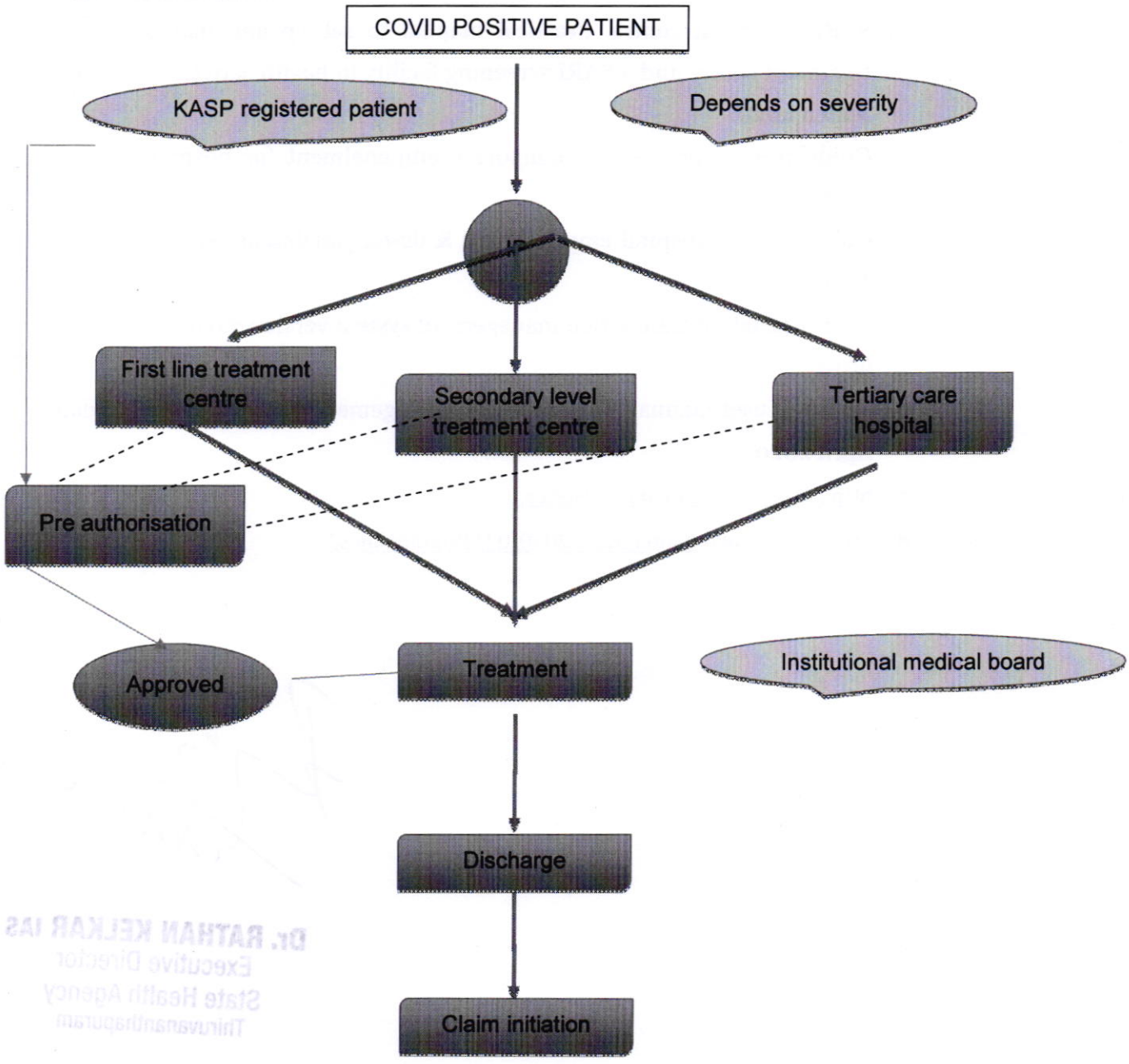
6.1.5. The services of the private doctors and other health staff may be utilized by the committee as and when needed at remuneration based on existing norms.

7. Conclusion

Public-private partnerships have demonstrated successful containment of infectious disease outbreaks in the past. Countries that have had a policy-based

strategic relationship with the private sector seem to have performed well in controlling this pandemic. These guidelines have been issued for assisting the onboarding of the private health care institutions towards the effective management of COVID-19 and are liable for change based on the progress of the epidemic in the State of Kerala.

8. Schematic representation of COVID patient in an empaneled private hospital



9. Resource

1. Reference Guide for Converting Hospitals into dedicated COVID Hospitals, COVID-19 (nCorona) Virus Outbreak Control and Prevention State Cell Health & Family Welfare Department Government of Kerala, March 2020
2. SARI treatment centre. Practical manual to set up and manage a SARI treatment centre and a SARI screening facility in health care facilities, WHO March 2020.
3. Guidelines on process for temporary empanelment for hospitals through HEM Lite
4. Guidelines on hospital empanelment & de-empanelment version 2.0 dated June 2020
5. User manual for transaction management system version 7.0 dated 04March 2019
6. Approval user manual for transaction management system version 8.0 dated April 2020
7. http://dhs.kerala.gov.in/advisories/
8. https://arogyakeralam.gov.in/2020/03/25/guidelines/

13/7/2020

Dr. RATHAN KELKAR IAS
Executive Director
State Health Agency
Thiruvananthapuram

List of References

Reference -1-Health care worker resource management guideline

COVID-19 (nCorona) Virus Outbreak Control and Prevention State Cell

Health & Family Welfare Department

Government of Kerala

HEALTH CARE WORKER RESOURCE MANAGEMENT GUIDELINES FOR CENTRES PROVIDING COVID-19 CARE

No.31/F2/2020 Health, 20th June 2020

1. Introduction

In view of increasing number of COVID-19 cases reported from the state and to prevent the health care workers getting infected, it is essential that the valuable human resources in the health sector are used judiciously. An optimal use of Health Care Providers and Volunteers is essential to manage the system during the pandemic phase. In view of this, the following arrangements are to be made in Health Care Institutions across the State, to ensure the safety of the frontline workers and to enable judicious use of PPEs.

The list of the following categories should be prepared so that duty arrangements shall be done on a need basis:

a. Doctors
b. Nurses (Staff Nurses/Head Nurses/ Nursing superintendents/Nursing Officers)
c. Pharmacists
d. Lab Technicians
e. Nursing Assistants
f. Hospital Attendants
g. Drivers
h. Others

* District Medical Officer shall do the stratification of all categories of staff in the district in different peripheral institutions based on skill (ICU care, Ventilator, Intubation etc) to create a district pool.
* Principals and Superintendents of Medical Colleges and Medical College Hospitals shall also do a similar stratification in their institution.

2. Three tier system of human resource management for COVID care

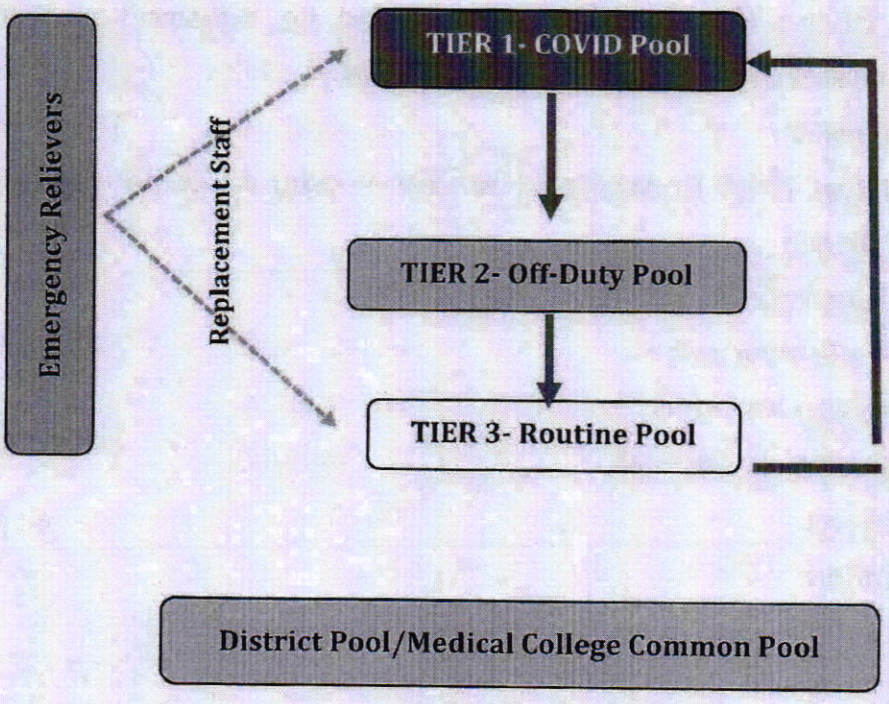
Staff belonging to the above categories should be segregated in to three tiers.

Tier 1: Staff directly involved in care of COVID-19 suspected/confirmed cases and also maintaining the facility (e.g.) isolation ward (COVID pool)

Tier 2: Off-Duty pool

Tier 3: Staff involved in care of Non-COVID patients (Routine Pool)

Duty Rotation



- **Institutional specific rearrangements of duty shall be made by the Superintendent as and when need arises. The same may be communicated with the DMO/DME, as the case may be. Monthly duty roster should be prepared in advance and submitted to DMO/DME.**
- **Any duty exemption to vulnerable staff may be done as per the judicious discretion of the hospital Superintendent/Principal and the same may be communicated to the DMO/DME.**

Table. 1. Health care worker duty matrix

Tier	Duty setting	No. of Shifts per day	Duration of work per day	Number of days continuous duty	Number of off-days following continuous duty
Tier-1	COVID POSITIVE ICU	3	8 hrs (4 hrs with PPE and 4 hrs without PPE)	10	10
Tier-1	COVID POSITIVE ISOLATION WARD	3	8 hrs (4 hrs with PPE and 4 hrs without PPE)	10	7
Tier-1	COVID SUSPECT ICU	3	8 hrs (4 hrs with PPE and 4 hrs without PPE)	7	7
Tier-1	COVID SUSPECT	3	8 hrs	10	7

	ISOLATION WARD		(4 hrs with PPE and 4 hrs without PPE)		
Tier-3	Non-COVID Duty	3	8	As per existing norms	

- The annexure- 2 provides a scenario of how the 8 hours COVID duty can be internally rotated (4 hrs with PPE & 4 hrs without PPE).
- There should also be an additional team which will function as emergency relievers to support the other tier staff in case of increased patient load or if any staff has to be relieved off duty.
- The **Emergency relievers / backup team** for the support of isolation facilities should not be involved in direct patient care in COVID. They can be utilized for reinforcement of training of all category of staff/ Planning of activities/ Hospital Infection Control (HIC) Implementation.
- In addition to the above tier, a staff **District pool** comprising of 15 staff in each category should also be made available in the district level to replace any staff that need to be placed under isolation or staff that are unable to attend work due to a family member being placed under isolation (as per guidelines) or other medical reasons. This district pool should include staff working in peripheral hospitals where the patient load is less. A similar pool should be identified in all Medical Colleges by the Superintendent and report submitted to the Principal and DME

3. **Workflow Management**

- The staff should be divided into different teams based on the setting and skills. The teams shall work in the isolation wards/ICUs on a rotation basis.
- Each team in the tier must be assigned specific tasks so as to reduce the frequency of staff movement in and out of the isolation wards and ICUs
- All staff working must undergo strict training, implementation of buddy system (see annesure-2) to ensure that they are well versed in donning and doffing of Personal Protective Equipment. Superintendents shall ensure the adequate stock of PPE and usage of PPE in different setting by various category of staff as per guideline No. 31/F2/2020/Health dated 25th March 2020.
- After the COVID duty, staff should take bath in the hospital itself and take necessary personal hygiene measures to prevent possible infection. The head of Institution shall arrange adequate infrastructure arrangements for resting / grooming of staff in duty.
- **Regular quarantine of healthcare workers after performing duty in COVID-19 areas is not warranted** (Reference- Ministry of Health and Family Welfare, Govt. of India)

4. **SOP to be followed in case a Health Care Worker reports exposure / breach of PPE**

Reference: Advisory for managing Health care workers working in COVID and Non-COVID areas of the hospital. Ministry of Health & Family Welfare Directorate General of Health Services (EMR Division) https://www.mohfw.gov.in/pdf/AdvisoryformanagingHealthcareworkersworkinginCOVIDandNonCOVIDareasofthehospital.pdf

The staff or the buddy allocated to the health care worker must report every exposure to COVID-19 to the concerned nodal officer/ COVID cell of the institution immediately.

The exact details of exposure to ascertain whether the exposure constitutes a high risk or low risk exposure as described below:

High risk exposure:

- HCW or other person providing care to a COVID-19 case or lab worker handling respiratory specimens from COVID-19 cases without recommended PPE or with possible breach of PPE

- Performed aerosol generating procedures without appropriate PPE.
- HCWs without mask/face-shield/goggles:

  - having face to face contact with COVID-19 case within 1 metre for more than 15 minutes

  - having accidental exposure to body fluids

Low risk exposure: Contacts who do not meet criteria of high-risk exposure

The Superintendent / Nodal Officer/ Head of the Department will form a sub-committee to assess the level of exposure and the risk as per assessment format at Annexure I (also accessible as per the reference). As per the assessment:

- **High risk contacts** will be quarantined for 14 days, monitored for development of symptoms, if tested positive will be managed as per the protocol laid down by the state government.

If they test negative and remain asymptomatic, complete the 14-day quarantine and return to work.

- **Low risk contacts** shall continue to work. They will self-monitor their health for development of symptoms. In case symptoms develop they should inform the nodal officer and follow the testing protocol.

- If a health care worker is a contact of a positive case in places other than workplace, he/she shall be managed as any other contact as per existing guidelines

5. General Instructions to HCWs:

- The HCWs shall practice frequent hand washing, worker to worker distancing as far as possible while at work and practice transmission-based precautions at all times.
- Off-duty HCWs should also practice frequent hand washing, social distancing and wearing of masks.
- If any staff develops fever and/or respiratory symptoms during duty/quarantine period/off-duty, then they shall be tested and treated as per the guidelines. All hospital should reserve separate isolation facility for health care staff.
- The health status of all staff on duty/quarantine shall be monitored and any physical or psychological issues to be addressed at the earliest with the nodal officer and relevant experts.

6. Food & Accommodation:

- The Head of institution/superintendent shall ensure all staff in tier-1 be provided food and single room accommodation with bathroom facility while on duty days and for those staff undergoing quarantine (because of breach of PPE). Decent and comfortable stay shall be arranged at a facility near to hospital with adequate facilities. The head of institution / superintendent shall arrange for such facilities as per the requirement and the expenses met through the district health administration (DMO & DPM)

- Those staff falling in other tier and who require accommodation facilities may also be provided the same.
- The COVID cell of the institution may opt for the places of stay identified by the District Collectors **OR** they may identify the place convenient to the staff at their level as per the prescribed rates decided by the respective District Collectors.
- DMO and DPM shall coordinate with the COVID Cell of the institution and facilitate the stay and transportation arrangements.

7. Testing:

Testing of health care staff should be done as per the existing COVID testing guidelines of the State. Those having symptoms should be immediately tested for COVID 19. Other staff / those completing quarantine etc may be included for testing in Sentinel/ Sero-Surveillance as the case may be.

8. Hospital Infection Control Committee (HIC):

1. Superintendent should ensure that Hospital Infection Control Committee monitors the infection control practices in the hospital on daily basis. Refresher training to all category of staff should be done routinely. A record of the activities should also be maintained.
2. Any hospital acquired infection reported should be internally audited, appropriate corrective measures to be done and a confidential report should be prepared and submitted to the DMO/DME.
3. DMO/DME should verify the infection control reports submitted from the COVID hospitals and other major hospitals.

9. Human Resources (HR) Management

1. HR gaps should be identified in all institutions and vacancies shall be timely filled by utilising PSC / NHM / Adhoc/HMC/ LSGD/Volunteer Services.
2. Head of institutions/Superintendents should identify a second layer of **Hospital Administration Team** and the list should be communicated to the DMO periodically. In Medical Colleges, a similar list has to be

prepared and submitted to the Principal and DME. This team may be activated in case of the first layer (existing team) becoming exposed to COVID.

3. Duty report must be given by each team at the end of the day's duty to the Superintendent. The Superintendent should submit a daily summary from the institution encompassing the major events in the hospital/ status of patients/ staff and daily statistics to the DMO. In Medical Colleges, a similar report has to be prepared and submitted to the Principal and DME.
4. District level Health administration should also identify a stand by team in case of occurrence of any unforeseen events

10. Stress Management & Motivation Enhancement among Health Personnel

Interventions should be done at three levels

A. Individual level
B. Institutional level
C. Departmental level

A. Individual Level

i. Adoption of Self-care strategies and **healthy life style** which includes
   - sleep hygiene
   - adequate hydration
   - healthy food
   - exercise and yoga
   - spending quality time with family and peers
   - engaging in stress buster activities

ii. Ensure **adequate breaks** in between the work.

iii. Appropriate **communication skills**- Stress usually aggravates communication issues and interpersonal conflicts which in turn increases the stress. Improving the communication skills will help in creating a better working environment. Professional help from Mental Health Programme can be sought in this regard.

iv. Enhancing **health seeking behaviour**

v. Improving **coping skills** with professional help

B. Institutional Level

i. Increasing **awareness** about the symptoms of stress and need of stress management.

ii. Enhancing **health seeking behaviour** among staff.

iii. A system for **regular Screening** at workplace with the help of Mental Health Programme.

iv. **Interventions** for those in need, thereby improving interpersonal relationships and productivity

v. Providing time for discussion on **Positive Mental Health** in staff meetings.

vi. Providing **peer support** for those in need.

C. Departmental Level

i. A dedicated **Helpline number and Email (dhsgrievance@gmail.com)** for Health Personnel by PSS Team, district wise. This facility may be utilised by all health staff for psychological support.

PSYCHOLOGICAL SUPPORT TO HEALTH PERSONNEL
HELPLINE NUMBERS
(Mental Health Programme, Dept of Health Services)

DISTRICT	HELPLINE NUMBERS
Thiruvananthapuram	9946463466
Kollam	9447005161
Pathanamthitta	9048804884
Alappuzha	9400415727
Kottayam	9847220929
Idukki	9188377551
Ernakulam	9446172050
Thrissur	8086007999
Palakkad	8547338442
Malappuram	9745843625
Kozhikode	8281904533
Wayanad	7025713204
Kannur	8593997722
Kasargod	9946895555

Helpline Numbers will be available from 9am to 4 pm.

State Helpline Number DISHA 0471 2552056, 1056 (Toll Free Number) will be available24x7

ii. Enhancing **health seeking behaviour** among staff.

iii. It is proposed to have a **buddy system** to those with heavy work load, where a less experienced personnel are paired with experienced one as a buddy. It helps to provide support, monitor stress and reinforce safety procedures. It also helps to improve skills in the less experienced one. Doctors, Nurses, Paramedical Staff and Other Government Staff with low work load during the present time can be deployed in this manner.

iv. **Effective breaks** during long hours of work should be implemented in all categories.

v. It is proposed to focus/measure work output rather than attendance/duration of work in Health System. The Personnel should also be allowed **flexible working hours** without affecting the functioning of the institution/system.

vi. **Appreciation** (written/verbal) from higher authorities and local administration helps to boost the morale of the personnel.

vii. It is proposed to have an additional **cultural** group for each official team to share personal/social space to enhance cohesion between the members. The discussions should be healthy and strictly as per code of conduct of Government servants.

All the COVID Cell in the respective Health Institutions, Director of Health Services and Director of Medical Education shall ensure that the above mentioned guidelines are followed and arrangements are ensured in all the Centres providing COVID19 care.

Principal Secretary

Annexure-2

CASE SCENARIO OF BUDDY SYSTEM IN ICUs AND ISOALTION WARDS:

Buddy system in a system when in there are at least two health workers looking after each other so that examination and procedures on infectious and critical patients can be performed without breach in PPE protocols.

Eg: A staff nurse who wants to perform suction in an intubated COVID positive patient can identify a buddy (another nurse). The buddy can assist the nurse in donning PPE. The buddy may also wear PPE and follow the staff nurse and assist in the procedure. Potential breach in PPE scenarios can be intimated to the staff nurse also. This system enables partnership and psychological support to the staff nurse and the buddy and also helps in reinforcing the infection control protocol.

SCENARIO OF INTERNAL ROTATION WITHIN THE 8 HOUR DUTY WITH 4 HRS WITH PPE AND 4 HRS WITHOUT PPE:

The eight-hour duty in COVID setting to be taken may be divided according to the example given below. This is a scenario where the doctor-1 or nurse-1 may perform the duty alternating the activities with the Doctor-2 and Nurse-2

HCW	Time	Activities
Doctor-1 or Nurse-1	1st four hrs of the duty time (with PPE)	-Patient examination -Performance of procedures -Patient Monitoring
	2nd four hrs of the duty time (without PPE)	-Maintenance of records and documentation -Bystander counselling -Discharge/transfer in procedures -Training of staff -Monitoring of routine activities in ICU

The doctor-2 or nurse-2 can reverse the roles in the specified times.

150 YEARS OF CELEBRATING THE MAHATMA

GOVERNMENT OF KERALA

Abstract

Health & Family Welfare Department – COVID-19 Instructions for using GeneXpert / TrueNAT-beta- CoV in the private sector in Kerala - Revised guidelines for Truenat testing for COVID-19 - Modified Orders Issued.

HEALTH AND FAMILY WELFARE (M) DEPARTMENT

G.O.(Rt)No.939/2020/H&FWD Dated,Thiruvananthapuram, 26/05/2020

Read: 1) G.O.(Rt) No. 726/2020/H&FWD dated 16/04/2020.

2) Revised guidelines issued by the ICMR for TrueNAT testing for COVID-19 dated 19/05/2020.

ORDER

As per the Government Order read as above, instructions were issued for testing COVID-19 using GeneXpert / TrueNAT-beta-CoV in the private sector in Kerala. ICMR vide Reference 1 has stated that biosafety and biosecurity requirements for use of TrueNAT machines are minimal, as the sample is collected in viral lysis buffer. ICMR advisory also stated that the TrueNAT system is now a comprehensive two step assay. Step I is E gene screening assay that is to be followed by step 2 that is a RdRp gene confirmatory for all samples that are tested as positive by E gene assay'.

2) In the above circumstance, Government are pleased to modify the Government Order read above as follows.

I) Clause 2 under the heading '**DESIGNATED TESTING FACILITY for doing TrueNAT/ GeneXpert tests** ' is replaced as **'Private labs who would like to use TrueNAT system may contact NABL (venkat@nabl.qcin.org or ceo@nabl.qcin.org) for accreditation for this test. Test shall be performed in laboratories with NABL**

Reference – 2
Reference -2

File No.HEALTH-F2/31/2020-HEALTH-Part(3)

GOVERNMENT OF KERALA

Abstract

Health & Family Welfare Department - Covid 19 - Public Private Partnership for Covid 19 testsing - Orders issued.

HEALTH & FAMILY WELFARE (F) DEPARTMENT

G.O.(Rt)No.1235/2020/H&FWD Dated,Thiruvananthapuram, 02/07/2020

Read 1 Do letter No. ECD/COVID 19/Misc/2020 dated 25.05.2020 from Director General, ICMR.

2 Minutes of the Meeting with the representatives of Private Laboratories dated 19/06/2020.

ORDER

As per the letter read as 1st paper above , ICMR informed that the prices for testing kits of COVID 19 have become competitive and undergone reduction as compared to the initial days of the Pandemic. Hence the upper ceiling price of Rs. 4500/- as stated earlier is not applicable and requested the State Governments to negotiate with private labs and fix mutually agreeable prices for samples sent by the Government.

Government of Kerala intends to increase accessibility of testing facilities to citizens. Public Private partnership is considered as one of the options to ensure increased access to COVID-19 tests and decrease the turn around time of testing. Public sector can partner with the private sector for conducting COVID-19 testing. The Private Sector Laboratories which are approved by Indian Council of Medical Research (ICMR) for performing COVID-19 testing , using RTPCR based technology , located in Kerala are eligible to be the partners. Hence the Department held a meeting with the representatives of Private Laboratories for performing COVID 19 test on 19th

Reference -2-Public private partnership in testing- government order

June 2020.

Based on the discussions, Government decided to increase the accessibility of testing the citizens by Public Private Partnership and to fix the per test charges for the samples referred by the Government to private labs @ Rs. 2500/- for individual RTPCR one test, as sample collection is done through Department machinery.

A detailed guideline to operationalise the process will be issued by Department of Health and Family Welfare.

(By order of the Governor)
RAJAN NAMDEV KHOBRAGADE
PRINCIPAL SECRETARY

To:

The Director of Medical Education , Thiruvananthapuram
The Director of Health Services , Thiruvananthapuram
All District Collectors
All District Medical Officers.(Through Director of Health Services)
The Drugs Controller Thiruvananthapuram
The Information &Public Relations(Web&New Media) Department
Stock File / Office Copy

Forwarded /By order

Section Officer

Reference – 3-COVID-19 testing private laboratory -rates fixed – government order

File No.HEALTH-F2/31/2020-HEALTH-Part(3)

GOVERNMENT OF KERALA

Abstract

Health & Family Welfare Department - Covid 19 - Private Laboratory - Covid 19 tests - Rates fixed - Orders issued.

HEALTH &FAMILY WELFARE (F) DEPARTMENT

G.O.(Rt)No.1236/2020/H&FWD Dated,Thiruvananthapuram, 02/07/2020

Read 1 Do letter No. ECD/COVID 19/Misc/2020 dated 25.05.2020 from Director General, ICMR.

2 G.O.Rt NO. 726/2020/H&fwd Dated 16.04.2020

3 G.O.Rt NO. 939/2020/H&FWD Dated 26.05.2020

4 Minutes of the Meeting with the representatives of Private Laboratories dated 19.06.2020

ORDER

As per the Government Order read as 3rd paper above, Government have fixed Maximum cost of RTPCR test as Rs. 4500/- , screening test as Rs. 1500/- , Step I True NAT assay as Rs. 1500/- and of Step II confirmatory assay as Rs. 3000/-.

2. As per the letter read as 1st paper above , ICMR informed that the prices for testing kits of COVID- 19 have become competitive and undergone reduction as compared to the initial days of the Pandemic. Hence the upper ceiling price of Rs. 4500/- as stated earlier is not

applicable and requested the State Governments to negotiate with private labs and fix mutually agreeable prices for samples sent by the Government and also for private individuals referred by the Registered Medical Practitioners in Kerala for testing by Private Labs.

3. Government's vision is to ensure access for testing to all eligible individuals in the State. For that a reduction in overall test price is essential. The Department held a meeting with all private laboratories in Kerala performing COVID - 19 test on 19th June 2020.

4. Based on the discussion and further detailed analysis , Government are pleased to revise various tests for diagnosis Covid 19 in the State as follows for the time being.

Type of test	Price per RT PCR test (in Rs.)
RTPCR (Open system) Test	2750
Xpert NAT Test	3000
True NAT Test Step I	1500
True NAT Test Step II (only for those tested positive in Step I)	1500

(By order of the Governor)
RAJAN NAMDEV KHOBRAGADE
PRINCIPAL SECRETARY

To:

The Director of Medical Education , Thiruvananthapuram
The Director of Health Services , Thiruvananthapuram
All District Collectors

All District Medical Officers.(through Director of Health Services)
The Drugs Controller Thiruvananthapuram
The Information &Public Relations(Web &New Media)Department.
Stock File / Office Copy

Forwarded /By order

Signature valid
Digitally signed by [illegible]EENA PAUL
Date: 2020.[illegible]:00:43 IST
Reason: Approved

Section Officer

Reference -4 – Hospital checklist -1

Checklist	Response	Remarks
Name of the Hospital:		Date of Assessment:
Human Resources		
Are Adequate HR available for managing services?	Yes/No	
Services		
Are all essential services happening as usual?	YES/NO	If NO, which all services are not happening.
Are all emergency services happening as usual ?	YES/NO	
Materials and Drugs		
Does the institution has adequate stock of all essential and emergency drugs?	YES/NO	
Does the institution has adequate stock of PPEs	YES/NO	
Infection Control Practices		
Triage for screening of respiratory symptomatics available at first point of entry?	YES/NO	
Are facilities for social distancing available for patients and bystanders at Triage area?	YES/NO	
Is there system to ensure at least 1m distance between staff and patients/bystanders at triage/ reception?	YES/NO	
Is there physical barrier (glass/plastic) at registration/reception areas to limit close contact between triage staff and patients?	YES/NO	
Does the hospital ensures that persons with respiratory illness/fever are examined at separate track in the hospital?	YES/NO	
Is the patient waiting area and examination room in 'respiratory track' well ventilated (Preferably Cross-ventilation with 10% of floor areas on each side with opening)?	YES/NO	

Is there a separate well ventilated area/room identified for suspected COVID-19 while waiting for examination?	YES/NO	
Is there system to ensure that materials from 'Respiratory track' are NOT reaching 'Routine track' without proper disinfection?	YES/NO	
Are staff working in 'respiratory track' separated from 'Routine track' (ideally staff should not intermingle at any time even for changing, signing attendance, tea or lunch)	YES/NO	
Are HCW performing clinical examination of patients in respiratory track wearing facemask and eye protection?	YES/NO	
HCWs caring for patients in the isolation area adhere to standard, contact, and droplet precautions and follow strict donning and doffing protocols?	YES/NO	
Are visual alerts available at triage for patients to self identify COVID suspects themselves?	YES/NO	
Is triage facility described above available at Emergency department?	YES/NO	
Is there a vehicle arrangement for transporting COVID suspects to nearby COVID Hospital without coming in contact with anybody?	YES/NO	
Is there a provision to admit the COVID suspect in a single bath attached room?	YES/NO	
Are visitors to hospitals restricted by policy?	YES/NO	
Are nebulisers replaced with inhalers to the possible extent?	YES/NO	
Special area and full PPE while performing aerosol generating procedures?	YES/NO	
Are surgeries which are non emergency and not essential for patient outcomes postponed?	YES/NO	
Do the hospital has tie up to do COVID tests before surgery for COVID suspects?	YES/NO	
Are all staff (including security and attender) trained in standard Infection prevention and control ?	YES/NO	

Is there a policy to screen staff daily for symptoms before reporting for duty?	YES/NO	
Are there adequate facility for hand washing for all staff at all major points?	YES/NO	
Are there enough PPE/Masks available for staff as recommended?	YES/NO	
Is there facility to do investigation of respiratory symptomatic (X ray) without coming in contact with other patients?	YES/NO	
Is there a system to ensure that all patients/bystanders wear masks inside the hospital?	YES/NO	
Is there facility for admitting persons with fever/respiratory symptoms in separated areas without mixing with other patients?	YES/NO	
Are visual aids on respiratory hygiene displayed adequately at OPD and IPD?	YES/NO	
Is there a mechanism to disinfect frequently touched surfaces in OPD and Corridors (door knobs/hand rails/ toys/ chairs) regularly?	YES/NO	
Does Hospital Infection control rounds happens at least on daily basis to identify gaps?	YES/NO	

Reference -5- Hospital checklist -2

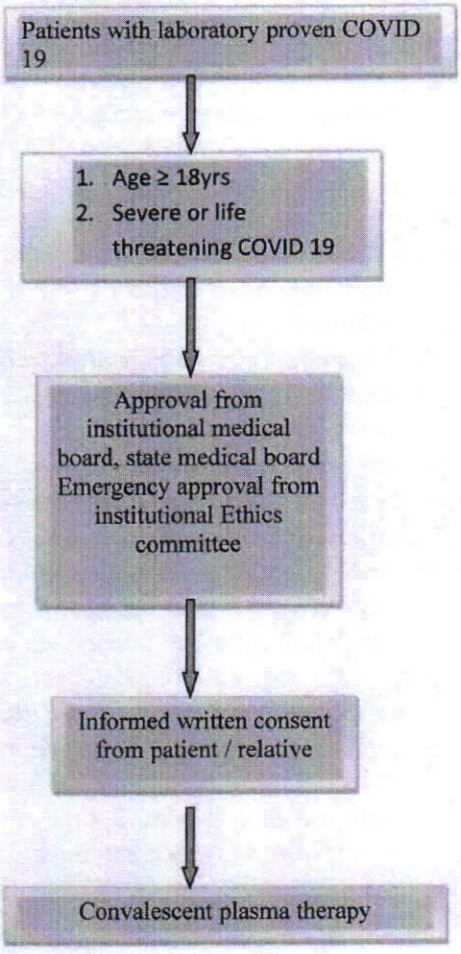
Name of COVID Hospital	
Input Indicators	
Infrastructure	
Is the hospital ready to occupy at least 30% of beds for COVID suspects today?	YES/NO
Does the hospital has 30% of COVID beds as single rooms with attached bathroom?	YES/NO
Do 30% of COVID beds have facility for providing centralised Oxygen?	YES/NO
Do 10% of COVID bed capacity has ventilator?	YES/NO
Facility for co-horting positive patients available?	YES/NO
Facility for Triaging patients available?	
Consumables Related to COVID Management	
Are all COVID drugs, essential and emergency drugs available?	YES/NO
Other consumables for Infection control available?(Sanitiser/Sodium Hypochlorite etc)	YES/NO
PPE Kit stock adequate for 1 month?	YES/NO
3 layer Masks stock adequate for 1 month ?	YES/NO
N 95 stock adequate for 1 month?	YES/NO
Face shield stock adequate for 1 month?	YES/NO
HR related to COVID Management	
Adequate Doctors available ?	YES/NO
Adequate Nurses Available?	YES/NO
Adequate other staff available ?	YES/NO
Training related to COVID Management	
Training of ALL staff on PPE completed	YES/NO
Infection control training for ALL staff	YES/NO
Training on Clinical Management for ALL staff	YES/NO
Training on Ventilator management for ALL doctors & nurses	YES/NO
Training on dead body management protocol for ALL staff	YES/NO
SOP & Practices- COVID settings	
Transferring patients for Investigations without coming in contact with others available?	YES/NO
Protocol for shifting non-COVID patients to Non-COVID	YES/NO

setting available?	
Duty Roster for Isolation-Quarantine- Clean areas- Reserve available?	YES/NO
Adequate accommodation facilities for staff arranged ?	YES/NO
Daily Staff screening before entering duty available?	YES/NO
24 hour Yes/Nodal Office for administrators/clinicians/District Control room to communicate	YES/NO
Is there regular system to assess and provide psychological support to COVID suspects?	YES/NO
Is there a system to counsel the relative regarding the condition of the patient timely?	YES/NO
Is there a system to provide uninterrupted linen to every COVID suspects?	YES/NO
Is there system for safe collection, transport and disposal of Biomedical waste ?	YES/NO
Is there a system to ensure that Yes/No utensils from COVID area are moved to Yes/Non COVID area without disinfection?	YES/NO
Is there a plan to manage concurrent Yes/Non-COVID emergencies?	YES/NO
Output indicators	
No of COVID Suspects admitted (Cumulative)	YES/NO
No of COVID suspects ventilated (Cumulative)	YES/NO
Outcome Indicators	
Reported any Hospital Acquired COVID Infection	YES/NO
General Information	
Date of filling the information	

Reference -6 – convalescent plasma therapy

Annexure 1.

SOP FOR CONVALESCENT PLASMA THERAPY IN SEVERE/CRITICAL COVID -19



Annexure 2: INFORMED CONSENT FORM FOR COMPASSIONATE USE OF CONVALESCENT PLASMA FOR SEVERE/CRITICALLY ILL COVID-19 PATIENTS

Institutional Medical board has informed me that I /my relative have been diagnosed with severe/critical COVID-19 infection. They have clearly explained to me that there is no effective and approved medication against COVID-19 infection. They have informed me/relative that severe/critical COVID-19 infection diagnosed in the patient is not responding to the standard treatment administered as per state treatment guidelines. They have explained to me in detail that there is some scientific evidence regarding the effectiveness of using convalescent plasma for treating severe/critical COVID-19 infection. They have explained to me that US FDA has approved convalescent plasma for treatment of severe COVID-19 infection. They also explained to me that at present a Phase II clinical trial is going on in India conducted by ICMR to ascertain the efficacy of convalescent plasma in COVID-19 infection. They have explained to me that convalescent plasma has been used in treatment of infections like SARS, MERS, Ebola, influenza etc

The team of doctors informed me/relative that I have developed severe/critical COVID 19 infection. They have informed me that I /patient might benefit by the compassionate use of convalescent plasma. They have clearly explained to me that convalescent plasma has not been approved for the definitive treatment of COVID-19.They have explained to me in detail that as there is no response to standard treatment administered, and as there is a risk of progression to MODS, Convalescent plasma may be used on a compassionate basis. They have explained to me about the possible side effects of convalescent plasma administration like transfusion transmitted infections [TTN], TRALI [transfusion associated lung injury], TACO [transfusion associated circulatory overload], febrile hemolytic and non-hemolytic reactions and rarely even death. They have made it clear that the standard treatment for COVID-19 will be continued irrespective of my decision regarding the compassionate use of convalescent plasma. Knowing that convalescent plasma is not an approved medication for the treatment of COVID-19, I fully agree to the compassionate use of convalescent plasma for treatment of severe/critical COVID-19 infection

Name
Relation
Sign

Institutional Medical Board Members
Name

Annexure 3 - ROLES AND RESPONSIBILITITIES OF INSTITUTIONAL MEDICAL BOARD

1.The baseline clinical and biochemical parameters should be recorded in a case report form. Biochemical parameters ideally should include CRP, D-dimer, LDH, ferritin , T.protein prior to convalescent plasma administration and should be repeated every 48 hours for a week.

2.All the recorde details should be sent to State Medical board by the institutional medical board.

3.All the adverse events observed should be reported to State Medical board.

Reference - 7- Standard treatment guideline- critical care medicine

Standard treatment guideline- critical care medicine

http://dhs.kerala.gov.in/wp-content/uploads/2020/04/2.-critical-care-29-7-19_Final.pdf

1. Laboratory investigation for proven COVID 19 patients

At Admission	CBC, RFT, LFT, CRP, RBS, ECG
If clinically Indicated	Portable CXR, HIV, HBsAg, HCV, D-Dimer, Ferritin, LDH, CPK, procalcitonin, Blood culture
To repeat Every 3 days if clinically deteriorating.	CBC, Creatinine, AST/ALT, CRP, LDH, CPK, Ferritin, HRCT
For Immunocompromised patients eg Transplant recipients, HIV	Tests to rule out opportunistic infections like Mycobacterium tuberculosis, pneumocystis jiroveci etc

2. Categories

A	Mild sore throat / cough / rhinitis /diarrhea
B	Fever and/or severe sore throat / cough /diarrhea OR Category-A plus two or more of the following • Lung/ heart / liver/ kidney / neurological disease/ Hypertension / haematological disorders/ uncontrolled diabetes/ cancer /HIV-AIDS • On long term steroids /immunosuppressive drugs. • Pregnant lady • Age –more than 60 years. OR Category A Plus cardiovascular disease
C	• Breathlessness, chest pain, drowsiness, fall in blood pressure, haemoptysis, cyanosis [red flag signs] • Children with ILI (influenza like illness) with ***red flag signs*** (Somnolence, high/persistent fever, inability to feed well, convulsions, dyspnoea /respiratory distress, etc). • Worsening of underlying chronic conditions.

*Categorization should be reassessed every 24-48 hours for Category A & B

3. Identification of high risk patients

Co morbidities	Clinical assessment	Laboratory values
Uncontrolled diabetes	Hypoxia – SpO2 ≤ 93% on room air	CRP > 100 mg /L
Hypertension	Tachycardia PR > 125/min	CPK > twice upper limit of normal
Cardiovascular disease	Respiratory distress RR > 30/min	
Lung disease	Hypotension BP < 90systolic, 60mm Hg Diastolic.	Ferritin > 300mcg/L
CKD	Altered sensorium	TROP T elevation
CLD		LDH > 245 U /L
On immunosuppressives		D Dimer > 1000ng/ml
HIV / congenital immunodeficiency disorders		Multi organ dysfunction
Age > 60yrs		ALC < 0.8

Treatment strategies according to clinical situation

Category	Treatment	Precautions
A	Symptomatic treatment	Categorization should be reassessed every 28-48 hours for Category A.
B	1. Tab HCQs 400mg 1-0-1 x 1 day, then 200 1-0-1 x 4 days (Children : 6.5mg/kg/ dose PO BD day 1 followed by 3.25mg/kg/dose PO BD X 4 days) OR Tab Chloroquine base 600 mg (10mg/kg) at diagnosis and 300mg (5 mg/kg) 12 h later, followed by 300 mg (5 mg/kg) BD up to Day 5 Plus 2. Tab Azithromycin 500mg 1-0-0 x 1 day and 250mg 1-0-0 x 4 days Children: 10 mg/kg (max 500mg) day 1, Followed by 5mg/kg/day on days 2 to 5. 3. Tab Oseltamivir 75mg 1-0-1 in all symptomatic patients with influenza like illness until PCR report. Children : 3mg/kg/dose BD Dose adjustment for those with renal insufficiency	Contraindications to chloroquine /HCQS • QTc > 500msec • Porphyria • Myasthenia gravis • Retinal pathology • Epilepsy Pregnancy is NOT a contraindication If Baseline QT is prolonged – frequent ECG monitoring is required
C	1. Tab HCQs 400mg 1-0-1 x 1 day, then 200mg 1-0-1 x 4 days Children : 6.5mg/kg/ dose PO BD day 1 followed by 3.25mg/kg/dose PO BD X 4 days OR Tab Chloroquine base 600 mg (10mg/kg) at diagnosis and 300mg (5 mg/kg) 12 h later, followed by 300 mg (5 mg/kg) BID up to Day 5. [Usually 1tablet of chloroquine has 150 mg base] PLUS Inj Azithromycin 500mg IV stat and 250mg IV OD for 5 days Children: 10mg/kg (max 500mg) day 1, Followed by 5mg/kg/day on days 2 to 5. 2. Tab Lopinavir / Ritonavir (400/100) 1-0-1 for 14 days	For chloroquine and derivatives as discussed above For Protease inhibitors Assess for drug-drug interactions (including with calcineurin inhibitors) before starting. Gastrointestinal intolerance may be seen Monitor liver function tests while on therapy. Discontinue these agents upon discharge regardless of duration, unless previously used as maintenance medications for another indication.

	or for 7 days after becoming asymptomatic. Children 14 days to 6 months : 16mg/kg (based on lopinavir component) PO BD < 15kg : 12 mg/kg PO (based on lopinavir component BD) 15-25 kg: 200 mg-50 mg PO BD 26-35 kg: 300 mg-75 mg PO BD >35 kg: 400 mg-100 mg PO BD Lopinavir/ritonavir is to be used only if HCQS/chloroquine is contraindicated. Lopinavir/ritonavir should be used only on a compassionate ground after informed consent. It has to be started within 10 days of symptom onset. 3. Tab Oseltamivir 75mg 1-0-1 in all symptomatic patients with influenza like illness until PCR report with dose adjustment for children and those with renal insufficiency	
If CAT C patient progresses to ARDS/ MODS while on HCQS/chloroquine plus azithromycin, addition of Lopinavir/ritonavir may be considered in case of progressive worsening as Remedesivir is not available in India. In that case azithromycin is to be stopped. QTc is to be monitored very frequently. This combination is to be used on a compassionate ground after taking informed consent explaining the possibility of life threatening QTc prolongation and cardiac arrhythmias.		

For those with evidence of cytokine release syndrome [CRS]

Grade	Clinical Assessment	Treatment
Grade 1	Mild reaction: low grade fever, No oxygen requirement or need for IVF	No treatment
Grade 2	Moderate reaction : -High grade fever (> 103F), need for IVF (not hypotension), mild oxygen requirement (<6L/min) -Grade 2 AKI -Grade 3 LFT (Raised liver enzymes and S. Bilirubin ≥ 2.5gm/dl)	Send for serum IL-6, If not available , use CRP as a surrogate marker
Grade 3	Severe reaction : -Rapidly worsening respiratory status with radiographic infiltrates and spo2 ≤ 93% in room air or on supplemental oxygen (> 6L/min, high flow, BiPAP, CPAP) - Grade 4 Liver function test (raised liver enzymes, S Bilirubin > 2.5gm/dl and INR > 1.5, encephalopathy) -Grade 3 AKI; -IVF for resuscitation , - coagulopathy requiring correction with FFP or cryoprecipitate -low dose vasopressor (Noradrenaline < 0.5mcg/kg/min or Adrenaline < 0.3mcg/kg/min)	Send for serum IL-6 or CRP, Ferritin Consider tocilizumab >18 years : 8mg/kg IV (max 400mg) < 18 years < 30kg : 12mg/kg IV over 60 minutes >30kg : 8mg/kg (max 800mg) IV over 60minutes if no effect can repeat x 2 more doses Q8H apart; if no response, consider low dose corticosteroids especially in case of concomitant septic shock
Grade 4	Life threatening multi organ dysfunction, hypoxia requiring mechanical ventilation, hypotension requiring high dose vasopressors	Send for serum IL-6 or CRP; consider tocilizumab as in Grade 3; consider corticosteroids

(Adapted and modified from the Penn CRS criteria and MGH)

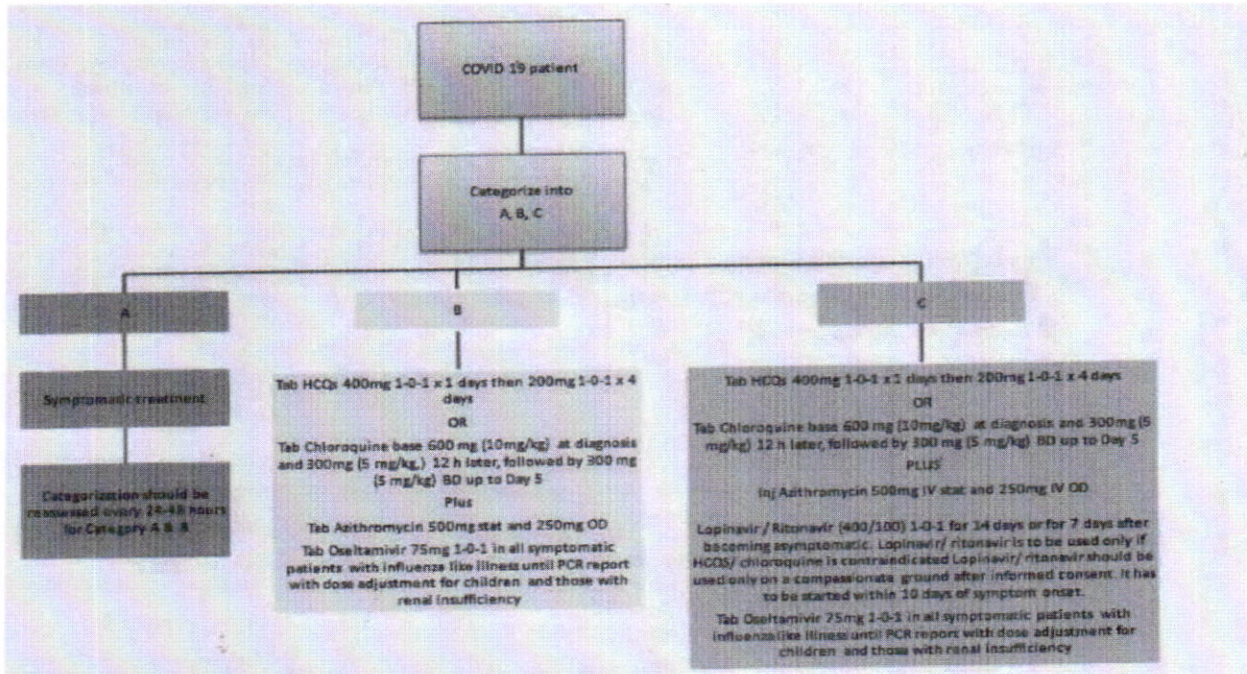
For Grade 3/ 4 CRS when there is no response to Tocilizumab / availability/tolerance issue

Glucocorticoids may be used for a short period of time – 3-5 days. It is recommended that dose should not exceed the equivalent of methylprednisolone 1-2mg/kg/day. A larger dose of glucocorticoid will delay the removal of corona virus due to immunosuppressive effects.

#CASE DEFINITIONS OF CLINICAL SYNDROMES

Mild pneumonia	Patient with pneumonia and no signs of severe pneumonia. Child with non-severe pneumonia has cough or difficulty breathing + fast breathing: fast breathing (in breaths/min): <2 months, ≥60; 2–11 months, ≥50; 1–5 years, ≥40 and no signs of severe pneumonia.
Severe pneumonia	Adolescent or adult: fever or suspected respiratory infection, plus one of respiratory rate >30 breaths/min, severe respiratory distress, or SpO2 <90% on room air Child with cough or difficulty in breathing, plus at least one of the following: central cyanosis or SpO2 <90%; severe respiratory distress (e.g. grunting, very severe chest indrawing); signs of pneumonia with a general danger sign: inability to breastfeed or drink, lethargy or unconsciousness, or convulsions. Other signs of pneumonia may be present: chest indrawing, fast breathing (in breaths/min): <2 months, ≥60; 2–11 months, ≥50; 1–5 years, ≥40. The diagnosis is clinical; chest imaging can exclude complications.
Acute Respiratory Distress Syndrome	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 oedema: respiratory failure not fully explained by cardiac failure or fluid overload. Need objective assessment (e.g. echocardiography) to exclude hydrostatic cause of oedema if no risk factor present. Oxygenation (adults): • Mild ARDS: 200 mmHg < PaO2/FiO2 ≤ 300 mmHg (with PEEP or CPAP ≥5 cmH2O, 7 or non-ventilated8) • Moderate ARDS: 100 mmHg < PaO2/FiO2 ≤200 mmHg with PEEP ≥5 cmH2O, 7 or non-ventilated8) • Severe ARDS: PaO2/FiO2 ≤ 100 mmHg with PEEP ≥5 cmH2O, 7 or non-ventilated8) • When PaO2 is not available, SpO2/FiO2 ≤315 suggests ARDS (including in non-ventilated patients) Oxygenation (children; OI = Oxygenation Index and OSI = Oxygenation Index using SpO2): • Bilevel NIV or CPAP ≥5 cmH2O via full face mask: PaO2/FiO2 ≤ 300 mmHg or SpO2/FiO2 ≤264 • Mild ARDS (invasively ventilated): 4 ≤ OI < 8 or 5 ≤ OSI < 7.5 • Moderate ARDS (invasively ventilated): 8 ≤ OI < 16 or 7.5 ≤ OSI < 12.3 • Severe ARDS (invasively ventilated): OI ≥ 16 or OSI ≥ 12.3
Sepsis	Adults: life-threatening organ dysfunction caused by a dysregulated host response to suspected or proven infection, with organ dysfunction. Signs of organ dysfunction include: altered mental status, difficult or fast breathing, low oxygen saturation, reduced urine output, fast heart rate, weak pulse, cold extremities or low blood pressure, skin mottling, or laboratory evidence of coagulopathy, thrombocytopenia, acidosis, high lactate or hyperbilirubinemia. Children: suspected or proven infection and ≥2 SIRS criteria, of which one must be abnormal temperature or white blood cell count.
Septic shock	Adults: persisting hypotension despite volume resuscitation, requiring vasopressors to maintain MAP ≥65 mmHg and serum lactate level >2 mmol/L. Children : any hypotension (SBP 2 SD below normal for age) or 2-3 of the following: altered mental state; tachycardia or bradycardia (HR 160 bpm in infants and HR 150 bpm in children); prolonged capillary refill (>2 sec) or warm vasodilation with bounding pulses; tachypnea; mottled skin or petechial or purpuric rash; increased lactate; oliguria; hyperthermia or hypothermia.

Reference -9-One-pager flow chart COVID-19 management guideline



A	Mild sore throat / cough / rhinitis /diarrhea
B	Fever and/or severe sore throat / cough OR Category-A plus two or more of the following Lung/ heart / liver/ kidney / neurological disease/ Hypertension/haematological disorders/ uncontrolled diabetes/ cancer /HIV- AIDS On long term steroids Pregnant lady Age –more than 60 years. OR Cardiovascular disease
C	Breathlessness, chest pain, drowsiness, fall in blood pressure, haemoptysis, cyanosis [red flag signs] Children with ILI (influenza like illness) with ***red flag signs*** (Somnolence, high/persistent fever, inability to feed well, convulsions, dyspnoea /respiratory distress, etc). Worsening of underlying chronic conditions.

Contraindications to chloroquine /HCQS

- QTc > 500msec
- Porphyria
- Myasthenia gravis
- Retinal pathology
- Epilepsy

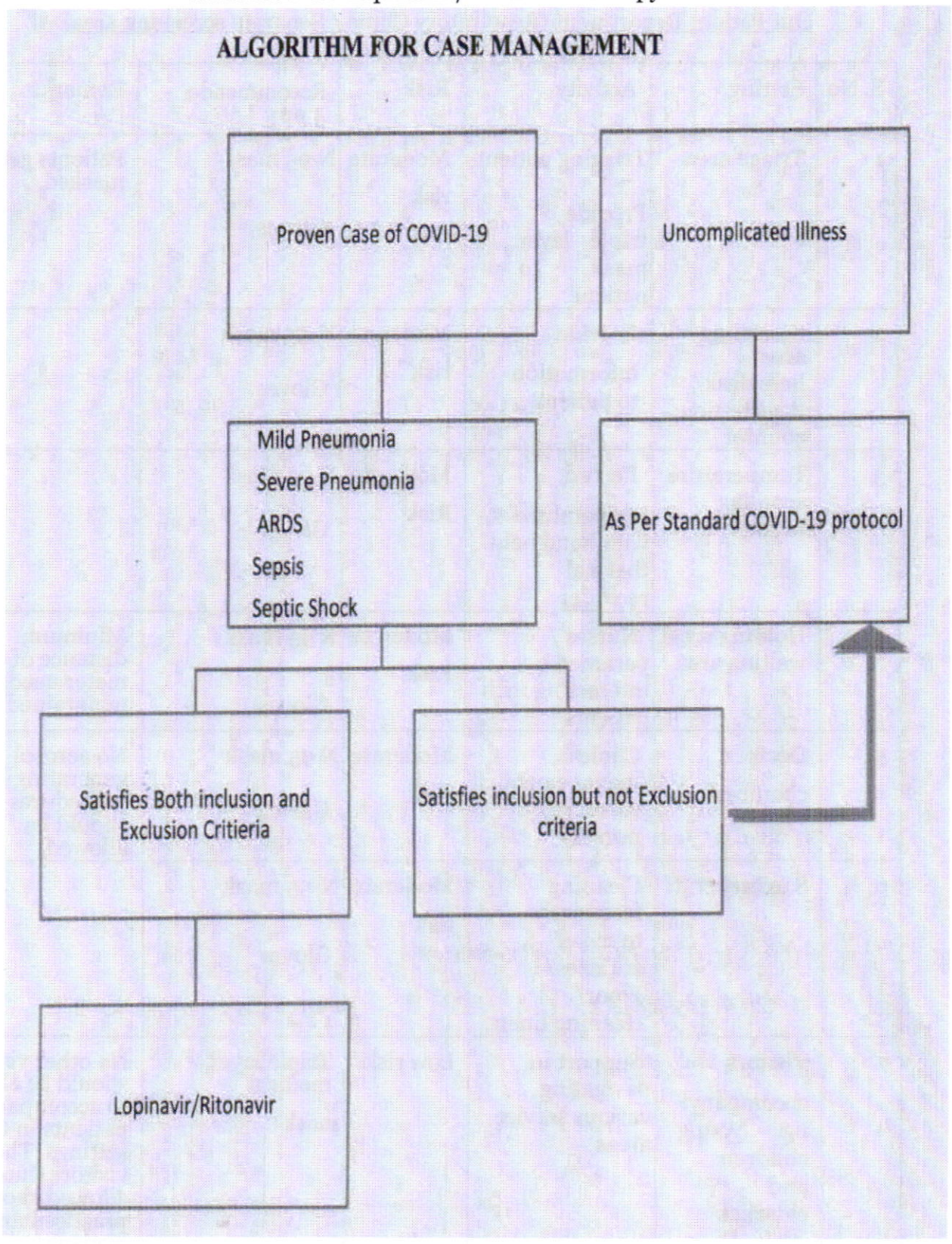
Pregnancy is NOT a contraindication
If Baseline QT prolongation – Monitor ECG

For Protease inhibitors
Assess for drug-drug interactions (including with calcineurin inhibitors) before starting.
Gastrointestinal intolerance may be seen
Monitor liver function tests while on therapy.
Discontinue these agents upon discharge regardless of duration, unless previously used as maintenance medications for another indication

If CAT C progresses to ARDS/MODS on HCQ/Chloroquine plus Azithromycin, addition of lopinavir / ritonavir may be considered

In Children: HCQs 6.5mg/kg/ dose BD, day 1 followed by 3.25mg/kg/dose PO BD X 4 days
Azithromycin: 10mg/kg (max 500mg) day 1, Followed by 5mg/kg/day on days 2 to 5.
Lopinavir/Ritonavir (based on lopinavir component): 14 days to 6months : 16mg/kg PO BD, < 15kg : 12 mg/kg PO, 15-25 kg: 200 mg-50 mg PO BD, 26-35 kg: 300 mg-75 mg PO BD, >35 kg: 400 mg-100 mg PO BD

Reference -10-Lopinavir / Ritonavir therapy flowchart



Reference -11- Rational use of PPE

Out Patient Department (Respiratory Clinic / Separate screening area)

S. No	Setting	Activity	Risk	Recommended PPE	Remarks
1	Triage area	Triaging patients Provide triple layer mask to patient.	Moderate risk	N 95 mask Gloves	Patients get masked.
2	Screening area help desk/ Registration counter	Provide information to patients	Moderate risk	N-95 mask Gloves	
3	Temperature recording station	Record temperature with hand held thermal recorder	Moderate Risk	N 95 mask Gloves	
4	Holding areal waiting area	Nurses / paramedic interacting with patients	Moderate Risk	N 95 mask Gloves	Minimum distance of one meter needs to be maintained.
5	Doctors chamber	Clinical management (doctors, nurses)	Moderate Risk	N 95 mask Gloves	No aerosol generating procedures should be allowed.
6	Sanitary staff	Cleaning frequently touched surfaces/ Floor/ cleaning linen	Moderate risk	N-95 mask Gloves	
7	Visitors accompanying young children and elderlies	Support in navigating various service areas	Low risk	Triple layer medical mask	No other visitors should be allowed to accompany patients in OPD settings. The visitors thus allowed should practice hand hygiene

All hospitals should identify a separate triage and holding area for patients with Influenza like illness. If there is no triage area / holding area for patients due to resource constraints, such hospitals will follow the above guidance for general OPD.

In-patient Services

S. No.	Setting	Activity	Risk	Recommended PPE	Remarks
1	Individual isolation rooms/ cohorted isolation rooms	Clinical management	Moderate risk	N 95 mask Gloves	Patient masked. Patients stable. No aerosol generating activity.
2	ICU/ Critical care	Critical care management	High risk	Full complement of PPE	Aerosol generating activities performed.
3	ICU /critical care	Dead body packing	High risk	Full complement of PPE	
4	ICU/ Critical care	Dead body transport to mortuary	Low Risk	Triple Layer medical mask Gloves	
5	Sanitation	Cleaning frequently touched surfaces/ floor/ changing linen	Moderate risk	N-95 mask Gloves	
6	Other Non-COVID treatment areas of hospital	Attending to infectious and non-infectious patients	Risk as per assessed profile of patients	PPE as per hospital infection prevention control practices.	No possibility of exposure to COVID patients. They should not venture into COVID-19 treatment areas.
7	Caretaker accompanying the admitted patient	Taking care of the admitted patient	Low risk	Triple layer medical mask	The caretaker thus allowed should practice hand hygiene, maintain a distance of 1 meter

Emergency Department

Sl.No	Setting	Activity	Risk	Recommended PPE	Remarks
1	Emergency	Attending emergency cases	Moderate risk	N 95 mask Gloves	When aerosol generating procedures are anticipated
2		Attending to severely ill patients of SARI	High risk	Full complement of PPE	Aerosol generating activities performed.

Pre-hospital (Ambulance) Services

S. No.	Setting	Activity	Risk	Recommended PPE	Remarks
1	Ambulance Transfer to designated hospital	Transporting patients not on any assisted ventilation	Moderate risk	N-95 mask Gloves	
		Management of SARI patient while transporting	High risk	Full complement of PPE	When aerosol generating procedures are anticipated
		Driving the ambulance	Low risk	Triple layer medical mask Gloves	Driver helps in shifting patients to the emergency

Other Supportive/ Ancillary Services

S. No.	Setting	Activity	Risk	Recommended PPE	Remarks
1.	Laboratory	Sample collection And transportation	High risk	Full complement of PPE	
		Sample testing	High risk	Full complement of PPE	
2	Mortuary	Dead body handling	Moderate Risk	N 95 mask Gloves	No aerosol generating procedures should be allowed. No embalming.
		While performing autopsy	High Risk	Full complement of PPE	No post—mortem unless until specified.
3	Sanitation	Cleaning frequently touched surfaces/ Floor/ cleaning linen in COVID treatment areas	Moderate risk	N-95 mask Gloves	
4	CSSD/Laundry	Handling linen of COVID patients	Moderate risk	N-95 mask Gloves	
5	Other supportive services	Administrative Financial Engineering Security, etc.	No risk	No PPE	No possibility of exposure to COVID patients. They should not venture into COVID-19 treatment areas.

Reference – 12- State health agency – contact

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