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**Govt. Medical College
Thiruvananthapuram**



**Pandemic Management Plan
2026**

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Message



Kerala Health has consistently recognised that pandemic preparedness is no longer a standalone activity limited to the health sector, but an essential component of public safety, governance resilience, and sustainable development. The experiences of NIPAH outbreaks, COVID-19 pandemic, emerging zoonotic threats, climate-sensitive diseases, and increasing global interconnectedness have clearly demonstrated that future public health emergencies require continuous preparedness, rapid response systems, and strong institutional coordination. In this context, the preparation of comprehensive Pandemic Preparedness Plans by the Department of Health and Family Welfare marks an important landmark towards strengthening Kerala's health security framework.

Today, pandemic management plans must be viewed through the broader lens of the One Health approach, which recognises the interconnectedness of human health, animal health, environmental systems, and ecological balance. Emerging infections are increasingly influenced by environmental degradation, climate variability, urbanisation, migration, and changing human-animal interactions. Therefore, effective preparedness requires coordinated action not only from the Health and Family Welfare Department, but also from departments including Animal Husbandry, Forests, Local Self Government, Disaster Management, Revenue, Education, Transport, Police, Water Resources, and Civil Supplies. Such interdepartmental convergence is critical for surveillance, risk communication, outbreak containment, logistics management, and continuity of essential services during emergencies.

Kerala has always demonstrated exemplary leadership in responding to public health challenges through timely action, scientific decision-making, community participation, and decentralised governance. The integration of pandemic management with disaster management systems further strengthens our capacity to respond to multiple emergencies simultaneously, including outbreaks occurring during floods, heat waves, or other natural disasters. The development of structured protocols, surveillance mechanisms, escalation frameworks, surge planning systems, infection prevention strategies, and institutional coordination models reflects the state's commitment to building a resilient and future-ready health system.

I am informed that Keralam is the only state where the pandemic preparedness plans have been prepared to such a depth right from the Panchayath level to District

and at institutional level upto Medical Colleges. I place on record my sincere appreciation to all those who worked on this endeavour. The dedication, technical expertise, and coordinated efforts demonstrated by the state and district teams are truly commendable. I am confident that these plans will further strengthen Kerala's capacity to effectively prevent, detect, and respond to future public health emergencies while ensuring the safety and wellbeing of our people.

Shri. K Muraleedharan

Minister for Health and Family Welfare and Devasom,
Government of Kerala



Foreword

Kerala Health has been taking efforts to strengthen the Medical Education. Out of various initiatives such as documentation on Medical College developments giving all the details, preparation of Fact Sheets of DME and MCH giving information regarding the outputs and outcomes, Standard treatment protocol, standardization of the units in the Medical Colleges, one more initiative was taken regarding preparedness for health emergencies such as communicable diseases which could transform into an epidemic/ pandemic. COVID has taught us many lessons. But the moot question is, “What learnings have we taken away from the Pandemic, and its aftermath?” Have we understood those learnings and worked on developing the systems for future scenarios?

And now, I say with immense pride that through Kerala Health, every Medical College has excellent pandemic management plans in place.

This preparation of pandemic management plans started with the thought of “What new systems do we need to develop across the State?” The Director of Medical Education and senior Doctors from Community Medicine and other Departments took up the challenge of preparation of plans. An elaborate process was followed by conducting state level meetings. Dr Aravind was asked to prepare a template for the Medical Colleges Plans. That template was validated in the state meeting and shared to all the Government Medical Colleges in the State. After that step, a workshop was conducted at Ernakulam Medical College involving all the teams from Medical Colleges as well as from Apex Cancer Centres. Post this workshop, all the institutions took a series of meetings at their level and completed this commendable work.

It is noteworthy to mention here that after Alappuzha, Thrissur also prepared a comprehensive Pandemic management Plan and Festival management Plan. Unfortunately, during this year's Thrissur Pooram preparations, there was a massive fire accident, but the Thrissur MCH team put the Management Protocol in practice and in a short span of time within 8 minutes, they took care of the fire disaster victims and provided exemplary services. While they were handling the incident, thanks to timely preparation and awareness, they were handling hundreds of emergencies not relating to the disaster during that period. This has clearly demonstrated to all that well-prepared planning and capacity building is the key to mitigating problems.

The Kerala Health program has to keep up with changing times, and so, along with the aforementioned initiatives, we discussed with the Digital University of Kerala

(DuK) to develop Kerala Pandemic Management System. This system envisages end-to-end solution for pandemic management. This will make things easy for the functionaries in the health institutions as well as the field functionaries to update the information. Once the pandemic management plans and Festival management plans are done, the teams will begin developing plans for calamities, other disasters and major accidents.

We are also planning mock drills so as to build the capacities of various teams. This way all the Medical Colleges teams will be well trained to manage any eventuality.

I am confident that all Medical Colleges shall institutionalize updating of plans on a yearly basis, skill building, analysis of any emergency handled and based on the analysis do modifications in the plans. This way it will be a dynamic plan of the Medical College.

For any Health System it is very important to have a system to handle any health emergency, and it is with sense of pride one can say that with the coordinated team work, this huge work was done in exemplary way. It also demonstrates that with shared vision and having 'thinking teams' at state, institution and field level can work on many challenges and deliver results. Therefore, these officers who worked on this project hands-on are mentioned right on the cover page! It is a big achievement for the Kerala Health to lay the foundation of Pandemic Management upon which further developments can be easily done.

I wholeheartedly appreciate the work done by one and all for preparing Pandemic Management Plans.

I am confident that all our Medical Colleges will become centre of excellence and earn recognition for their works. I wish all the success for the future endeavours.

Dr Rajan Khobragade IAS

Additional Chief Secretary
Health & Family Welfare and
AYUSH Department
Govt of Kerala.



Message

The health system of Kerala is defined by a mindset of proactive vigilance, a compassionate attitude toward the most vulnerable, and a historic legacy of resilience in the face of public health crises. Our motto for preparedness is simple: to be prepared and proactive is to safeguard the stability and prosperity of our people. This Pandemic Preparedness Plan is not just a technical manual; it is a shared commitment fuelled by the lessons learned from our past encounters with Nipah and COVID-19. These experiences have taught us that rapid mobilization and early detection are our most effective tools in preventing a public health emergency of international concern.

We have designed this strategy to be agile, moving from routine care to emergency surge levels based on real-time data such as ICU occupancy, staff availability, and disease epidemiology. By utilizing advanced diagnostic tools and regional surveillance cells, we aim to identify threats early, ensuring that life-saving interventions begin the moment a patient reaches our doors. Central to this plan is the safety of our workforce; we are committed to providing the training, equipment, and psychological support necessary to prevent burnout and ensure no healthcare worker faces these challenges alone.

Even in the height of a pandemic, our mission to provide essential care for mothers, children, and emergency cases will not waver. Through seamless coordination with district authorities and the private sector, we are building a networked response that maximizes resources for the benefit of every citizen. I am deeply grateful to the faculty and staff whose expertise shaped this document, and I am confident that by following these protocols, we will continue to lead with competence and compassion.

Dr. K. V. Viswanathan

Director of Medical Education
Government of Kerala

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Purpose of the Document

This Pandemic Preparedness Plan provides a scalable, evidence-based strategy for **Government Medical College, Thiruvananthapuram** to manage infectious disease outbreaks. By implementing a **Graduated Response Framework**, the plan ensures the hospital can transition smoothly from routine operations to crisis mode, minimizing deaths while protecting both staff and the public.

It acts as a central guide to align medical care, diagnostics, and infection control with district-level coordination. Ultimately, the goal is to build institutional resilience, ensuring the hospital remains functional and provides fair, high-quality care even when resources are severely limited.

Definitions and Abbreviations

Definitions

- Dual-Track System
 - This system minimises the risk of nosocomial transmission by ensuring complete physical and operational separation between infectious and non-infectious patient flows.
 - Dedicated staff teams are assigned to each track to avoid cross-deployment and reduce contamination risk.
 - Signage, physical barriers, and security personnel are deployed at entry points to strictly enforce track segregation.
 - Screening protocols, including symptom checks and exposure history, are conducted at the entry of the Pandemic Track to ensure early identification and containment.
- Color-Coded Zoning
 - Movement between zones is strictly regulated, with controlled access points and mandatory PPE requirements based on zone classification.
 - Each zone has designated healthcare workers, equipment, and waste disposal systems to prevent inter-zone contamination.
 - Transition areas (donning/doffing zones) are strategically placed between zones to ensure safe PPE handling.
 - Environmental cleaning protocols vary by zone, with Red Zones requiring the highest frequency and level of disinfection.
- Red Channel Protocol
 - The Red Channel is activated prior to patient movement, with prior intimation to all relevant departments to ensure preparedness.
 - Healthcare personnel involved in transport must wear full PPE, including N95 masks, face shields, gowns, and gloves.
 - Non-essential staff and patient movement are temporarily restricted during Red Channel use to maintain isolation integrity.

- After transport, a defined downtime is observed following disinfection to ensure adequate contact time for the disinfectant.

Abbreviations

ACH	Air Changes per Hour.
AIIR	Airborne Infection Isolation Rooms
BMW	Biomedical Waste.
DHS	Directorate of Health Services.
DME	Directorate of Medical Education.
ETO	Ethylene Oxide.
ICS	Incident Command System.
IDSP	Integrated Disease Surveillance Programme.
IHIP	Integrated Health Information Platform.
ILI/SARI	Influenza-Like Illness / Severe Acute Respiratory Infection.
IPC	Infection Prevention and Control.
KMSCL	Kerala Medical Services Corporation Ltd.
LMO	Liquid Medical Oxygen
NCD	Non-Communicable Disease.
OMU	Outbreak Monitoring Unit.
OT	Operation Theatre.
PHEIC	Public Health Emergency of International Concern.
PPE	Personal Protective Equipment
RAT	Rapid Antigen Tests.
SOP	Standard Operating Procedure

1. Introduction & Contextual Analysis

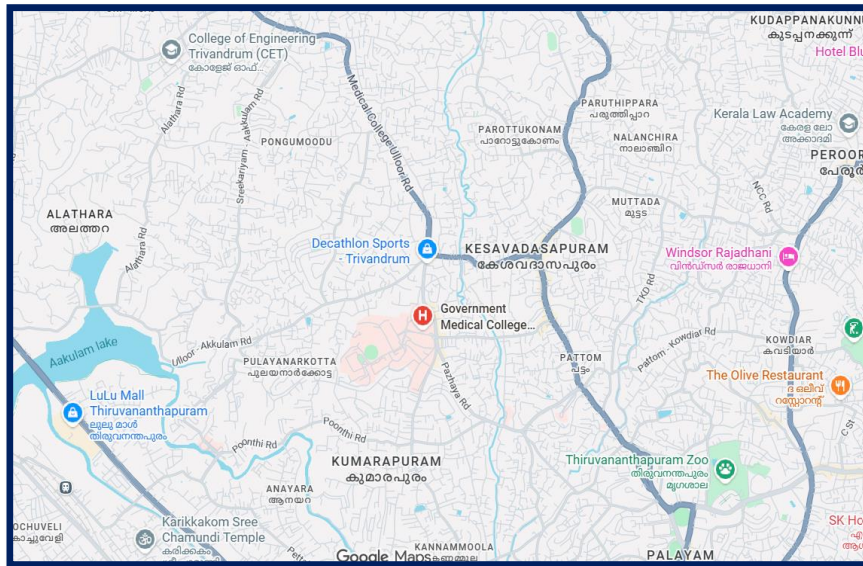
1.1 Background & Purpose:

As new diseases emerge and old ones resurge, pandemic preparedness has become a critical concern for global health. Pandemics and large-scale outbreaks can claim millions of lives, disrupt societies and devastate economies. With proactive measures, societies can better prevent, detect and respond to pandemics, safeguarding public health and socioeconomic stability.

In the face of emerging pathogens like M. Pox and Marburg, alongside the resurgence of H5N1, pandemic preparedness has shifted from a health goal to a global security imperative. The lessons of COVID-19 have proven that proactive strategies are the only way to shield societies from the catastrophic loss of life and economic collapse that follow an uncontained outbreak. This requires a robust, multi-sectoral commitment—especially within tertiary care hospitals, which serve as the vital referral centers and final defensive line for complex cases. Ultimately, investing in these systems is not just a clinical necessity; it is a moral and economic requirement to ensure global stability and social cohesion. Pandemic preparedness is also an investment in global stability and prosperity. Pandemic preparedness is not only a health imperative; it is a moral and economic necessity that requires collaboration and commitment across all sectors. Pandemic preparedness is a critical component of healthcare resilience, especially in tertiary care hospitals that function as referral centers and manage complex cases.

To prevent a Public Health Emergency of International Concern (PHEIC), the first seven days are a race against the exponential curve of transmission. The overarching goal is to transform a potential crisis into a contained incident. A tertiary hospital must establish a comprehensive preparedness plan encompassing surveillance, infection control, resource management, communication, and capacity surge. The primary objective is to ensure continuity of essential services while responding effectively to an evolving public health emergency. Kerala, with its unique demographic structure, high population density, and interconnected public-private healthcare system, requires region-specific adaptation of global preparedness frameworks, integrating community health infrastructure with tertiary-level response.

1.2 Institutional Geography:



The **Government Medical College, Thiruvananthapuram (GMCT)**, serves as a critical strategic node within the regional health infrastructure, occupying a 139-acre campus in the northwestern part of the Thiruvananthapuram City located in the Ulloor - Kumarapuram area. Its institutional geography is characterized by high-volume accessibility and proximity to essential transit hubs, situated approximately 7–8 km from the city’s primary commercial center at East Fort and the Thampanoor Central Railway Station. Furthermore, the facility’s

location just 5 km from the Kochuveli (North) Railway Station and the Thiruvananthapuram International Airport facilitates rapid domestic and international medical logistics, including air-ambulance operations and emergency supply chains. Connected by wide arterial roads and positioned near the NH 66 Bypass, the institution enables streamlined referral pathways from across South Kerala and neighbouring regions, bypassing urban congestion to ensure timely tertiary care intervention during public health emergencies.

1.3 District-Specific Risk Profile

Thiruvananthapuram District presents a multifaceted risk landscape for infectious disease outbreaks, driven by a high population density of approximately 4457 persons per square kilometre and a persistent burden of endemic pathogens as recorded by the Integrated Disease Surveillance Programme (IDSP). The district's epidemiological profile is dominated by a high incidence of Dengue Fever and Leptospirosis, with transmission dynamics increasingly influenced by climate-driven urban flooding in low-lying sectors. This environmental risk is further intensified by significant socio-economic variables, specifically the large-scale influx of inter-state migrant populations concentrated in high-density development zones such as Vizhinjam and Kazhakuttam. These demographics require specialized surveillance to prevent the re-introduction of Malaria and the spread of enteric diseases like Typhoid. Additionally, as a primary international gateway via its airport and central rail head, the district serves as a high-risk point of entry for novel or re-emerging pathogens, necessitating a robust diagnostic and isolation framework at the tertiary level to mitigate the threat of a Public Health Emergency of International Concern (PHEIC).

1.4 Scope & Objectives:

1.4.1 Scope of the document

- Aligned with Kerala State Pandemic Preparedness Strategy, IDSP, ICMR, and WHO emergency response framework
- Serves as a state-level reference and operational guide for pandemic preparedness and response
- Applicable across all tiers of healthcare and governance systems in Kerala
- Covers policy, surveillance, clinical care, logistics, and coordination mechanisms

- Integrates public, private, and community health sectors
- Ensures standardised protocols and coordinated response across institutions
- Guides preparedness, response, surge management, and recovery phases
- Supports interdepartmental coordination and multi-sectoral collaboration
- Acts as a unified framework for all stakeholders involved in pandemic management

1.4.2 Objectives

1. Early detection of emerging infections
2. Rapid triage, isolation, and treatment
3. Protection of healthcare workforce
4. Maintenance of essential hospital services
5. Efficient resource and surge management
6. Integrated coordination with district & state systems

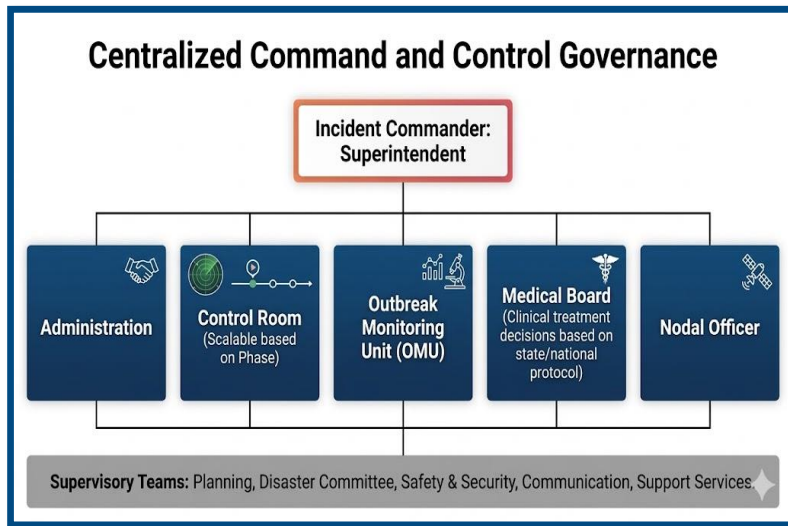
2. Governance & Command Structure

2.1 Pandemic Preparedness & Response Committee (PPRC):

The pandemic preparedness and response committee is led by the Principal or Medical Superintendent and is the commander of the multidisciplinary team.

2.2 Multidisciplinary Team:

Role	Key Responsibilities	Assigned Person	Deputy
Incident Commander	Overall leadership, intersectoral coordination	Principal/Medical Superintendent	RMO
Operations Lead	Clinical services, wards, ICUs, triage	Professor & Head – General Medicine	Professor Anesthesiology/pulmonology
Logistics Lead	Oxygen, PPE, equipment, transport	Deputy Medical Superintendent	ARMO
Planning Lead	Surge forecasting, bed expansion	Professor & Head – Community Medicine	RPEID cell Coordinator
Finance Lead	Emergency procurement, budgeting	Accounts Officer	Senior Accounts Assistant



2.3 Outbreak Monitoring Unit (OMU):

Outbreak monitoring unit is the specialized cell for identifying emerging/re-emerging infections, triaging, and multiplex PCR diagnostic platforms.

OMU of Government Medical College Thiruvananthapuram is constituted by

Convenor: Deputy Medical Superintendent

Members:

- HOD Community Medicine
- Professor General Medicine Department
- HOD Infectious Diseases
- HOD Microbiology
- RPEID cell Coordinator
- Associate Professor Forensic Medicine
- Assistant Professor Pathology
- Assistant Professor Paediatrics
- Assistant Professor Medical Neurology
- Chief Nursing Officer

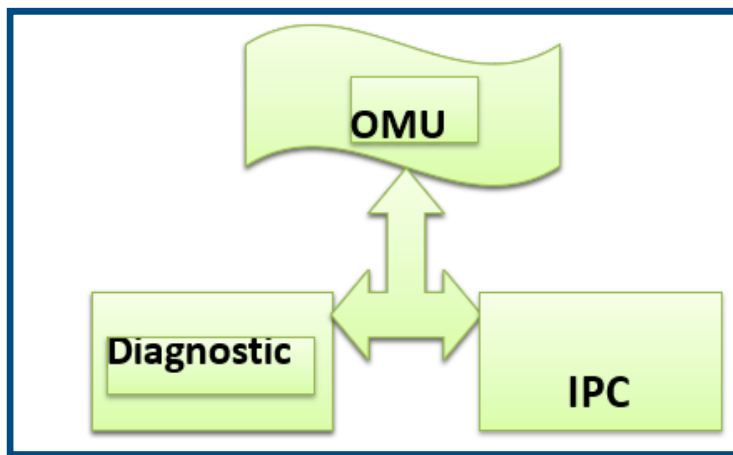
OMU focuses on

- A. Creation of a framework for identification of Emerging / Re-emerging infections at the earliest so as to institute optimal IPC measures without delay.
- B. Development of effective Triaging facilities in the casual to optimize IPC measures with regard to standard and Transmission based precautions.
- C. Creation of a framework for rapid diagnosis through the platform of Multiplex PCR to identify emerging infections at the earliest so as to ensure implementation of IPC measures at the earliest.
- D. Creation of a framework to select deaths due to unidentified infections for pathological autopsy for diagnostic purpose.

These patients should be evaluated in detail. If the diagnosis cannot be ascertained by routine investigations done to rule out Tropical fever syndromes [leptospirosis, scrub typhus, dengue, malaria, H1N1 etc] and expected community acquired infectious syndromes, OMU has to be alerted especially if there is history of

- 1. Zoonotic contact.
- 2. Clustering of cases in the family/locality.
- 3. Travel to forest areas /outside state.
- 4. Fever death without a diagnosis

The OMU has two responsibilities-Diagnosing emerging infections at the earliest and second to institute appropriate Infection Prevention and control measures at the earliest



Alert levels at times of disease outbreaks

- Clinical alert
- OMU alert
- Isolation and IPC measures
- Multiplex PCR platform
- Alert withdrawn

2.4 Institutional Medical Board:

Chair: Medical Superintendent

Convenor: HOD General Medicine/ HOD Paediatrics

Members:

- HOD – Infectious Diseases Department
- HOD – Pulmonary Medicine
- HOD – Neurology
- HOD – Cardiology
- HOD – Gastroenterology
- HOD – Critical Care Medicine/ Anaesthesiology
- HOD – Emergency Medicine

- viii. HOD – Microbiology
- ix. RPEID Cell coordinator

Functions:

- Daily case load review
- Clinical decision-making
- Bed & oxygen allocation
- Staff deployment
- Surge activation decisions
- Coordination with district administration

3.Situational Analysis & Resource Mapping

3.1 Infrastructure Audit:

The clinical services are delivered through a network of facilities spread among different blocks namely Medical College Hospital block, Sree Avittom Thirunal Hospital, Super Specialty Block, Multi-Specialty Block, Regional Institute of Ophthalmology and Institute of Chest Disease Pulayanarkotta along with two training centres namely Urban Health Training Centre, Pangappara and Rural Health Training Centre, Pangappara, Total infrastructure facilities mentioned below. As per the pandemic preparedness escalation plan existing bed capacity distributed among different specialities and departments. It can be escalated to maximum of 3632 IP beds, 389 ICU beds and 1350 oxygen beds.

MCH	SAT
Total Ward-26	Total wards-24
Total Allotted Bed-1952	Total Allotted Bed-767
Total functioning bed-2115	Total functioning bed-1157
Total No of ICUs-24	Total ICU bed-110
Total ICU bed-279	Total number of rooms-105
Total number of single rooms-114	Total ventilators-64
Total ventilators-147	Total oxygen beds-45
Total oxygen beds-1350	Total Beds in super speciality -110
Total Beds in super speciality -291	Total Casualty Bed-10
Total Casualty Bed-103	RIO (Regional Institute of Ophthalmology)

Total beds in Emergency ward-22	Total Allotted Bed-250
Bed strength [Yellow zone]-53	Institute of chest disease
Bed strength [Green zone]-12	Total Beds-110
Bed strength [Red zone]-12	
Bed strength [Black zone]-Trolley space,3 beds	

3.2 Human Resource Pool

Mapping of sanctioned vs. present staff (Professors to temporary staff) and a three-tiered staffing plan (core, reserve, volunteer).

Sl No	Category	Sanctioned	Present	Gaps	Mobilization Strategy
1	Faculty (Clinical)	461	360	101	Call back from leave; redeploy from non-critical depts.
2	Residents (SR/ Academic JR/ NAJR)	Senior Residents-77 Academic JR - 312	389	0	Recruit additional temporary doctors through HDS/schemes.
3	Nursing Staff including MCH, SAT and RIO (Permanent)	1125	1117	8	Shift-based duty (6-8 hr shifts); cancel all leave.

4	Nursing Staff (Contract) HDS	87	87	0	Recruitment of emergency temporary nursing staff.
5	ICU/Transplant Trained Nurses	267	267	0	Prioritize for Level 3 (Crisis) ICU surge.
6	Nursing Assistants	450	440	10	Deploy for high-touch surface cleaning and food delivery.
7	Hospital Attendants (Gr 1 & 2)	498	495	3	Training on 1% hypochlorite use and trolley disinfection.
8	Ancillary (Lab, Rad, Pharm)	133 Pharmacist-70, Lab Technician- 66	133	0	Maintain a standby duty roster for 24/7 coverage.
9	Security & Transport Staff	18	16	2	Lead "Red Channel" movement and patient data entry.
10	Volunteer / Reserve Pool	~2800	2800	NA	Identify retired HCWs and those in non-clinical roles. Medical and paramedical students can also be mobilised.

3.3 Equipment & Logistics:

Total Liquid Medical Oxygen (LMO) – 50 KL
LMO-40 KL[MCH],10 KL[SAT]
Oxygen generator plant-2000L/mt [MCH]
D type cylinder-875 [MCH+SAT]
B type cylinder-650 [SAT+MCH]
HFNC-100

4. Graduated Response Framework (Three-Tier Model)

A structured proportionate response strategy ensuring that hospital adapts capacity to demand while maintain routine functionality as long as possible

4.1 Escalation Triggers

Defined by disease epidemiology, ICU occupancy, bed availability, and staff absenteeism.

Primary Escalation Triggers

- Disease epidemiology: Basic reproduction number [Ro]
- ICU occupancy
- Isolation Bed availability
- Staffing levels
- Resource Strain

Escalation strategy overview

Response	Scenario	ICU occupancy	Emerging infection cases	Response
Conventional response	Best case scenario	<70%	<50/day reaching ER	Conventional – Tier 1 <i>Business as usual</i> Operate within normal facility standards Minor adjustments to space and staff Standard care fully

Contingency response	Moderate case scenario	70-90%	50-100/day	Contingency- Tier 2 <i>Functionally equivalent</i> Adapt space, staff and supplies Surge annexes activated Care is functionally equivalent to standards
Crisis response	Worst case scenario	90%	>100/day	Crisis- Tier 3 <i>Sufficiency of Care</i> Extreme resource scarcity Maximize population benefit Crisis standards of care active

Pandemic response level

	Level 1 Conventional	Level 2 Contingency	Level 3 Crisis
Definition	Usual standard of care	Demand exceeds standard resources	Resource severely depleted

Function	Hospital functions within designed capacity with minor adaptations	Adaptive spaces/staffing used to maintain equivalent outcomes	Focus shifts to population-based outcomes. Crisis standards of care (CSC) activated
Key metrics	ICU occupancy $\leq 70\%$ Supply days ≥ 30 Absenteeism $< 10\%$	ICU occupancy 70-90% Supply days 7-29 Absenteeism 10-20%	ICU occupancy 90-95% Supply < 7 Absenteeism $< 20\%$
Operational status	Elective surgery ongoing Standard staff ratios Normal visitor policy	Emergency Medicine boarding > 4 hours Surge annexes activated Electives prioritized/paused	O2/ ventilator constrain Crisis standard of care active Non-traditional spaces

4.2 Level 1 - Conventional (Best Case)

Standard facility standards, minor staff adjustments, and full maintenance of elective services.

Operational Goal: Maintain standard of care without dilution of expertise while maximizing routine elective services.

Trigger Points	Institutional Action Points
Cases: No confirmed local cases OR sporadic imported cases without local transmission.	Surveillance: Activate ILI/SARI screening at entry points and mandatory IHIP reporting.
Admission: Baseline hospital and ICU admission levels.	Infrastructure: Identify "Red Channel" entry points and start planning for expansion of oxygen beds and ICUs by 20%.
Staffing: Absenteeism <10%.	Training: Conduct refresher training on IPC, PPE donning/doffing, and simulation mock drills.
Logistics: PPE and drug supply days >30.	Logistics: Assess and enhance centralized/decentralized Liquid Medical Oxygen (LMO) to full reserve capacity.

Best case optimization

At this scenario, there is stable or declining community transmission where hospital resources exceed demand. The focus is on surveillance, preparedness drills and maximizing routine elective services while maintaining readiness for surge

Scenario 1 focus on index case identification

Index case of an emerging infection reaching Emergency department

e.g., Mpox, suspected Nipah, Haemorrhagic fever with travel history, ARDS with travel history, SARI with zoonotic link etc

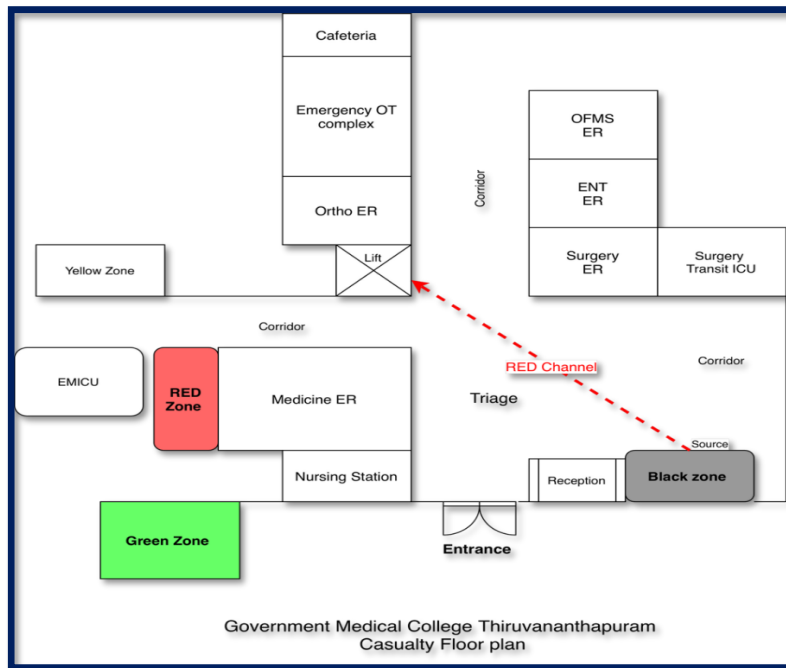
Action taken

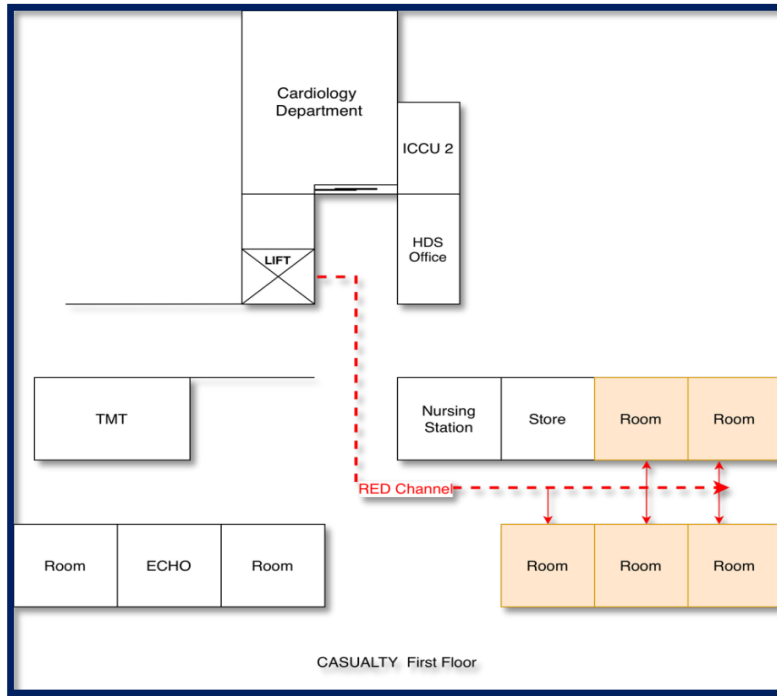
- Triaging from ER
- Infection control link nurse in the ER will be informed and will be isolated in black zone.
- ICN and MO in charge of the emergency room will be informed.
- Isolation in ER-black zone.
- Red channel creation.
- Isolation room-Medical pay ward
- If ICU care needed-Isolation ICU
- De-escalation/Escalation strategy based on test results.
- Escalation plan – SAT – OBG- Adult isolation beds- 20, Adult ICU bed- 2, Adult Ventilator bed- 2, Adult bed with Oxygen support-3
- Pediatrics- Isolation beds- 15, ICU bed- 4, Ventilator bed- 4, Beds with Oxygen support-3
- Institutional Medical Board will oversee treatment and discharge.
- HICC will monitor-triaging, red channel creation, isolation, contact tracing in ER using CCTV, linen and laundry management, exposed staff monitoring, visitor/bystander strategy, food requirements, disinfection and sterilization practices, need for Imaging [Xray/CT/MRI].
- Written down protocols for all these in IPC Manual.
- Infection Prevention and Control measures without creating panic among patients and bystanders
- Alerting the superintendent and OMU (Outbreak Monitoring Unit)

Implement

- Management protocol
- Discharge policy and back referral
- Risk communication, patient and stakeholder communication
- Surveillance
- A designated person and a designated place for Media communication

Floor plan for RED channel





4.3 Level 2 – Contingency (Moderate Case)

Containment activation of surge annexes, prioritizing/pausing electives, and adaptive staffing.

Operational Goal: Adapt space, staff, and supplies to maintain care functionally equivalent to standard care.

Trigger Points	Institutional Action Points
Cases: Confirmed local transmission and rising suspected cases in OP/IP departments.	Hospital Reorganization: Activate surge annexes (e.g., Ward 9/ 10 or Pay wards) and create barricaded triage areas.

ICU Occupancy: 70–90%.	Clinical Operations: Regulate non-pandemic care and pause/reduce non-urgent elective surgeries.
District Load: Hospital admissions due to the pandemic reaching 10% of total district admissions.	HR Strategy: Implement shift-based duties (6–8 hours) and deploy float pools or tiered staffing models.
Logistics: PPE supply days 7–29; ventilator/O2 constraints beginning.	Logistics: Fill 100% of oxygen reserve capacity and look for potential sources of capacity enhancement.

Contingency

Outbreak has already been flagged. Eg Nipah, Avian influenza etc

Action taken

- Triage will be in Deluxe payward.
- Two floors will be set apart for isolating patients.
- ICU care-isolation ICU.
- Escalation strategy-All floors of deluxe pay ward and pay ward as per surge trigger.
- MSB block for ICU care as per threshold trigger matrix.
- Isolation wards.
- Escalation plan- OBG- Ward 1 and 2
- Pediatrics- Ward 4 and 14
- Institutional Medical Board will oversee treatment and discharge.

- HICC will monitor-triaging, red channel creation, isolation, contact tracing, occupational safety records, specimen transfer, linen and laundry management, exposed staff monitoring, visitor/bystander strategy, food requirements, disinfection and sterilization practices, need for Imaging [Xray/CT/MRI].
- Oxygen infrastructure management, Ventilator readiness, Negative pressure settings-Biomedical
- PPE other logistics management-Store superintendent with KMSCL
- Ambulance management team
- Mortuary management.
- Written down protocols for all these in IPC Manual.
- Control room for intra-hospital and inter-hospital referral service coordination – with telephone and computer system with internet facility

Patient transport protocol during pandemics

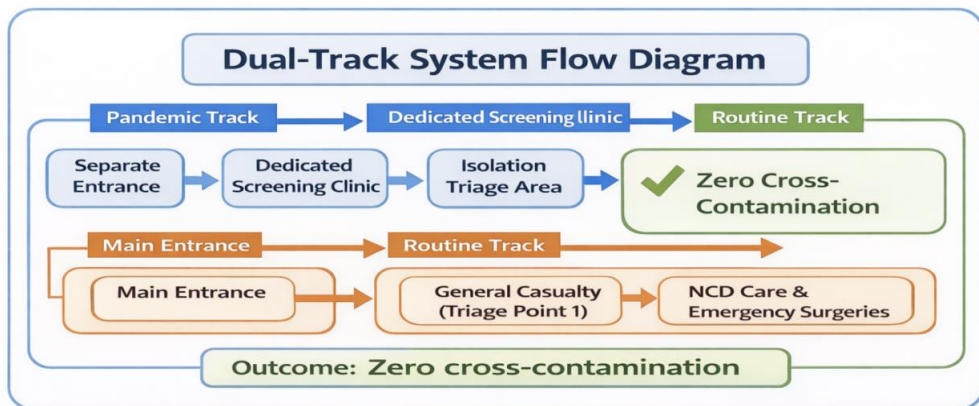
Category	Intra-Hospital Transport	Inter-Hospital Transport
Follow RED CHANNEL Protocol		
Protocol	• Transport from Emergency to GW or ICU; transport from GW to ICU • Transport for radiology scans	For advanced ICU services, e.g. ECMO
Patient Safety	• Early transfer of deteriorating cases to ICU • Minimize need for scans (use bedside ultrasound)	• Early transfer of deteriorating cases • Clear thresholds for transfer and workflows for non-ECMO centres
Pre-Transport	Assess deteriorating patients for intubation prior to transport	• Assess need for intubation prior to transport (preferably in ICU under controlled settings with PPE and PAPR)

During Transport	• Accompanied by at least a doctor and nurse trained for emergencies • Continuous monitoring (BP, pulse, SpO₂) • End-tidal CO₂ monitoring in intubated patients • Transport monitor with defibrillation function or separate defibrillator	• Prepare equipment and drugs for emergencies (e.g. cardiovascular collapse, hypotension). • Gentle bagging with BMV fitted with HEPA filter to reduce aerosolization.
Safety of HCW & Staff	• All staff mask-fitted for N95 respirators • Full PPE prior to transport • Patient to wear surgical mask • Avoid open breathing circuits, HFNO, or non-invasive positive pressure • Add HEPA filters to ET tubes if bagging via BMV • Add HEPA filters to expiratory limbs of ventilators • Avoid unnecessary circuit disconnections • Scans preferably at end of day for terminal cleaning	• All staff mask-fitted for N95 respirators and trained in PAPRs • Full PPE and PAPRs if available • Spare battery packs for PAPRs • Add HEPA filters to ET tubes and ventilator expiratory limbs • Minimize ET tube disconnections • Wind down ambulance windows if possible
Bystander Safety	Dedicated transport route planned Security team clears route ahead, wearing surgical masks	Same as intra-hospital
Rescue Contingency Plans	—	• Intubation best done in ICU under controlled settings • Physician in PPE and PAPR • Emergency preparedness for collapse/hypotension

		• Gentle bagging with HEPA filter
Post-Transport Decontamination	—	• Housekeeping team in PPE performs terminal cleaning of route/elevator • Staff doff PAPRs/PPE at destination • PAPRs disinfected with alcohol wipes • Staff don new PPE for return journey • PPE doffed in nearest clinical area (e.g. ambulance bay) • Terminal cleaning of ambulance upon return

Dual stream triage strategy

- Patients coming with ILI/Encephalitis – Emergency Response will be triaged to the Green zone-from there Red channel.



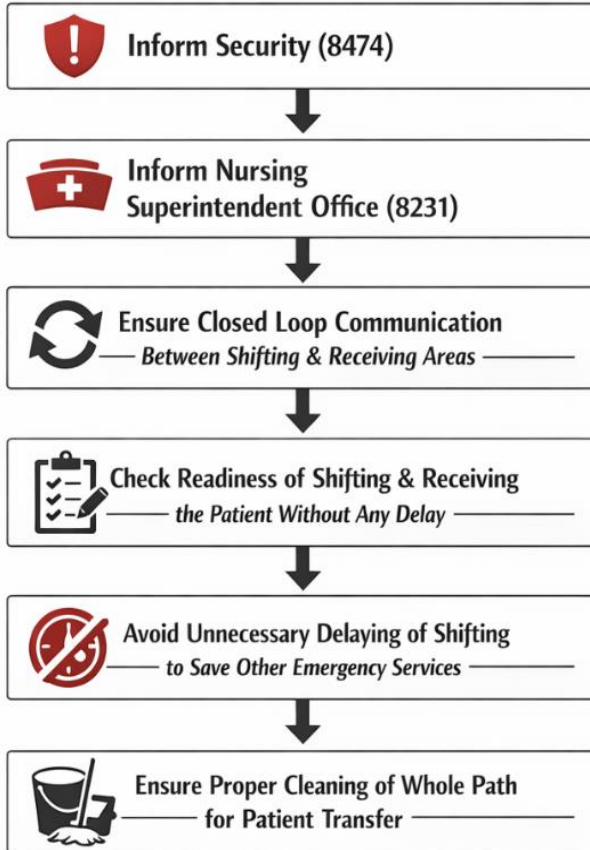
Red channel protocol and flow chart

Operation of red channel guidelines for transporting suspected/positive pandemic cases among different departments of MCH, Trivandrum

- Inform security officer in charge regarding the opening of red channel as per the order of Medical Officer in charge.
- Inform the same to Nursing Officer in charge and ICN.

- Arrange PPE kit to ambulance driver.
- The staff who are going to receive the patient must wear PPEs and keep ready the trolley
- All items or drugs needed should be communicated over phone and must be ready.
- Accompanying staff must wear PPE if the patient is positive, he/she should wear PPE, otherwise he/she should wear N95.
- For ICU patients on ventilators, at least cover the patient with surgi kit/drape. Ensure the availability of NRBM [Non rebreather mask] for transport.
- Lift operator must be ready with PPE.
- Lift should be blocked and passengers must be restricted till the staff/patient returns.
- After shifting the patient, lifts/trolley should be cleaned by attenders with 1% hypochlorite solution.
- Shifting area or reviewing area trolleys must be thoroughly washed with 1% hypochlorite
- Ensure the doffing of ambulance driver and cleaning of the ambulance.
- Ensure proper recording of shifting/red channel
- Ensure closed loop communication in each step so that there is no delay in the whole process.

RED CHANNEL FLOW CHART



Prototype isolation areas at GMCT

ICUs

STEP DOWN ICU

SICU

TRAUMA ICU

MDICU

ICCU-3

MICU 3/ SUSPECT ICU

WARDS

Ward 1

Ward 2

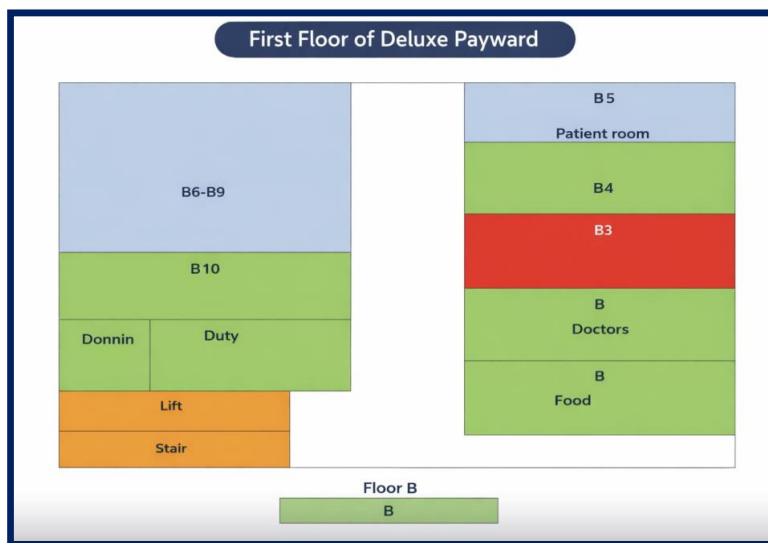
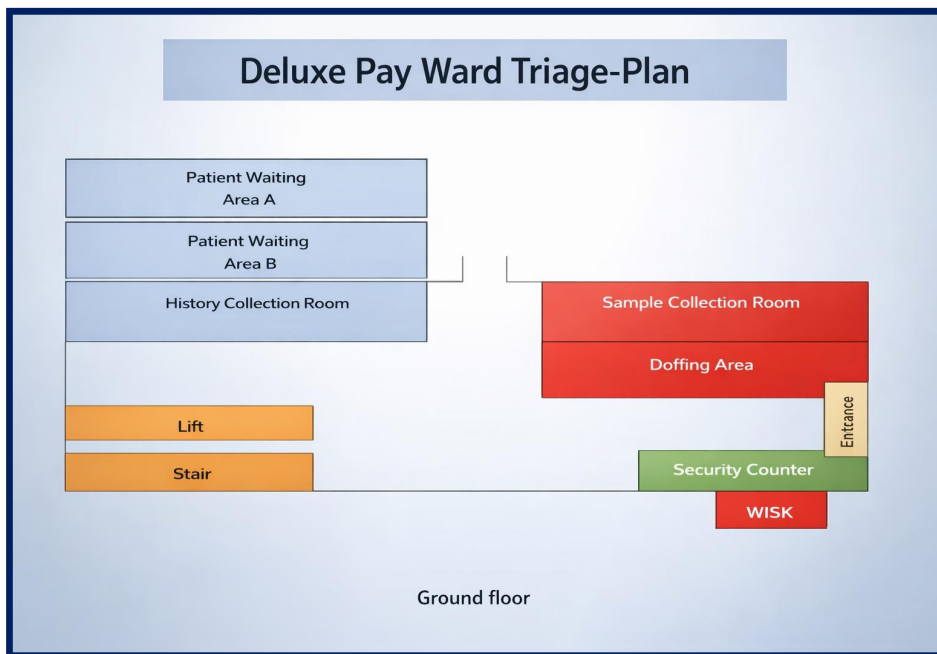
Ward 6

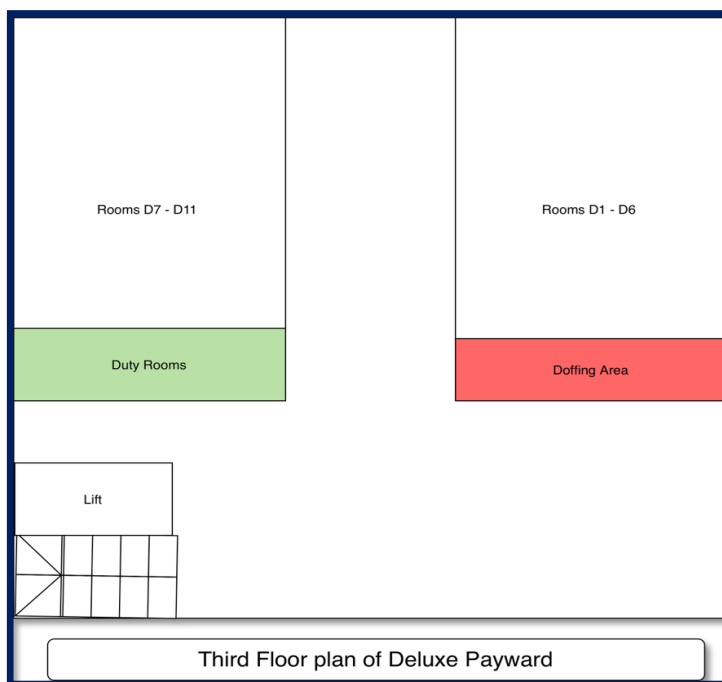
Ward 14

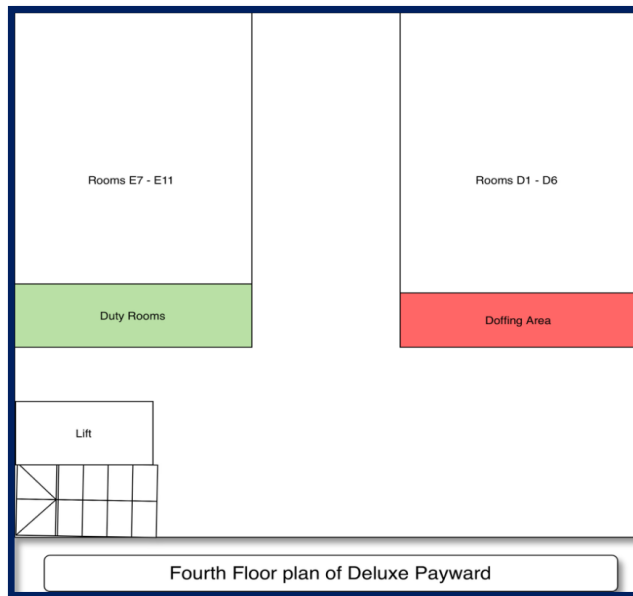
Ward 28

PW 400,500,600

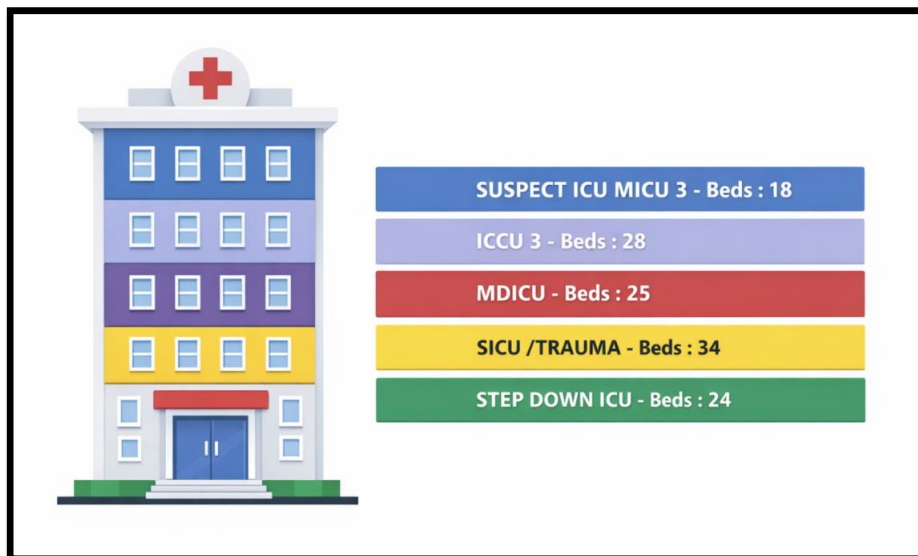
DELUXE PAYWARDS - B TO F







ICU isolation areas



4.4 Level 3 – Crisis (Worst Case)

Activation of Crisis Standards of Care (CSC), extreme resource scarcity, and use of non-traditional spaces.

Operational Goal: Maximize population benefit under extreme resource scarcity; activation of Crisis Standards of Care (CSC).

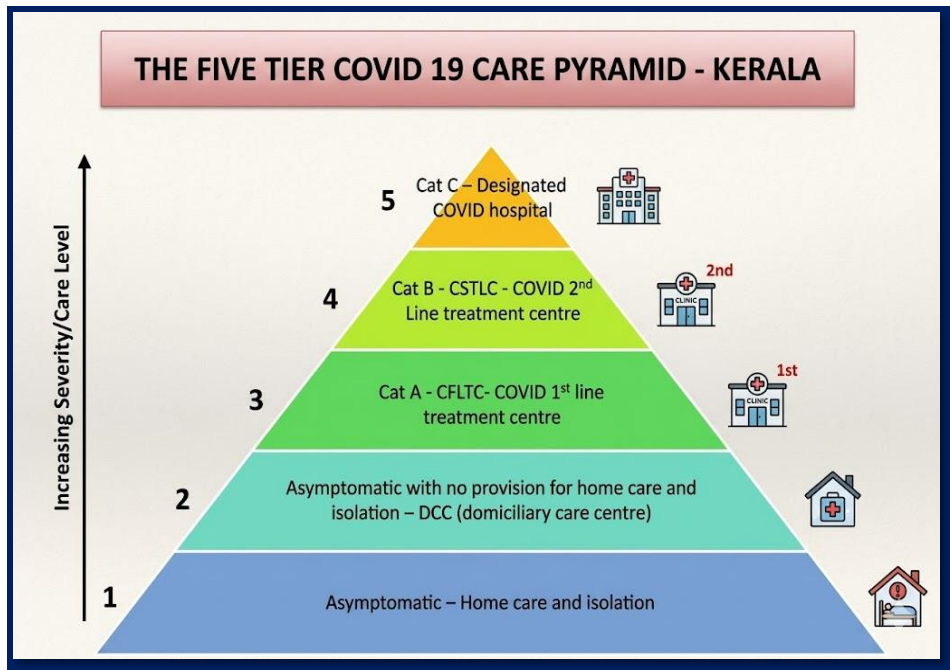
Trigger Points	Institutional Action Points
Cases: Surge in confirmed admissions; OP load crosses the threshold level.	OP/IP Reorganization: Stop general OP services; convert waiting or non-patient areas into makeshift wards.
ICU Occupancy: >90% (System Overwhelmed).	Critical Care: Activate earmarked pandemic beds in private institutions for government-referred patients.
District Load: Pandemic admissions reaching 25% of total hospital admissions in the district.	Services: Switch to emergency non-pandemic care only; discharge all stable/recovering patients.
Staffing: Absenteeism >20%.	HR Strategy: Large-scale recruitment of temporary staff; redeployment of non-clinical/academic staff to clinical work.
Logistics: PPE supply <7 days; spare ventilator capacity <10%.	Networking: Full district ICU pooling and activation of field hospitals/CSLTCs.

Worst case: crisis surge

Contingency and crisis response

- Discharge elective cases.
- Discharge stable recovering patients.
- Stop admitting non-emergency patients.
- Convert waiting/non-patient care areas into makeshift wards.
- Surge capacity in each area
- Non-clinical and paraclinical faculties
- Non-medical staff (academic and non-academic)
- Private sector engagement

Five Tier care Pyramid area



Synchronizing Institutional Response based on epidemic surge in District as per threshold trigger matrix

Threshold 1

Trigger points: Baseline-Hospital admission and ICU admission [time period].

- Doubling of hospital admission due to X.
- 50% increase in ICU admission due to X.

Action points

- **Infrastructure Preparedness:** Start planning for expansion of
 - a. Frontline Infrastructure: Identify 1st Priority Field Hospitals. eg CSLTC (Other than the education institutions)
 - b. Hospital Infrastructure: Increase Oxygen Beds, ICUs and Ventilators by 20%
 - c. HR alert- start preparing HR pool from Dental, ISM, Homeo
- **Surveillance Measures:**
 - a. Identify Clusters and Micro-Containment Zones
- **Regulation measures:**
 - a. Implement restrictions as per the DMD orders
- **Testing Strategies:**
 - a. Increase testing in clusters and do isolation
 - b. From Clusters/Zones – random samples for Genomic Analysis
- **Liquid Medical Oxygen Stocking:**
 - a. Assess Stocks of centralised and decentralised LMO
 - b. Enhance stocks: Ensure full reserve capacity
- Drugs, consumables stocking
- eJagratha – Data management updation by DPMSU

Threshold 2

Trigger points

- Doubling of ICU admission due to X
- Hospital admissions due to X reaching 10% of total hospital admissions of the district.

Action points

- **Infrastructure Preparedness:**
 - a. Frontline Infrastructure: Activate CSLTC as per the requirement
 - b. Hospital Infrastructure: Increase Oxygen Beds, ICUs and Ventilators by 30%
 - c. Regulate non-COVID care
- **Surveillance Measures:**
 - a. Enhance identification of Clusters and Micro-Containment Zones
- **Regulation measures:**
 - a. Implement restrictions as per the DMD orders
- **Testing Strategies:**
 - a. Increase testing in clusters
 - b. From Clusters random samples for Genomic Analysis
- **Liquid Medical Oxygen Stocking:**
 - a. Enhance stocks: Fill up 100% of reserve capacity
 - b. Look for potential sources of capacity enhancement

Threshold 3

Trigger points

- X hospital admission reaching 25% of the total hospital admission of the district

Action points

- **Infrastructure Preparedness:**
 - a. Frontline Infrastructure: Activate CSLTC and other Field Hospitals as per the progression of pandemic
 - b. Hospital Infrastructure: Use earmarked pandemic beds in Community Health Centres, Taluk Head Quarters Hospitals, General Hospitals, District Hospitals and Medical Colleges
 - c. Regulate non-pandemic care appropriately and switch to emergency Non Pandemic Care
 - d. Activate pandemic care in private healthcare institutions for Government referred patients only after crossing 70% occupancy in the Government Hospitals in the district
- **Surveillance Measures:**
 - a. Enhance identification of Clusters and Micro-Containment Zones
- **Regulation measures:**
 - a. Implement restrictions as per the DMD orders
- **Testing Strategies:**
 - a. Syndromic management
- **Liquid Medical Oxygen Stocking:**
 - a. Streamline and strengthen Oxygen War Room
 - b. Re-confirm full stocks of centralized and decentralized LMO

Resource Allocation Strategy

1. Best Case scenario:

Triggers and response: Operational goal is to maintain standard of care without dilution of expertise

- Strategic goal-preserve routine functions while optimizing surge capacity.
- Prioritization of Emergency and trauma to 100% capacity, Cancer care and dialysis
- Routine cases-maximize care
- Patient flow regulation with 40% discharges by 11 am
- Bed turn around-ICU transfer in < 60 min
- Cohorting pathways -Dual stream triage with structured work flows with parallel pathways based on initial assessment of severity to optimize flow in emergency department
- Clean zones-surgery/dialysis/cancer care
- Supply chain visibility-PPE daily stock, Medicines-daily stock
- Workforce readiness- cross-training programs.
- Just in time [JIT] refreshers.
- Workforce Wellness-Mandatory breaks, peer support
- Operational rhythm-daily safety huddles, staff health and quality checks.

Activation triggers

Activation time line	0-72 hours	3-7days	2-6weeks
	Confirm readiness and valid triggers	Exercise surge annexe paper	Conduct unit Micro simulation

Activities	Run rapid communication drill	Verify supply vendors & O2 capacity	Refine dashboard matrix
	Verify staff contact lists	Review elective surgery schedule	Redeployment of staff

Key performance indicators

ICU occupancy	Emergency Dept boarding	Ventilator use	PPE supply	Staff absenteeism
Target $\leq 70\%$	Target <4hours	Target <60%	Target ≥ 30 days	Target <10%

Moderate scenario

Triggers and response

- Clinical operations-pause non urgent electives.
 - Activate surge spaces.
 - Cohort strategy adopted in Wards

Workforce scaling strategies-

- Deploy float pools.
- Tiered staffing-team based nursing model.
- Physician oversight-activating tele-ICU
- Redeployment- of non-clinical workforce to clinical work
- Logistics-supply conservation strategies, oxygen capacity, waste management.

Key performance indicators

ICU occupancy	Emergency Dept boarding	Ventilator use	PPE supply	Staff absenteeism
Target 70-90%	Target >4hours Steady increase in admission volume over 72-hour period	Target <60%	Target 7-29days	Target 10-20%

2. Worst case scenario

System overwhelmed

- Demand vastly outstrips supply leading to stringent capacity constraints
- Standard of care cannot be maintained
- Activation of crisis standards of care and extreme surge protocols required to prevent system collapse

Key performance indicators

ICU occupancy	Emergency Dept boarding	Ventilator use	PPE supply	Staff absenteeism
Target $\geq$ 90%	Target >4hours Steady increase in admission volume	Spare capacity <10%, repurposed	Target <7-days	Target >20%

Records and registers for emerging infections

- IP Register
- Swab Collection Register
- Diet Book
- Report Book
- Transfer In- Transfer Out Register
- Discharge Register
- Inventory Register * Medicine, Consumable, Stationeries, Chemical And Surgical Equipments

- Waste Management Register
- PPE Usage Register
- Attendance Register
- Training Register
- Red Channel Register
- Record for 1% Hypochlorite Solution

Regular services

- Non-serious cases should be evaluated and may be discharged to the local hospital or home.
- Evaluate non-infectious stable patients in the ICU and shift to the ward
- Strict referral should be followed in OP and casualty.
- Ensuring the continuity of essential hospital services for those critically ill and other vulnerable groups (eg. Pediatric, elderly and disabled patients)
- Media communication should be sent

Human resource management

- All involved health care providers including housekeeping personnel, Security personnel, and ambulance drivers will be given refresher training
- Mock drills will be planned
- All categories of staff who are on leave should be called back.
- The Nursing Superintendent should be able to prepare a list of nursing staff who may be made available at short notice. Should be able to mobilise additional nursing staff from non-critical areas.
- Other Staff: Duty roster (including those on standby duty) of all ancillary medical services (e.g. Radiology, Laboratory, Blood Bank) and also other hospital services (e.g. housekeeping, sanitation, stores, pharmacy, kitchen, etc.) should be available with the duty officer/ hospital administrator.
- A log of all category HCW including ambulance drivers, security personnel etc maintained with regard to training imparted in standard and transmission-based precautions and fire safety protocols

5. Operational Standard Operating Procedures (SOPs)

5.1 Triage & Red Channel Protocol:

5.1.1 Dual-stream triage System: -

- *Pandemic track with separate entrance* - Dedicated screening clinic Isolation triage area.
- *Routine Track:-* Trauma, Emergency surgeries, non-communicable disease (NCD) care Outcome: Zero cross-contamination.

5.1.2 Red Channel Protocol:

Operation of red channel guidelines for transporting suspected/positive COVID-19 PATIENTS among different departments of MCH, Trivandrum

- Inform security officer in charge regarding the opening of red channel from (.....) to (.....) as per the order of Medical Officer in charge.
- Inform the same to Nursing Officer in charge and ICN.
- Arrange PPE kit to ambulance driver.
- The staff who are going to receive the patient must wear PPEs and keep ready the trolley
- All items or drugs needed should be communicated over phone and must be ready.
- Accompanying staff must wear PPE if the patient is positive, he/she should wear PPE, otherwise he/she should wear N95.
- For ICU patients on ventilators, at least cover the patient with surgi kit/drape. Ensure the availability of NRBM [Non rebreather mask] for transport.
- Lift operator must be ready with PPE.
- Lift should be blocked and passengers must be restricted till the staff/patient returns.
- After shifting the patient, lifts/trolley should be cleaned by attenders with 1% hypochlorite solution.

- Shifting area or reviewing area trolleys must be thoroughly washed with 1% hypochlorite
- Ensure the doffing of ambulance driver and cleaning of the ambulance.
- Ensure proper recording of shifting/red channel
- Ensure closed loop communication in each step so that there is no delay in the whole process.

5.2 Patient Care Equipment:

- Dedicated instruments must be used for suspected patients and confirmed cases.
- Staff on duty must check the availability of the equipment in each shift.
- Proper cleaning and disinfection is necessary.
- Thermometer, stethoscope, glucometer, BP apparatus, Pulse oximeter etc. to be the dedicated patient care equipment
- The HCW must wear PPE properly while reprocessing instruments.
- Disposable items must never be reused.
- Heat stable items after decontamination using 1% bleach solution for 10min, clean with water & detergent and sterilize by autoclaving. Heat sensitive items can be sterilized by ETO sterilizer or Sterrad.
- All medical/surgical/dental devices must be sterilized according to manufacturer's instructions.

5.3 Infection Prevention & Control (IPC):



Standard Operating Procedures for infection Prevention & control (IPC)

Published

- A pandemic-specific IPC preparedness manual.
- Abridged one for Staff Nurses.
- Manual in Malayalam for cleaning staff, security, etc

Planned

- Patient admission
- Patient management
- Patient discharge/back referral
- Bystander management-Restrict visitors (if indicated) and maintain a log of all visitors with their address for tracing if need arises
- Communication
- Dead body management
- Maintain a log of all health care personnel providing care

5.4 Environmental & Engineering Controls

HEPA filtration, negative pressure maintenance and 12 Air Changes per Hour (ACH) for AIIRs.

Hospitals usually have sub-optimal facilities to provide airborne infection isolation for large numbers of patients with airborne infectious diseases presenting in a short time period. Heating, ventilation, and air conditioning (HVAC) expertise is essential for proper environmental management when planning control of airborne infectious disease outbreaks

Engineering controls

- These are physical or mechanical measures used to reduce the risk for transmission of airborne infectious diseases. It includes ventilation, filtration, ultraviolet germicidal irradiation, AIIRs, local exhaust ventilation devices etc.
- The time required for removing a given percentage of airborne particles from a room or space depends on the number of air changes per hour (ACH).
- Filtration reduces the risk for transmitting airborne infectious agents. Filters for clinical spaces should be able to remove at least 90% of particles (0.5 microns in size and larger)
- Poorly designed or maintained ventilation systems can increase the risk of health-care-associated infections transmitted by airborne pathogens due to incorrect airflow and poor maintenance of the system. A higher ventilation rate can provide a higher dilution capability and consequently potentially reduce the risk of airborne infections. Mechanically ventilated areas In health-care facilities where a mechanical ventilation system is available, negative pressure should be created to control the direction of airflow. The ventilation rate should be 6-12 ACH, ideally 12 ACH for new constructions, with a recommended negative pressure differential of $\geq 2.5\text{Pa}$
- For patient care areas in hospital without adequate natural or mechanical ventilation-Installation of exhaust fans will be helpful.

Installation of high-efficiency particulate air (HEPA) filters: HEPA filters (either ceiling mounted or portable) can be effective in reducing/lowering concentrations of infectious aerosols in a single space. Health-care facilities that choose to use HEPA filters should follow the manufacturer's instructions, including on recommended cleaning and maintenance procedures for HEPA filters

- Respiratory infections like COVID-19 positive patients and patients with COVID-19 related symptoms are to be accommodated in designated "Airborne Infection Isolation Rooms (AIIR)" in hospitals to control spread of the disease. However due to the surge in the number of such patients, healthcare facilities may not have adequate number of "AIIR" rooms to accommodate all such patients. Hence, healthcare facilities would need to convert their existing patient rooms or ICUs into COVID-19 patient rooms or COVID-19 ICUs to avoid risk to other patients as well as HCWs.
- AIIRs are single-patient rooms at negative pressure relative to the surrounding areas, and with a minimum of 6 air changes per hour (12 air changes per hour are recommended for new construction or renovation). Air from these rooms should be exhausted directly to the outside or be filtered through a high-efficiency particulate air (HEPA) filter directly before recirculation.
- To convert an existing patient room or ICU into a COVID-19 patient area, it is first necessary to convert the room into a non-recirculatory system (100% once through system) ie, the room should be negatively pressurized in relation to the corridor. On an emergency basis, this can be achieved by blanking (blocking) off the return air vents in the COVID-19 patient room. An independent exhaust blower shall be provided to extract the room air and exhaust out into the atmosphere
- The recommended air exchange rate for AIIRs is 12 air changes per hour (ACH). The position of the extract air in the room shall be just above the head of the patient's bed. The exhaust air is most likely to contain particles carrying a viral load and hence a suitable technique should be deployed to prevent the spread of infections.

Treatment of exhaust air can be done preferably by HEPA filtration. In diagnostic dept. ventilation rate required is 10 air change /hour. In operation room temperature of 23 to 25°C, 50% humidity and 15-20 air change per hour is required.

Heating, ventilation and air-conditioning (HVAC): HVAC has a pivotal role in determining infection rates in the intensive care unit (ICU). Essential functions of HVAC system include heating (adding heat to raise or maintain temperature), cooling (removing heat to lower or maintain temperature), humidifying (adding water vapour), dehumidifying (removing water vapour) in order to maintain the moisture content of the air, filtering (removing dust particles, biological contaminants like bacteria, viruses and fungi), ventilating (air change rates between outdoor) and air distribution (velocity, flow pattern, direction of movement and distribution patterns). These functions result in air conditioning, which aid in the prevention of contamination and cross-contamination and environmental protection along with operator protection. Airborne diseases have been linked to poorly functioning HVAC system: improper function of temperature control, humidity control, air distribution and filtration of HVAC systems.

Temporary Negative Pressure Isolation (TNPI)

TNPI is considered when airborne infection isolation is needed and there is insufficient AIIRs when an outbreak of an airborne infectious disease with large numbers of communicable patients seeks admission. So temporary isolation is designed to protect patients and staff from contracting or transmitting highly infectious diseases. HEPA filter is used to exhaust room air outside through the window. HEPA machine in this application is to clean contaminated air and induce negative pressure in the room. To prevent pulling air from return air system, the exhaust/return grilles should be sealed with tape.

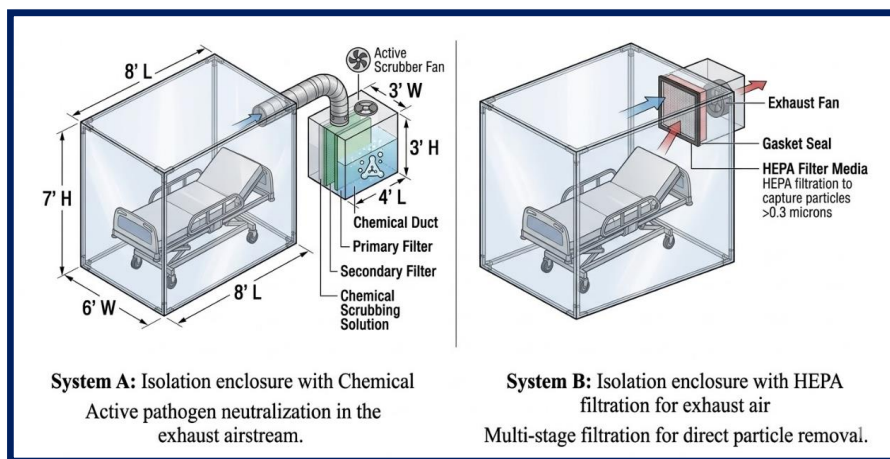
5.5 Makeshift Isolation Enclosures

Guidelines for temporary cubicles/tents with localized negative pressure.

In crisis care scenario in healthcare settings, several COVID-19 patients may be required to be admitted to a single large room. This presents a significant risk to the health care workers as well as a possibility for environmental spread of virus laden particles. For such instances, a make-shift patient isolation enclosure could provide the necessary protection. This could

be a temporary makeshift cubicle or tent constructed out of a skeleton structure (of plastic or metal) and plastic sheet or canvas covering. The tent shall be covered on all sides excepting the front, where PVC strip curtains can be provided. Arrangements for light and a fan inside the tent can be provided for the comfort of the patient, as necessary. The tent shall be provided with an exhaust blower to extract the air inside the enclosure and exhaust out into the atmosphere after suitable treatment.

In case of air-conditioned patient rooms where exhaust blowers cannot be fixed, the Isolation enclosure can be installed inside the patient room with HEPA filtered exhaust air. The exhaust air, after HEPA filtration can be discharged inside the room. This provides a localized negative pressure zone inside the room and helps control infection spread and offers protection to the healthcare workers.



5.6 COVID/Pandemic Operation Theatre

Converting re-circulatory HVAC to 100% once-through systems with independent exhaust blowers.

- Airborne infection isolation requirements (AIIR) have to be strictly enforced
- The most important factor in COVID -19 pandemic is to ensure that the virus laden airborne particles do not leak out of the rooms occupied by COVID-19 patients to control the spread of infections and also to protect the healthcare workers

- In normal practice, most of the OTs would be served by a Heating, Ventilating, Air Conditioning (HVAC) system that would be of a re circulatory type, wherein the air from the OT is taken back to the air handling unit (AHU) for thermal conditioning and brought back
- If a COVID-19 patient has to be operated in such an OT, it will present a significant risk of the virus laden particles spreading out from the designated COVID OT
- If operation theatres are not negatively pressurized, the positive pressure system and central air conditioning must be turned off.
- To convert an existing OT into a COVID OT, it is first necessary to convert the OT into a non-re circulatory system (100% once through system)
- On an emergency basis, this can be achieved by blanking (blocking) off the return air vents in the OT. Additionally, an independent exhaust blower shall be provided to extract the room air and exhaust out into the atmosphere, preferably, after suitable “exhaust air treatment”
- The exhaust air quantity should be greater than the supply air quantity so that a negative pressure of minimum 2.5 Pa (preferably >5 Pa) is achieved in the room. The supply air quantity should provide a minimum of 12 air changes per hour. The position of the extract air duct in the OT should be just above the head of the patient
- As a next best possible option, the COVID OT can have stand-alone room air-conditioners. Room air conditioners re-circulate air within a single occupied zone. Two split air-conditioners of 2 tons refrigeration capacity per OT are usually required. Recirculation of cool air by room air conditioners, must be accompanied by outdoor air intake through slightly open windows and exhaust by natural exfiltration.
- Set the room temperature between 24°C and 30°C. Maintain relative humidity between 40% and 70%. ☐ Negative pressure could be created by putting up 2-3 exhaust fans which will drive air out of the room. However, exhaust fans can lead to significant noise pollution and some compromise in OT sterility

- Treatment of exhaust air can be done preferably by high efficiency particulate air (HEPA) filtration. ☐ Suitable renovation/modification should be carried out in this regard so that there is no mixing up of the air between COVID and non-COVID operation theatres

6. Specialized Service Guidelines

6.1 Dialysis Units:

Guidelines for dialysis units during pandemics [prototype covid 19]

Chronic kidney disease (CKD) patients on dialysis such as maintenance hemodialysis (MHD) or continuous ambulatory peritoneal dialysis (CAPD) are vulnerable to get COVID-19 infection because of their existing co-morbidities, repeated and unavoidable exposure to hospital environment and immunosuppressed condition. IPC measures to be followed includes:

- All standard precautions must be strictly followed.
- All staff must be trained for cough etiquette, hand hygiene and proper use and disposal of PPE.
- All patients who are routinely coming for hemodialysis must be tested for COVID once in 10 days and a register should be maintained. Rapid antigen test may be used for this purpose
- Ensure that the rapid antigen test for COVID is also done along with other viral markers for cases requiring emergency HD.
- All patients undergoing HD must wear a triple layer mask and face shield. Either patient can use their own face shield or decontaminated permanent shield provided from the department. Also ensure that they are wearing these properly during dialysis.
- Hand sanitizer must be placed in all dialysis cots, should strictly follow hand hygiene before handling any patient and in between two patients.
- Symptomatic health care worker must be tested and refrain from duty till the test report is obtained.
- Thorough cleaning of surfaces and floor must be done with 1% hypochlorite solution. High touch surfaces like bedside tables and lockers, dialysis machines, door

knobs, light switches, counter tops, handles, phones, keyboards, toilets sinks etc. must be cleaned two hourly.

- Separate stethoscopes, thermometers, Oxygen saturation probes and blood pressure cuffs between patients with appropriate cleaning and disinfection should be done in between shifts.
- Dialysis tubings used for COVID positive patient must be disposed according to BMW management rule.
- Dialysis staff should use of all personal protective equipment (PPE) for proven or strongly suspected patients of COVID-19. Suspected or positive COVID-19 patients should properly wear disposable three-layer surgical mask throughout dialysis duration. Patients should follow cough etiquettes, hand hygiene etc.

6.2 Management of Deceased:

Deceased Management & Freezer Capacity

The deceased management system at Government Medical College, Thiruvananthapuram, is done by a centralized, high-capacity Mortuary Block under the Department of Forensic Medicine. The institution operates a primary consolidated inventory of 48 freezer units housed within a single, specialized Mortuary Block.

Protocol for handling of deceased during pandemics [prototype-covid 19]

The main driver of transmission of COVID-19 is through droplets. There is unlikely to be an increased risk of COVID infection from a dead body to health workers or family members who follow standard precautions while handling body. But in case of diseases like Ebola, Marburg, CCHF etc HCW can get infections from the deceased as well. Only the lungs of dead COVID patients, if handled during an autopsy, can be infectious. Standard Precautions to be followed by health care workers while handling dead bodies of COVID. Standard infection prevention control practices should be followed at all times.

These include:

1. Hand hygiene.

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

Training in infection and prevention control practices

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

Removal of the body from the isolation room or area

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

- All used/ soiled linen should be handled with standard precautions, put in biohazard bag and the outer surface of the bag disinfected with hypochlorite solution.
 - Used equipment should be autoclaved or decontaminated with disinfectant solutions in accordance with established infection prevention control practices.
 - All medical waste must be handled and disposed of in accordance with Biomedical waste management rules.
 - The health staff who handled the body will remove personal protective equipment and will perform hand hygiene.
 - Provide counselling to the family members and respect their sentiments.
- Environmental cleaning and disinfection All surfaces of the isolation area (floors, bed, railings, side tables, IV stand, etc.) should be wiped with 1% Sodium hypochlorite solution; allow a contact time of 30 minutes, and then allowed to air dry.
- Handling of dead body in Mortuary
- Mortuary staff handling dead body should observe standard precautions.
 - Dead bodies should be stored in cold chambers maintained at approximately 4°C.
 - The mortuary must be kept clean. Environmental surfaces, instruments and transport trolleys should be properly disinfected with 1% Hypochlorite solution.
 - After removing the body, the chamber door, handles and floor should be cleaned with sodium hypochlorite 1% solution.

Transportation

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

6.3 Maternal & Child Health (MCH) care during Pandemic

Purpose

To ensure **uninterrupted, safe, and evidence-based care** for pregnant women, neonates, and children while minimizing infection transmission risk during pandemic situations.

A. Triage & Admission Protocol: At Entry Point

- All pregnant women screened for:
 - Fever / respiratory symptoms
 - Contact history
 - Travel history
- Categorization:
 - **Green:** No symptoms → Routine MCH care
 - **Yellow:** Suspected → Isolation triage area
 - **Red:** Confirmed → Dedicated MCH isolation pathway

B. Labour Room Management

- **Separate Labour Rooms:**
 - Non-pandemic labour room (Green Zone)
 - Suspected cases (Yellow Zone)
 - Confirmed cases (Red Zone – isolation labour room)

Infection Control

- Dedicated entry and exit pathways
- Minimal staff exposure
- Full PPE for:
 - Deliveries in suspected/confirmed cases
- Prefer **negative pressure room** if available

C. Intrapartum Care

- Standard obstetric care **should NOT be delayed**
- Mode of delivery based on **obstetric indication only**
- Avoid unnecessary LSCS due to infection alone
- Continuous maternal monitoring:
 - SpO₂
 - Respiratory status
- Neonatal team to be **pre-alerted**

D. Neonatal Care

At Birth

- Immediate assessment in designated neonatal corner
- Delayed cord clamping – **as per guidelines unless contraindicated**

Rooming-in Policy

- Allowed with precautions:
 - Mask for mother
 - Hand hygiene
 - Physical distancing when possible

Breastfeeding

- **Encouraged**
- With:
 - Mask usage
 - Hand hygiene
- If mother critically ill → expressed breast milk

E. NICU Protocol

- Separate NICU areas: **Isolation NICU**
- Dedicated equipment:
 - Warmers
 - Ventilators
- Strict infection control practices

F. Referral & Transport Protocol

- Dedicated ambulance for:
 - Suspected/confirmed pregnant women
- Pre-intimation to receiving facility
- Neonatal transport incubator for high-risk babies

G. Postnatal Care

- Early discharge (if stable):
 - Vaginal delivery: 24–48 hrs
 - LSCS: 48–72 hrs
- Tele-follow-up for:
 - Mother
 - Neonate

H. Immunization Services

- Continue routine immunization with:
 - Scheduled appointments
 - Crowd control
- Separate immunization clinic if feasible

I. Pediatric Services

- Separate triage for:
 - SARI/ILI children
- Maintain:
 - Emergency pediatric care
 - Nutrition services
- Monitor high-risk groups:
 - Malnourished children
 - Infants

J. Infection Prevention & Control (IPC)

- Strict PPE adherence
- Dedicated staff teams for MCH pandemic care
- Regular disinfection:
 - Labour tables
 - Neonatal equipment
- Biomedical waste disposal as per protocol

K. Psychosocial Support

- Counselling for:
 - Pregnant women
 - Postnatal mothers
- Address:
 - Anxiety
 - Fear of infection
- Provide lactation counselling

L. Documentation & Reporting

- Mandatory recording of:
 - Maternal outcomes
 - Neonatal outcomes
- Reporting to:
 - District Surveillance Unit
 - HMIS / IHIP

7. Logistics and Ancillary Services

7.1 Logistics, Infrastructure, and Supply Chain Management

Supply chain resilience is central to preparedness. Hospitals must maintain buffer stocks of essential consumables, drugs, oxygen, and PPE, with automated inventory systems for real-time tracking. In Kerala, the integration of hospital logistics with the Kerala Medical Services Corporation (KMSCL) ensures rapid procurement and equitable distribution during crises. Biomedical equipment maintenance schedules must remain updated, and contingency plans should address disruptions in power, communication, and waste management systems. Setting up modular field hospitals or isolation extensions should be a pre-approved measure for extreme surges.

Essential ancillary services

Staff involved in these services should be alerted about the pandemic

- Laboratory Services
- Radiology Services
- Blood Bank
- Pharmacy
- Mortuary Services (Care for the dead)

7.2 Instructions for safe use of linen

Packing and transporting linen and laundry from isolation areas

- Place soiled linen directly into containers or bags in the isolation room or area.
- Contain the soiled linen in a manner that prevents the containers or bags from opening or bursting during transport.
- One layer of packing is adequate, provided that the soiled linen can be placed in the bag without contaminating the outside of the bag. Double-bagging is unnecessary.
- Ensure that all persons who handling the soiled linen must use Standard Precautions, and perform hand hygiene after removing PPE.
- Heavy-duty tasks (e.g. cleaning of the environment) require more resistant PPE (e.g.

rubber gloves and apron, and resistant closed shoes). Best practices for linen (and laundry) handling

- Always wear reusable rubber gloves prior to handling soiled linen (e.g., bed sheets, towels, curtains).
- Never carry soiled linen against the body. Always place it in the designated container.
- Carefully roll up soiled linen to prevent contamination of the air, surfaces, and cleaning staff. Do not shake it.
- If there is any solid excrement on the linen, such as feces or vomit, scrape it off carefully with a flat, firm object and put it in the commode or designated toilet/latrine before putting linen in the designated container
- Place soiled linen into a clearly labelled, leak-proof container (e.g., bag, bucket) in the patient care area. Do not transport soiled linen by hand outside the specific patient care area from where it was removed.
- Reprocess (i.e., clean and disinfect) the designated container for soiled linen should be reprocessed after each use
- If reusable linen bags are used inside the designated container, do not overfill them, tie them securely, and launder after each use Always use and maintain laundry equipment according to manufacturer's instructions. Always launder soiled linens from patient care areas in a designated area, which should:
 - Be a dedicated space for performing laundering of soiled linen
 - Have floors and walls made of durable materials that can withstand the exposures of the area (e.g., large quantities of water and steam)
 - Have a separation between the soiled linen and clean linen storage areas, and ideally should be at negative pressure relative to other areas
 - Have hand washing facilities
 - Have Structured Operating Protocols (SOP) and other job aids to assist laundry staff with procedures

7.3 Biomedical Waste Management [BMW] Protocols in Isolation wards:

- Healthcare Facilities having isolation wards need to follow these steps to ensure safe handling and disposal of biomedical waste generated during treatment;
- Keep separate bins/bags/containers (yellow colour) in isolation wards and maintain proper segregation of waste as per BMWM Rules, 2016 as amended and Central Pollution Control Board (CPCB) guidelines for implementation of BMW Management Rules.
- As precaution double layered bags (using 2 bags) should be used for collection of waste from isolation wards so as to ensure adequate strength and prevent leaks;
- Collect and store biomedical waste separately prior to handing over the same to Common Biomedical Waste Treatment and Disposal facility (CBWTF).
- Use a dedicated collection bin labelled as “X” to store infectious waste and keep separately in temporary storage room prior to handing over to CBWTF. Biomedical waste collected in such isolation wards can also be lifted directly from ward into CBWTF collection van.
- In addition to mandatory labelling, bags/ containers used for collecting biomedical waste from isolation wards, should be labelled as “X Waste”. This marking would enable CBWTF is to identify the waste easily for priority treatment and disposal immediately upon the receipt.
- Mixing of X waste with the biomedical waste from other wards, general waste etc. should be avoided.
- General waste other than biomedical waste should be disposed as per Solid Waste Management (SWM) Rules, 2016 only after proper disinfection.
- Maintain separate record of waste generated from X isolation wards. - Use dedicated trolleys and collection bins in isolation wards. A label “X Waste” to be pasted on these items also.
- The (inner and outer) surface of containers/bins/trolleys used for storage of COVID-19 waste should be disinfected with 1% sodium hypochlorite solution.

7.4 Support Services

- Hospital Dietary Services (Kitchen) through collaboration with LSGD
- Sanitation Services
- Hospital Laundry and Sterile Supply
- Psychological Support through coordination from the psychiatry department
- Constitute a social work support team in coordination with the social scientists posted in Dermatology, Psychiatry, PMR, Community medicine, Radiology, and OBG.

8. Communication, Monitoring & Research

8.1 a) Surveillance Mechanisms

- RPEID Cell activation
- Syndromic surveillance (OP, Casualty, ICU)

b) Priority Alerts

- SARI / ILI
- AES
- Hemorrhagic fevers
- Unknown clusters

c) Data Integration

- Daily reporting to IDSP
- District Surveillance

Data collection, compilation, analysis

- State dashboard, central dashboard
- IDSP and IHIP
- ICMR
- The National Animal Disease Referral Expert System (NADRES)
- Comprehensive and timely reporting
- Analysis and interpretation of surveillance data for outbreak detection and informed decision-making for a response.
- Include early warning and community-based surveillance components to ensure wider coverage and comprehensive capture of potential public health events

8.2 Communication strategy

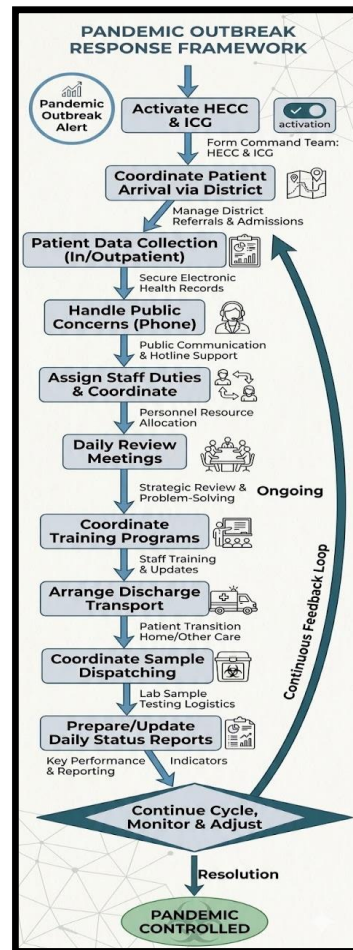
- Centralised PRO communication
- Daily reporting dashboard
- Public awareness campaigns
- Media coordination

8.3 Control room

Hospital control rooms play a vital role in coordinating responses during a pandemic outbreak, ensuring efficient management of resources, staff, and information flow. This plan outlines structured activities based on the provided guidelines, integrated with WHO recommendations for hospital emergency operations centers (EOCs) and epidemic preparedness.

Core Structure

Establish a dedicated Hospital Emergency Coordination Centre (HECC) as the control room hub, equipped with communication tools, maps, logs, and real-time data displays. Form an Incident Command Group (ICG) including representatives from administration, infection control, clinical services, logistics, and communications to oversee all activities. Activate the HECC upon early warning from district health authorities, following the hospital's all-hazards Emergency Response Plan with an annexed Epidemic Sub-plan



Patient Arrival Coordination

Maintain constant liaison with district control rooms and emergency medical services for real-time patient inflow alerts, prioritizing triage based on risk profiles (suspect, probable, confirmed). Designate separate pathways for pandemic patients to prevent cross-infection, using protocols for screening, isolation, and cohorting. Log arrivals with details like time, symptoms, and origin to feed into surge capacity planning.

Data Collection and Management

Implement digital or standardized forms for inpatient and outpatient data, capturing demographics, symptoms, test results, treatment, and outcomes in a centralized database accessible to the ICG. Ensure daily updates to track bed occupancy, ventilator use, and discharges, linking to national surveillance systems like IDSP for contact tracing. Train control room staff on data privacy and rapid entry to support analytics for resource forecasting.

Daily Status Reports

Compile and update reports every morning, detailing ICU/oxygen/ventilator status, 24-hour admissions/discharges/deaths, staff availability, and supply levels. Distribute to district authorities, state HEOCs, and internal departments via secure channels, aligning with WHO EOC reporting standards for situational awareness. Use templates for consistency, including epidemiological trends and risk assessments.

Public Concerns Handling

Set up dedicated phone lines with trained operators to address inquiries, provide symptom guidance, and direct to appropriate facilities or home isolation protocols. Follow scripted responses based on health authority updates to avoid misinformation, logging calls for trend analysis (e.g., common fears or surges). Escalate critical cases (e.g., worsening symptoms) to triage teams.

Staff Duties Assignment

ICG assigns roles via Job Action Sheets, rotating shifts to prevent fatigue while prioritizing infection control experts and surge teams. Coordinate cross-departmental support,

monitoring absenteeism and providing PPE/training, per WHO staff safety guidelines. Track duties in real-time dashboards for accountability.

Review Meetings Coordination

Schedule daily ICG huddles (15-30 minutes) in the HECC for situational updates, resource gaps, and adjustments to the Incident Action Plan. Conduct broader weekly reviews with department heads and external partners for lessons learned. Document minutes and action items for transparency.

Training Coordination

Organize rapid needs assessments for in-house and district staff, arranging sessions on PPE use, triage, and sample handling with district/public/voluntary partners. Use virtual platforms for scale, tracking attendance and certification per WHO core competencies for EOCs. Schedule pre-surge drills quarterly.

Discharge Transport

Coordinate with local transport authorities for safe, dedicated vehicles for discharged patients, verifying recovery status and providing follow-up instructions. Log logistics to avoid delays, integrating with data systems for outcome tracking.

Sample Dispatching

Follow WHO triple-packaging standards: label vials with patient ID, collection time, and biosafety level; use cold chain if required; dispatch via designated couriers to reference labs with manifests. Coordinate with district surveillance for routing and confirm receipts. Train staff on high-risk pathogen protocols.

8.4 Research collaboration

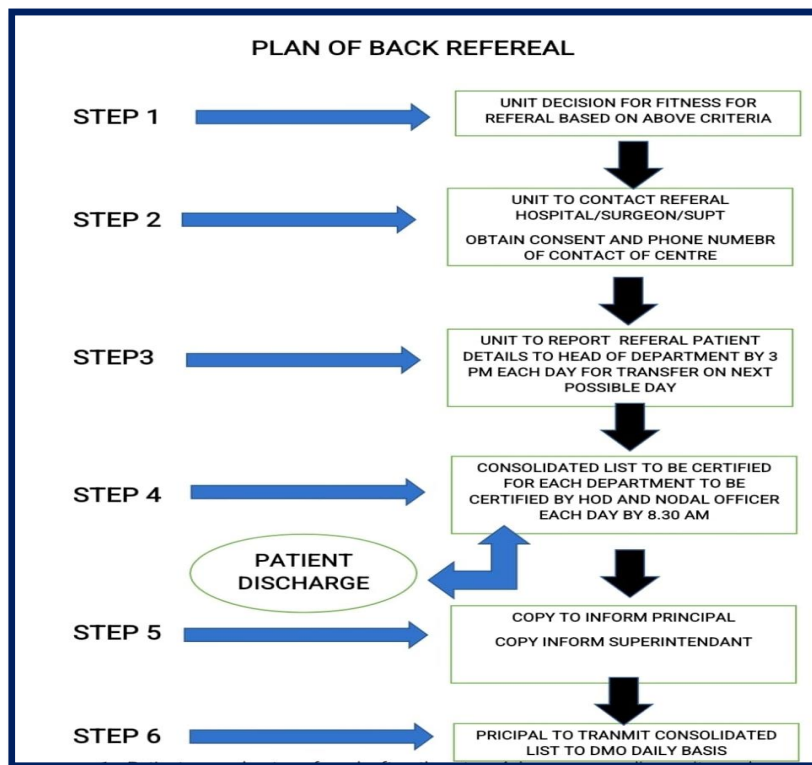
In coordination with the veterinary department, environmental science and health department.

9. De-escalation strategy

9.1 Discharge and Referral

De-escalation strategy- COVID 19 as hypothetical model

- During Pandemics tertiary care centres should have a de-escalation plan especially during contingency response and crisis response.
- Should identify District Hospitals, General Hospitals, Taluk Head Quarters Hospitals etc for shifting mild to moderate cases.
- Priority cases include
 1. Hemodialysis
 2. Pregnancy
 3. Paediatric cases



- Patients can be transferred after the step 4 by corresponding units and responsibility lies with unit head as per older norms
- Transportation can be done by patients own vehicles or hired vehicles or ambulances by them. Poor patient's transportation can be done as per older norms and proper channels which was done in normal times.

9.2 Financial Plan:

A dedicated emergency fund will be a critical financial safety net during the pandemic. Establishment of such special financial packages for all activities, from surveillance to research will aid in effective preparedness and response to any future outbreak, epidemic, pandemic or public health crisis.

9.3 After-Action Reviews:

Establish a continuous monitoring mechanism by establishing a monitoring group and they shall regularly monitor the progress of each step during the preparedness and guide the system to make necessary changes as and when required

10. Index of Standard Operating Procedures (SOPs) & Guidelines

This section serves as a repository of all mandatory protocols.

10.1 Clinical & Triage Protocols

- **Dual Stream Triage:** Segregation of ILI/SARI cases from general patients at entry. *(Management of increasing Fever Cases - Kerala State Treatment Guidelines for ILI & SARI cases in the context of co-circulation of SARS-COV-2 and Influenza virus - Health & Family Welfare Department; G.O.(Rt)No.1489/2023/H&FWD Dated, Thiruvananthapuram, 23-062023)*
- **Red Channel Protocol:** Step-by-step movement of positive patients, including lift blocking and security coordination. *(COVID-19 (n-Corona) Virus Outbreak Control and Prevention State Cell Health & Family Welfare Department Government of Kerala Reference Guide for Converting Hospitals into Dedicated COVID Hospitals.)*
- **Patient Admission & ID Banding:** Mandatory ID bands and registration of bystanders/vehicle details. *(COVID 19 treatment guidelines Ref No 31/F2/2020/ H&FWD dated 15th August, 2020, Govt. of Kerala)*
- **Testing Strategy:** 10-day testing cycle for routine dialysis patients and use of Rapid Antigen Tests (RAT). Testing strategy to be optimized based on the pathogen characteristics *(Advisory on purposive testing strategy for COVID 19; No 46/31/F2/2020/ H&FWD dated 11th Jan, 2022, Govt. of Kerala)*

10.2 Infection Prevention & Control (IPC)

- **Donning & Doffing:** Mandatory refresher training for all staff levels, including housekeeping and drivers. *(COVID 19 - PPE use. Reg. No 31/F2/2020/ Health - dated 25th March, 2020, F &FW, Govt. of Kerala)*
- **Hand Hygiene & Cough Etiquette:** Standardized practices as per the Institutional IPC Manual. *(COVID -19 Infection Prevention and Control Manual, Govt Medical College, Thiruvananthapuram date of issue 16.4.2020)*

- **Environmental Cleaning:** Two-hourly cleaning of high-touch surfaces (switches, handles) with 1% hypochlorite. (Standardized practices as per the Institutional IPC Manual. (COVID -19 Infection Prevention and Control Manual, Govt Medical College, Thiruvananthapuram date of issue 16.4.2020)
- **Patient Equipment Reprocessing:** Sterilization of heat-sensitive (ETO/Sterrad) and heat-stable (Autoclave) items. (Standardized practices as per the Institutional IPC Manual (COVID -19 Infection Prevention and Control Manual, Govt Medical College, Thiruvananthapuram date of issue 16.4.2020)

10.3 Engineering & Infrastructure SOPs

- **AIIR Conversion:** Guidelines for blocking return air vents and achieving 12 Air Changes per Hour (ACH).
- **Operation Theatre (OT) Modification:** Converting to 100% once-through HVAC systems for pandemic surgeries.
- **Makeshift Enclosures:** Setting up temporary cubicles or tents with localized HEPA filtration.

10.4 Logistics & Waste Management

- **Biomedical Waste (BMW):** Use of double-layered yellow bags and specific "X Waste" labeling.
- **Linen & Laundry:** Protocol for leak-proof containers and avoiding double-bagging to reduce waste.
- **Oxygen War Room:** Real-time oxygen mapping and reserve capacity enhancement.

10.5 Specialized & Support Service Guidelines

- **Dialysis Unit SOP:** Use of dedicated tubings for positive patients and face shield requirements.
- **Management of the Deceased:** Disinfection of body bags with 1% hypochlorite and plugging of orifices.

- **Psychological Support:** Counselling for families and staff to manage burnout and anxiety.
- **Food & Dietary Services:** Coordination with Local Self-Government Departments (LSGD) for timely patient meals.
- **Maternal & Child Health SOP**

Index of Annexures

All the major institutions shall keep the following Annexures with all details ready at their respective institution level. The SoPs shall be updated / modified as per the research and information available regarding the respective pathogens..

1. Triage and Red channel protocol
2. Patient transport protocol during pandemics
3. SOP for Patient care equipment
4. SOP Hand hygiene
5. SOP Cough etiquette
6. Personal safety measures and PPE use
7. SOP for environmental cleaning
8. Environmental and Engineering controls
9. SOP for Makeshift Isolation enclosures
10. SOP for pandemic operation theatre
11. Guidelines for Dialysis units
12. Protocol for handling of deceased
13. Guideline on dead body management in context of COVID 19
14. SOP for Safe Linen Use
15. Biomedical Waste Management [BMW] Protocols in Isolation wards:
16. Medical Board Constitution
17. SOP for transporting a Suspect/ Confirmed case
18. CPCB Guidelines – Biomedical Waste Management
19. Mapping of laboratories
20. Infection Prevention and Control Manual-GMCH

Contact Details

Name of college	Contact Points	Contact Number
GMC Trivandrum	Information counter	4712528225
	General enquiry	4712528083
	Duty PRO	8281529159
GMC Kollam	Control Room	4742575050
GMC Konni	Control Room	4682344888
GMC Alappuzha	Control Room	4772281000
	Duty PRO	8281002947
GMC Kottayam	Control Room	9188528533
GMC Idukki	Casualty	04862232444
	Control Room	4862232555
GMC Ernakulam	Control Room	04842754000 04842751001 8075774769
	Duty PRO-	9778082825
GMC Thrissur	Control Room	04872472002 8075011853
	Duty PRO-	9383400082
GMC Manjeri	Control Room	8078253515
GMC Kozhikode	Control Room	4952350349
	Duty PRO-	9497669040
	IMCH Control room	4952350395
GMC Wayanad	Duty PRO-	8129428785
GMC Kannur	Control Room	04972882200, 8078041358
	General enquiry-	4972882100
	Duty PRO-	04972882390 9048600970
GMC Kasaragod	Control Room	8289908320