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Govt. Medical College Wayanad



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

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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.
HICC	Hospital Infection Control Committee
ICS	Incident Command System.
IDSP	Integrated Disease Surveillance Program.
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. PUI: Persons Under Investigation
RAT	Rapid Antigen Tests. PRO: Public Relations Officer.
SOP	Standard Operating Procedure. PSA: Pressure Swing Adsorption

Purpose of the Document

The primary purpose of this Pandemic Preparedness Plan is to establish a robust, scalable, and evidence-based operational framework for the Government Medical College, to effectively detect, contain, and manage emerging infectious disease outbreaks. By outlining a Graduated Response Framework, this document aims to ensure the seamless transition of hospital operations from conventional care to crisis standards, minimizing morbidity and mortality while safeguarding healthcare workers and the community. It serves as a centralized directive to synchronize multidisciplinary efforts, integrating clinical excellence, advanced diagnostics, and rigorous infection prevention with district-level administrative coordination. Ultimately, this plan is designed to provide institutional resilience, ensuring that even under extreme resource scarcity, the facility can provide equitable, high-quality care and maintain critical public health functions.

Key Components Addressed in this Purpose

Operational Readiness: Moving from routine service delivery to crisis management without administrative delay.

Safety & Protection: Explicitly mentioning the implementation of robust occupational safety measures for the protection of the Human Resource Pool (faculty, residents, and staff) alongside supporting mental health and promoting protection and care during sickness

Definitions

Dual-Track System

- This system minimizes 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.

1. Introduction and Geographic Risk Profile

Institutional Context Government Medical College Wayanad (GMCW) is a developing tertiary care institution in a critical transitional phase, evolving from its former status as a District Hospital. Situated in a geographically challenging high-range region, the facility serves as the primary stabilization and definitive care center for the district. This plan outlines a pragmatic framework to ensure institutional resilience against infectious outbreaks, specifically addressing the infrastructure gaps inherent in its current developmental stage.

1.1 Wayanad-Specific Hazard Analysis

Hazard Category	Specific Risks and Vulnerabilities
Geographic Vulnerabilities	Hilly terrain, dense forest cover, and extreme rainfall (>3000mm) leading to landslides and seasonal isolation of remote settlements.
Interstate Border Risk	Proximity to Karnataka and Tamil Nadu via the Muthanga Excise Check Post necessitates rigorous interstate surveillance and "border-spillover" screening protocols.
Population Characteristics	High proportion of Scheduled Tribes (approx. 18%), migrant plantation laborers, and a seasonal influx of tourists in high-density rehabilitation camps.
Disease Profile	Endemicity for Kyasanur Forest Disease (KFD), Leptospirosis, and Malaria. High prevalence of Sickle Cell Disease creates a high-risk cohort during respiratory pandemics.
Emerging Threats	Significant risk of Nipah virus spillover due to the human-animal interface and unscientific construction encroaching on wildlife corridors.

1.2 Scope & Objectives

A pandemic preparedness plan is a comprehensive, living document designed to proactively manage the risks and impacts of a pandemic. Covers the entire spectrum from pre-pandemic detection to pandemic response and post-pandemic recovery. It involves a multi sectoral approach to enhance emergency coordination, laboratory networking and clinical care system to detect treat and control the emerging diseases. The objectives being to strengthen the institutional capacity to manage the emerging situation, to strengthen the existing surveillance system to identify early predictive warning signs and to adopt steps to ensure essential services during the pandemic.

2. Governance and Command Structure

2.1 Hospital Incident Command System (HICS),

GMCW operates under the **Hospital Incident Command System (HICS)**, ensuring a unified chain of command and rapid mobilization of resources through the Kerala DME framework.

Role Key	Responsibilities	Assigned Person	Deputy
Incident Commander	Overall leadership, intersectoral coordination	Medical Superintendent	RMO
Operations Lead	Clinical services, wards, ICUs, triage	Professor & Head – General Medicine	Professor of 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	Accounts Assistant

Command Structure

- **Incident Commander (Medical Superintendent):** Leads overall institutional response and intersectoral coordination with the District Collector and DMO.

- **Operations Lead (HOD, General Medicine):** Manages clinical streams, ICUs, and the implementation of the "Red Channel" protocol.
- **Logistics Lead (Deputy Medical Superintendent):** Oversees the supply chain (KMSCL coordination), Oxygen War Room, and ambulance fleet management.
- **Planning Lead (HOD, Community Medicine):** Responsible for data surveillance (IHIP/IDSP), surge forecasting, and R₀ tracking.
- **Finance Lead (Accounts Officer):** Manages emergency procurement funds and HDS/KASP budgeting.

2.2 Multidisciplinary Team

HOD Medicine

- **Operations Lead:** Serves as the Operations Lead within the Hospital Incident Command System.
- **Clinical & Logistical Oversight:** Responsible for overseeing clinical services, wards, ICUs, triage, oxygen, PPE, equipment, and transport.
- **Surge Management:** Tasked with surge forecasting and executing bed expansion plans.
- **Committee Membership:** Serves as a core member of the Hospital Pandemic Committee / Institutional Medical Board and the Multidisciplinary Team.

HOD Microbiology

Acts as a core member of the Hospital Pandemic Committee / Institutional Medical Board and the Multidisciplinary Team. The Microbiology department is specifically responsible for managing testing protocols and overseeing infection control measures during a pandemic.

HOD Community Medicine

Serves as the Planning Lead within the Hospital Incident Command System. Core member of the standing Hospital Pandemic Committee / Institutional Medical Board/ Regional Prevention of Epidemic and infectious disease cell (RPEID cell), hospital Infection Control

Committee, Outbreak monitoring unit. The department oversees overarching control activities, epidemiological surveillance, and reporting.

HICC (Hospital Infection Control Committee)

Maintained as a strictly functional committee to support institutional preparedness.

Integrated as a key component of the Multidisciplinary Team to guide infection prevention and control strategies.

Specialized Units

- **Outbreak Monitoring Unit (OMU):** The hospital Superintendent as the Convener, and members – RMO, Faculty from General Medicine, Pediatrics, Community Medicine, Microbiology, Pathology, Forensic Medicine and the Nursing Superintendent.
- The outbreak monitoring unit operates during three main stages: preparedness, surveillance, and response. OMU is responsible for the continuous monitoring of data to detect, verify, and initiate rapid response to pandemics.
- **Structure of OMU**

Position	Name	Designation
Convenor	Dr Jeevan Lal C K	Medical Superintendent
Member	Dr Fesin G R	RMO
Member	Dr Aparna Prakash K	Assistant Professor & Gen. Medicine
Member	Dr Vinod Kumar M S	Associate Professor, Pediatrics
Member	Dr Jayakrishnan Thevadi	Professor & HOD, Community Medicine
Member	Dr Feroz C P	Associate Professor, Microbiology

Member	Dr Soroya S	Assistant Professor, Community Medicine
Member	Dr Haseena C	Associate Professor, Pathology
Member	Dr Krishnakumar S	Assistant Professor, FM
Member	Smt Bini Mol Thomas	Nursing Superintendent

3. Current Preparedness and Resource Mapping

GMCW maintains a functional strength of **477 beds** (sanctioned: 500). Strategic mapping ensures that specific wards, particularly the Sickle Cell unit, are protected from contamination.

Institutional Bed Strength and Ward Breakdown

Unit Designation	Current Bed Count	Pandemic Conversion Role
Medical Wards	130	Tier 1/2 Pandemic Surge
Sickle Cell Ward	10	High-Risk Green Zone (Non-Pandemic)
Medical ICU	9	Primary Pandemic ICU
Pediatric ICU + HDU	12	SARI/Pediatric Surge
COVID Special Ward	21	Immediate Isolation Unit
Day Care IP (ED)	24	Dedicated Fever Triage / Holding
Pay ward (KHRWS)	32	Contingency Surge Annex
SNCU + Mother Side Ward	20	Protected Neonatal Zone
Dialysis Unit	32	Dual-Track Dialysis Service
Other (Surgical, OBG, Post-Op, CCU)	187	Essential Services Continuity

Critical Care and Oxygen Resources

- **Ventilators:** 30 units (Centralized mapping).
- **Oxygen-Supported Beds:** 203 beds (Central piping).

- **Advanced Respiratory Support:** 115 BiPAP units and 100 HFNC units (Buffer stock for Tier 2/3).
- **Oxygen Supply:** PSA Plant (600L/min) + Liquid Medical Oxygen (LMO) tank + 12x12 manifold backup.
- **Ambulance Fleet:** 1 ALS, 2 BLS, and 7 Transport vehicles (on-road status).

4. Graduated Response Framework (The Three-Tier Model)

Response levels are triggered by epidemiological data and institutional resource strain.

4.1 Escalation Triggers:

Primary Escalation Triggers

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

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	Elecive 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

Tier 1 (Conventional)

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% .
Sporadic cases; $R_0 < 1$; <10% staff absenteeism.	Activate Fever Clinic; mandatory SARI screening at entry; 30-day PPE buffer audit. 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.

Tier 2 (Contingency)

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 Paywards) and create barricaded triage areas.
70-90% ICU occupancy; District Load reaching 10%.	Pause non-urgent elective surgeries; activate Payward surge annex; implement 8-hour shift rotations.
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.

Tier 3 (Crisis)

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.
>90% ICU occupancy; Absenteeism >20%; $R_0 > 2$.	Emergency care only; convert Day Care IP to makeshift ICU; activate "Task-Shifting" HR model. 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.

The hospital implements a three-tier surge response system to manage increasing patient load during public health emergencies. Each level is defined by bed occupancy, ICU utilization, oxygen demand, and workforce scaling. The approach ensures a gradual, structured escalation while maintaining patient safety and infection control.

Overall Strategy

- The surge response is dynamic, phased, and data-driven, based on real-time monitoring of bed occupancy, ICU load, and oxygen demand.

- Early escalation is prioritized to prevent system overload and ensure preparedness.
- Ensures continuity of non-pandemic essential healthcare services alongside surge management.
- Emphasizes staff safety, infection control, and efficient utilization of available resources at every level.

Triage Protocol (Emergency Severity Index)

ESI Level	Description	Action/Resource Level
1 (Red)	Immediate life-saving intervention.	High: Multiple clinicians + Red Channel activation.
2 (Red)	High-risk/Severe distress.	High: Immediate isolation and stabilization.
3 (Yellow)	Stable but requires multiple resources .	Moderate: Yellow Zone monitoring (Vitals/Labs).
4 (Green)	Requires only one resource.	Low: Minimal intervention area/OPD.
5 (Green)	No resources needed.	Routine: Discharge/Telemedicine.

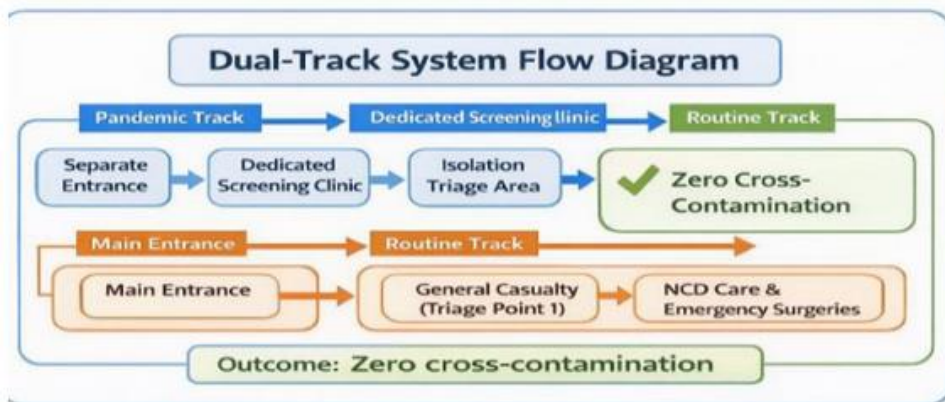
5. Operational Standard Operating Procedure (SOPs)

5.1. Triage and Red Channel Protocol (Actionable SOP)

The **Dual-Track System** is the operational standard to prevent cross-contamination. Dual-stream triage (Green/Red zones), dedicated transport routes, and lift/trolley disinfection with 1% hypochlorite

1. **Pandemic Track:** Utilizes the separate "Fever Triage" entrance with a dedicated pathway to the COVID Special Ward and Medical ICU.
2. **Routine Track:** Segregated flow for Trauma, NCD care, and Maternal Health.

Dual Track System Flow Diagram



3. **Zoning Strategy:** Red (Confirmed), Yellow (Suspected/PUI), and Green (Clean/Sickle Cell/MCH).

Red Zone:

This zone is designated for confirmed infectious cases, including patients admitted in isolation wards and ICUs. It operates under the highest level of infection control precautions, including full PPE usage, restricted access, and frequent environmental disinfection. Only authorized and trained personnel are allowed entry.

Yellow Zone:

This zone is allocated for suspected cases or Patients Under Investigation (PUIs). Patients awaiting diagnostic confirmation are managed here with appropriate precautions. Staff use intermediate-level PPE, and patient movement is strictly controlled until diagnosis is confirmed.

Green Zone:

This zone is reserved for non-infectious patients, including routine outpatient, inpatient, trauma, and NCD care. Standard precautions are followed, and strict measures are taken to prevent exposure from higher-risk zones.

1. **Screening:** Immediate identification at the Entry Screening Desk (Muthanga border/Local).
2. **Triage:** Direction to Fever Triage Area for clinical ESI categorization.
3. **Transport:** Movement via a **Dedicated Path/Blocked Lift**; porters must perform **1% sodium hypochlorite trolley disinfection** immediately after transfer.
4. **Security:** Enforcement of the "Zero-Bystander" policy in the Red Zone.

5.2 Patient Care Equipment

SOPs for dedicated instruments, decontamination of heat-stable/sensitive items, and PPE for reprocessing.

5.3 Infection Prevention & Control (IPC)

Manuals for hand hygiene, cough etiquette, donning/doffing training, and staff safety monitoring.

5.4 Environmental & Engineering Controls

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

5.5 Makeshift Isolation Enclosures

Guidelines for temporary cubicles/tents with localized negative pressure.

5.6 Pandemic Operation Theatre

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

6. Specialized Service Guidelines

6.1 Dialysis Units

Testing frequency, surface disinfection, and staff PPE requirements.

- 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 and a register should be maintained. Rapid antigen test may be used for this purpose
- 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.

6.2 Management of Deceased

Handling protocols (Standard Precautions), plugging orifices, 1% hypochlorite bag disinfection, and family counseling.

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.

Standard Precautions to be followed by health care workers while handling dead bodies 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. The health worker attending to the dead body should perform hand hygiene, ensure proper use of PPE (gloves, N95 mask, goggles, water resistant apron).
6. All tubes, drains and catheters on the dead body should be removed.
7. 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.
8. Apply caution while handling sharps such as intravenous catheters and other sharp devices. They should be disposed into a sharps container.
9. Plug oral, nasal orifices of the dead body to prevent leakage of body fluids.
10. 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.
11. 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.
12. The body will be either handed over to the relatives or taken to mortuary.
13. 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.
14. Used equipment should be autoclaved or decontaminated with disinfectant solutions in accordance with established infection prevention control practices.

15. All medical waste must be handled and disposed of in accordance with Biomedical waste management rules.
16. The health staff who handled the body will remove personal protective equipment and will perform hand hygiene.
17. Provide counselling to the family members and respect their sentiments.
18. 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

1. Mortuary staff handling dead body should observe standard precautions.
2. Dead bodies should be stored in cold chambers maintained at approximately 4°C.
3. The mortuary must be kept clean. Environmental surfaces, instruments and transport trolleys should be properly disinfected with 1% Hypochlorite solution.
4. After removing the body, the chamber door, handles and floor should be cleaned with sodium hypochlorite 1% solution.

Transportation

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

7. Human Resource Strategy and Staffing Roster

The total staffing position is **514**, comprising PSC, NHM, HDS, and KASP appointees.

Surge Staffing Scalability Map

Staff Category	Current Strength	Tier 3 (Crisis) Expansion Plan
Doctors	94	14-day rotation; redeploy from Pre-clinical/Academic; recruit via HDS.
Nursing Staff	138	Requirement: 126–168 for Crisis surge; recruit temporary staff via NHM/KASP.
Cleaning/Support	117	24x7 sanitation teams; focus on 1% hypochlorite environmental cleaning.
Security/Transport	16	External reinforcement via District Police for "Red Channel" enforcement.

Daily War Room Schedule

- **08:30:** Night Duty Handover & Bed/Ventilator Status Audit.
- **10:00:** Oxygen War Room Review (LMO levels & Cylinder manifold pressure).
- **12:00:** Logistics Briefing (PPE burn rate and Pharmacy buffer stock review).
- **15:00:** Surveillance Update (New clusters/IHIP data entry status).
- **18:00:** Staff Welfare & Roster Review (Absenteeism and shift-rotation audit).

8. Logistics & Ancillary Services

8.1 Supply Chain Management

Real-time tracking via automated inventory systems and KMSCL coordination facilitate uninterrupted supply of drugs and other materials to manage the increasing demand at times of pandemic

8.2 Biomedical Waste (BMW)

GMCE mandates strict adherence to Biomedical Waste Management rules. Infectious waste will be secured in double-layered yellow bags to prevent punctures or leaks. These bags require specific labeling for immediate identification and must be moved through the hospital via dedicated transport pathways. Strict adherence to BMW handling rules to be ensured during Collection, segregation, storage, transport and final disposal of biomedical waste

8.3 Linen & Laundry

Contaminated patient linen will be deposited directly into leak-proof containers. To streamline processing and reduce unnecessary infectious waste volume, the protocol explicitly prohibits the double-bagging of linen.

8.4 Oxygen War Room

A dedicated Oxygen Manager oversees the real-time mapping of oxygen consumption. The war room will be responsible for daily audits and coordinating reserve capacity enhancement before critical shortages occur.

8.5 Support Services

Daily coordination with LSGD, Directorate of health services, private sector, psychological support (Psychiatry dept), and social work teams.,

9. Communication, Monitoring & Research

9.1 Surveillance Systems

Integration with RPEID cell, IHIP, IDSP, ICMR, and AI-assisted epidemiologic modeling. Routine surveillance, epidemic preparedness and prediction activities are coordinated by Regional PEID (RPEID) cells. It also strengthened the connection between medical colleges and state health system in collection, analysis, and sharing of information regarding communicable diseases.

Surveillance Integration with e-Health Kerala for bed tracking and the IDSP/IHIP portal for cluster reporting. The "Oxygen War Room" provides real-time digital consumption dashboards.

Constitution of RPEID cell

Position	Name	Designation
Chairperson	Dr Chandini R	Principal,
Wise Chairperson	Dr Jeevan Lal C K	Medical Superintendent
Coordinator	Dr Soroya S	Assistant Professor, Community Medicine
Member	Dr Jayakrishnan Thevadi	Professor & HOD, Community Medicine
Member	Dr Vinod Kumar M S	Associate Professor, Padiatrics
Member	Dr Aparna Prakash K	Assistant Professor & Gen. Medicine
Member	Dr Feroz C P	Associate Professor, Microbiology
Member	Dr Jyothi E	Associate Professor, Pulmonology

9.2 Media & Risk Communication

Designated spokesperson, accurate status reports, and designated locations for media updates.

Risk Communication Culturally sensitive outreach is prioritized. Communication with tribal "Oorus" (settlements) is managed through ASHAs and Tribal Health Workers to ensure early health-seeking behavior and combat misinformation.

9.3 Control Room Operations

Coordination of patient arrivals, duty roster management, and daily review meetings. Control rooms in pandemics operate as central command hubs for real-time surveillance, data collection, and information dissemination, often facilitating daily supervision by Superintendent/ Deputy Superintendent in charge of casualty. Acting as a central node for establishing quarantine facilities and directing sample transportation. These centers act as specialized, dedicated units to manage the operational challenges during the pandemic situation

9.4 Research Collaboration

Clinical trials, outcome analysis, and veterinary/environmental science coordination.

10. Recovery & De-escalation

10.1 Discharge & Back Referral

Criteria for shifting mild/moderate cases to Taluk or District hospitals.

After stabilization and completion of advanced interventions, patients are systematically referred back to appropriate secondary or primary care facilities for ongoing management, rehabilitation, and follow-up. This policy is supported by clear clinical criteria, structured communication between institutions, and coordinated transport mechanisms.

10.2 Financial Plan

Establishing a dedicated emergency response fund.

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.

10.3 After-Action Reviews

Policy audits and post-pandemic evaluations for iterative improvement.

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

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

This section serves as a repository of all mandatory protocols.

11.1 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 (nCorona) 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)*

11.2 Infection Prevention & Control (IPC)

Clinical protocols are aligned with Kerala State Health Agency (SHA) and DME standards.

IPC Cornerstones

- **Rational PPE:** N95 + Face Shield + Gown for aerosol-generating procedures; 1% sodium hypochlorite for high-touch surfaces (2-hourly).
- **Airway Management:** Emphasis on "Wake Prone Positioning" and early HFNC/BiPAP intervention to prevent ventilator-dependency.

- **Donning & Doffing:** Mandatory refresher training on correct donning and doffing techniques is required for all staff levels, extending beyond clinical personnel to include housekeeping, drivers, and sanitation workers. These procedures must occur in clearly demarcated, dedicated donning and doffing areas. (*COVID 19 - PPE use. Reg. No 31/F2/2020/ Health - dated 25th March , 2020, F &FW, Govt. of Kerala*)
- **Hand Hygiene & Cough Etiquette:** All personnel must rigidly follow the 5 Moments of Hand Hygiene. Standardized practices for hand hygiene and respiratory/cough etiquette must be enforced in accordance with the Institutional policy.(*COVID -19 Infection Prevention and Control Manual, Govt Medical College, Thiruvananthapuram date of issue 16.4.2020*)
- **Environmental Cleaning:** A highly aggressive sanitation schedule will be observed. High-touch surfaces (such as light switches, door handles, and railings) will undergo two-hourly cleaning utilizing a 1% sodium hypochlorite solution. Medical equipment with a 0.5% hypochlorite solution for decontamination.(*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 protocols are strictly categorized by material tolerance. Heat-sensitive items will be reprocessed using ETO (Ethylene Oxide) or Sterrad systems, whereas heat-stable instruments will undergo standard Autoclave sterilization. (*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*)

11.3. Continuity of Essential Services

The following services are non-negotiable and must remain in the **Green Zone**:

- **Labour Room & SNCU:** Essential Maternal and Child Health services.
- **Sickle Cell Ward:** Dedicated protected space for the vulnerable tribal population.
- **Dialysis Unit:** Dual-stream tubings/PPE for pandemic-positive dialysis patients.
- **Blood Bank:** Maintenance of a 7-day buffer stock for emergency trauma.

11.4. Specialized & Support Service Guidelines

- **Dialysis Unit SOP:** The nephrology/dialysis unit will utilize dedicated machine tubing's exclusively for positive patients to prevent cross-infection. Furthermore, face shields will be made a mandatory component of the PPE ensemble for all staff operating in this unit. Furthermore, face shields will be made a mandatory component of the PPE ensemble for all staff operating in this unit.
- **Management of the Deceased:** Mortuary and ward staff should be made to employ Standard Precautions when handling deceased pandemic patients. Protocols mandate the secure plugging of all orifices and the thorough disinfection of the exterior of leak-proof body bags using a 1% hypochlorite solution.
- **Psychological Support:** Recognizing the severe mental toll of a pandemic, the Psychiatry department and a dedicated Mental Health Cell will provide active counseling. This support will be designed to manage burnout and anxiety among frontline staff, as well as offer critical grief counseling for patients and families.
- **Food & Dietary Services:** To ensure the dietary needs of a surging inpatient population are met without overwhelming internal kitchens, the hospital will establish robust coordination with Local self-Governments and NGO's for the timely procurement and delivery of patient meals.
- **Maternal & Child Health SOP:** While ensuring uninterrupted maternal care , specific admission, isolation, and transfer rules will dictate the flow of care if both a mother and her child are admitted, detailing whether rooming-in is permitted or separation into specialized suspect neonatal units is required.

11.5. Healthcare Worker (HCW) Welfare

- **Mental Health Cell:** Established psychological first-aid and tele-counseling specifically for staff handling high-mortality tribal cohorts.
- **Occupational Safety:** Mandatory donning/doffing audits; designated rest areas; daily symptom screening.
- **Logistics:** Guaranteed food, transport during landslides/lockdowns, and NHM-sponsored accommodation for frontline teams.

12. Way Forward: Phased Strengthening Plan

Immediate Infrastructure Corrections

- **Casualty Redesign:** Transition to a modern Emergency Department (ED) concept with built-in triage capacity.
- **Isolation ICU:** Identification of space for a 5-bed negative-pressure isolation unit near the emergency area.
- **Reverse Triage:** Strengthening PHCs and CHCs to facilitate the back-referral of mild cases, allowing GMCW to focus on tertiary care.

Roadmap Phases:

1. **Phase 1:** Strengthening Triage and IPC drills.
2. **Phase 2:** Expansion of LMO storage and dedicated isolation wards.
3. **Phase 3:** ICU enhancement and RT-PCR/Multiplex PCR lab activation.
4. **Phase 4:** Full-scale simulation training and AI-assisted surveillance.

13. Conclusion

The GMCW Pandemic Preparedness Action Plan was prepared taking into consideration the unique geographic and epidemiological realities of Wayanad.

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