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Govt. T D Medical College Alappuzha



Pandemic preparedness 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
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Contents

Purpose of Document	11
Definitions & Abbreviations	13
1. Introduction & Contextual Analysis	14
1.1 Background & Purpose	14
1.2 Institutional Geography	14
1.3 District-Specific Risk Profile	15
1.4 Scope & Objectives	15
2. Governance & Command Structure	16
2.1 Pandemic Preparedness & Response Committee	16
2.2 Multidisciplinary Team	16
2.3 Outbreak Monitoring Unit (OMU)	17
2.4 Institutional Medical Board	17
3. Situational Analysis & Resource Mapping	18
3.1 Infrastructure Audit	18
3.2 Human Resource Pool	18
3.3 Equipment & Logistics	21
4. Graduated Response Framework (Three-Tier Model)	23
4.1 Escalation Triggers	11
4.2 Tier 1 – Conventional (Best Case)	23
4.3 Tier 2 – Contingency (Moderate Case)	24
4.4 Tier 3 – Crisis (Worst Case)	25
5. Operational Standard Operating Procedures (SOPs)	26
5.1 Triage & Red Channel Protocol	26
5.2 Patient Care Equipment	27
5.3 Infection Prevention & Control (IPC)	27
5.4 Environmental & Engineering Controls	34
5.5 Makeshift Isolation Enclosures	38
5.6 Covid/Pandemic Operation Theatre	39
6. Specialized Service Guidelines	40
6.1 Dialysis Unit	40
6.2 Management of the Deceased	41

6.3 Maternal & Child Health	44
7. Specialized Service Guidelines	46
7.1 Supply Chain Management	46
7.2 Linen & Laundry	46
7.3 Biomedical Waste Management	47
7.4 Support Services	48
8. Communication, Monitoring & Research	50
8.1 Surveillance Systems	50
8.2 Media & Risk Communication	50
8.3 Control Room Operations	50
8.4 Research Collaboration	50
9. Recovery & De-escalation	51
9.1 Discharge & Back Referral	51
9.2 Financial Plan	51
9.3 After-Action Reviews	51
10. Index of Standard Operating Procedures (SOPs) & Guidelines	52
10.1 Clinical & Triage Protocols	52
10.2 Infection Prevention & Control (IPC)	54
10.3 Engineering & Infrastructure SOPs	64
10.4 Logistics & Waste Management	65
10.5 Specialized & Support Service Guidelines	67
11. Conclusion	74

Purpose of the Document

The **Pandemic Preparedness Plan** at Government TD Medical College Alappuzha is designed to ensure the hospital and its associated healthcare system can effectively respond to large-scale infectious disease outbreaks (like COVID-19 or influenza pandemics).

Key Purposes

1. Early Detection & Rapid Response

To identify suspected cases quickly and activate protocols for isolation, testing, and treatment to prevent spread.

2. Infection Prevention & Control (IPC)

To establish strict hygiene, PPE usage, and patient-handling procedures to protect both healthcare workers and patients.

3. Resource Management

To ensure adequate availability of:

- Beds (including ICU)
 - Ventilators and oxygen supply
 - Medicines and PPE kits
- This avoids shortages during surges.

4. Workforce Preparedness

To train doctors, nurses, and staff on:

- Emergency protocols
- Use of protective equipment
- Handling infectious patients safely

5. Patient Care & Triage System

To prioritize patients based on severity and ensure critical cases receive immediate care while mild cases are managed appropriately.

6. Coordination & Communication

To coordinate with:

- State health authorities
- Local administration
- Public health departments

and ensure clear communication to the public.

7. Continuity of Essential Services

To maintain non-pandemic healthcare services (like maternal care, emergencies) even during outbreak

Definitions & Abbreviations

PHEIC:	Public Health Emergency of International Concern.
RPEID Cell:	Regional Pandemic & Emerging Infectious Diseases Cell.
HICC:	Hospital Infection Control Committee.
IHIP/IDSP:	Integrated Health Information Platform / Integrated Disease Surveillance Programme.
ILI/SARI:	Influenza-Like Illness / Severe Acute Respiratory Infection

1. Introduction & Contextual Analysis

Pandemics pose a recurrent and significant threat to public health systems worldwide, with the potential to overwhelm healthcare infrastructure, disrupt essential services, and cause substantial morbidity and mortality. The COVID-19 pandemic underscored the critical importance of advance preparedness, rapid response mechanisms, and coordinated institutional action in mitigating the impact of large-scale infectious disease outbreaks. Tertiary care institutions, particularly government medical colleges, play a pivotal role not only in clinical management but also in surveillance, training, research, and public health response during such emergencies.

1.1 Background & Purpose:

Government T D Medical College, Alappuzha, as a tertiary care and teaching institution catering to a large population of Alappuzha district and neighbouring regions, has a crucial responsibility in pandemic preparedness and response. This Pandemic Preparedness Plan has been developed with the objective of strengthening institutional readiness to detect, respond to, and recover from pandemics in a systematic and coordinated manner. The plan outlines strategies for surveillance, triage, infection prevention and control, surge capacity management, human resource deployment, logistics and supply chain management, risk communication, and intersectoral coordination. It also emphasizes the integration of clinical services with public health principles, ensuring continuity of essential healthcare services while safeguarding patients, healthcare workers, and the community.

1.2 Institutional Geography:

At Government TD Medical College Alappuzha, institutional geography supports pandemic response through its strategic location near Alappuzha town, enabling easy access for a large population during outbreaks like COVID-19. Good road connectivity, including access to National Highway 66, ensures quick movement of ambulances and supplies, while nearby Alappuzha Railway Station facilitates regional transport. Though the city lacks an airport, Cochin International Airport provides broader connectivity. Wide and accessible roads around the hospital further help in efficient emergency response and patient transport.

1.3 District-Specific Risk Profile:

For Government TD Medical College Alappuzha, the district-specific risk profile is strongly influenced by the unique geographic and social conditions of Alappuzha. The region is low-lying and prone to frequent flooding, especially during the monsoon, which increases the risk of water-borne and vector-borne diseases such as Leptospirosis, Dengue fever, and Malaria. Periodic influx of migrant laborers in and around the district can also contribute to the spread of infectious diseases due to crowded living conditions and limited access to healthcare. These factors require the medical college to maintain enhanced surveillance, early diagnosis systems, and preparedness for seasonal outbreaks, while also ensuring rapid response during flood-related health emergencies.

1.4 Scope & Objectives:

By establishing clear roles, responsibilities, and standard operating procedures, this plan aims to enhance resilience, ensure timely decision-making, and minimize the health, social, and economic impact of future pandemics. The document serves as a dynamic framework, to be periodically reviewed and updated in line with evolving evidence, national guidelines, and lessons learnt from past public health emergencies. The scope and objectives of a pandemic preparedness plan focus on building a strong system for early warning, coordination, and reducing deaths during outbreaks. Early warning is ensured through continuous disease surveillance and timely reporting of cases to higher authorities, enabling quick detection of outbreaks. The institution works in close coordination with agencies such as the Directorate of Health Services Kerala, Directorate of Medical Education Kerala, and the Alappuzha District Collectorate to ensure a unified response involving public health actions, resource allocation, and administrative support. The plan also emphasizes mortality mitigation by strengthening critical care services, ensuring availability of essential medicines and oxygen, and implementing timely treatment protocols. Together, these measures help the institution respond efficiently and minimize the overall impact of a pandemic.

2. Governance & Command Structure

The governance and command structure is designed for efficient pandemic management, with the Principal providing overall leadership and the Medical Superintendent overseeing hospital operations. Clear roles and a hierarchical framework enable swift decision-making, coordination across departments, and effective implementation of response measures during outbreaks.

2.1 Pandemic Preparedness & Response Committee (PPRC)

At Government TD Medical College Alappuzha, the Pandemic Preparedness & Response Committee (PPRC) is led by the Principal and the Medical Superintendent, who play central roles in planning and execution during health emergencies. The Principal acts as the overall head, responsible for policy decisions, coordination with higher authorities like the Directorate of Medical Education Kerala, and ensuring that academic and administrative resources are aligned for pandemic response. The Medical Superintendent functions as the operational leader, overseeing hospital management, patient care services, bed allocation, staffing, and implementation of infection control measures during outbreaks such as COVID-19. Together, they ensure coordinated decision-making, efficient resource utilization, and effective execution of preparedness and response strategies within the institution.

2.2 Multidisciplinary Team:

The Pandemic Preparedness & Response Committee (PPRC) at Government TD Medical College Alappuzha operates through defined leadership roles to ensure coordinated pandemic management. The Medical Superintendent leads overall authority and district coordination, while department heads in Medicine and Microbiology guide clinical care and testing. The Infection Control Officer enforces prevention measures, and the Nursing Superintendent manages staff deployment and training. Biomedical Engineering oversees critical equipment like oxygen and ventilators, supported by an Oxygen War Room for monitoring supply. The pharmacist handles essential drugs, the administrative officer manages HR and logistics, and the PRO ensures effective public communication. This clear role distribution ensures smooth coordination and response during outbreaks.

2.3 Outbreak Monitoring Unit (OMU):

The Outbreak Monitoring Unit (OMU) is a specialized cell reconstituted to actively identify and monitor emerging and re-emerging infections within the hospital and surrounding community. Led by the Superintendent as Co-Chairperson and comprising experienced faculty members from key departments such as Neurology, Community Medicine, General Medicine, Paediatrics, Microbiology, Forensic Medicine, Pathology, and Nursing, the OMU plays a vital role in early detection through surveillance and triaging of suspected cases. The unit also facilitates advanced diagnostic techniques, including multiplex PCR platforms, to ensure rapid and accurate identification of infectious agents. By coordinating expertise across multiple specialties, the OMU enhances the institution's capacity for timely response, containment, and management of outbreaks, thereby strengthening overall pandemic preparedness.

2.4 Institutional Medical Board:

The Institutional Medical Board provides oversight for developing and updating clinical treatment protocols tailored to local needs during pandemics. It also sets clear discharge policies to ensure patient safety and prevent infection spread after recovery. This board ensures standardized, evidence-based care and smooth patient flow within the hospital, enhancing the overall effectiveness of the pandemic response.

3. Situational Analysis & Resource Mapping

Involves evaluating available infrastructure, workforce, critical equipment, ICU beds, oxygen supply, and essential medicines. This helps identify gaps, prioritize needs, and ensure efficient allocation of resources to strengthen the hospital's readiness and response during a pandemic.

3.1 Infrastructure Audit:

The table below provides a concise view of what the hospital has, what is lacking, and the actions needed to make Government TD Medical College Alappuzha fully prepared for pandemic situations.

Domain	Existing Infrastructure	Identified Gaps	Action Required
Hospital Buildings	Separate OP & IP blocks	Space constraints; no earmarked channel for pandemic patients	Earmark Ward 15 & 19 exclusively during pandemics
Inpatient Beds	1651 total beds	Limited surge isolation beds	Convert Ward 19 into full isolation ward
Oxygen Beds	889 oxygen beds	Oxygen surge planning not mapped	Conduct oxygen mapping & augment cylinder supply
ICUs	162 beds	Shortage of ICU beds during surge	HDU – Ward 5 (20 Bed), Ward 19 (10 bed)
Ventilators	126 available (56 functional)	Non-functional ventilators	Repair, AMC reactivation, and condemnation of irreparable units
Fever ICU	None	Only fever wards exist	Creation of a dedicated Fever ICU
Operation Theatres	32 functional OTs	Only 2 Negative Pressure OTs (1 functional due to staff shortage)	Temporary conversion of EOT near Casualty to negative pressure OT

3.2 Human Resource Pool:

This table summarizes what staff are available, where shortages exist, and the measures planned, along with the three-tiered staffing approach (core, reserve, volunteers) to ensure the hospital can manage routine and surge pandemic demands efficiently.

Sl No	Category	Sanctioned	Present	Gaps	Mobilization Strategy
1	Faculty (Clinical)	656 sanctioned doctors	Slightly lower than sanctioned	ICU & surge duty exhaustion	Call back from leave; redeploy from non-critical depts.
2	Residents (SR/ Academic JR/ NAJR)	311 Residents in various clinical & non clinical departments	Shortage in some departments	Limited manpower for surge	Recruit additional temporary doctors via HDS / schemes
3	Nursing Staff (Permanent)	299 sanctioned	Severe shortage	High workload; leave cancellations needed	Shift-based duty (6-8 hr shifts); cancel all leave.
4	Nursing Staff (Contract)	Limited	Inadequate	Not enough for surge	Recruitment of emergency

			temporary staff		temporary nursing staff.
5	ICU/Transplant Trained Nurses	Limited	Not adequate for full surge	Shortage for Level 3 ICU	Prioritize for Level 3 (Crisis) ICU surge.
6	Nursing Assistants	122	Severe shortage	Insufficient support for patient care & wards	Deploy for high-touch surface cleaning and food delivery.
7	Hospital Attendants (Gr 1 & 2)	200	Limited training for pandemic	Need for proper cleaning & disinfection	Training on 1% hypochlorite use and trolley disinfection.
8	Kudumbashree / Cleaning Staff	Available	Limited coverage	Increased waste & environmental cleaning needs	Focus on waste management and environmental cleaning.

9	Ancillary (Lab, Rad, Pharm)	Available	Functiona l but limited for 24/7 coverage	Not sufficient for surge	Maintain a standby duty roster for 24/7 coverage.
10	Security & Transport Staff	Available	Limited for surge	Coordinati on of patient movement & records	Lead "Red Channel" movement and patient data entry.
11	Volunteer / Reserve Pool	Retired / Non- clinical staff	Not mobilized	Lack of extra manpower	Identify retired HCWs and those in non- clinical roles.

3.3 Equipment & Logistics:

Equipment / Resource	Current Status / Inventory	Gaps Identified	Action Required
Ventilators	126 total, 56 functional	Limited functional ventilators during surge	Repair & AMC activation, training & commissioning
ICU Beds	162 beds	Limited surge ICU capacity	Operationalize all ICUs + create surge ICU
Oxygen Beds	898 beds	Surge oxygen planning not mapped	Oxygen mapping & cylinder augmentation

HFNC Units	8 units, 6 functional	Shortage during surge	Repair & redistribute
NIV Units	1 unit, non-functional	Severe shortage	Procure additional units, maintain buffer stock
Liquid Medical Oxygen (LMO)	3 KL & 13 KL tanks; PSA plant available but not operational	Surge planning not mapped	Activate PSA plant, map oxygen supply, augment cylinders
Patient Monitors	430 available	Not adequate for pandemic surge	Procure additional monitors & accessories
Infusion Pumps	7 available	Insufficient	Procure/additional units
Syringe Pumps	16 available, 8 functional	Shortage for routine functioning	Repair & procure additional units
Portable X-ray Units	8 units, 5 functional	Limited coverage during surge	Plan shared use or procure additional units
ECG Machines	60 units, 35 functional	Limited for pandemic wards	Redistribution or additional procurement
Pulse Oximeters	187 units	Inadequate for screening & wards	Procure additional units
Ambu Bags	Available	Insufficient for surge	Procure additional units
PPE Kits	Nil in stock	Critical shortage	Emergency procurement & maintain buffer stock
N95 Masks	Nil in stock	Critical shortage	Immediate procurement & buffer stock
Biomedical Waste Management	BMW officer & system in place	Increased load during pandemic	Additional BMW bags, transport & contracts
Ambulances	5 units, 2 non-functional	Limited transport for emergencies	Repair & network with district ambulance services

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

4.1 Escalation Triggers:

Escalation triggers are defined using key parameters to guide timely pandemic response. These include the disease epidemiology, specifically the basic reproduction number (R_0) which reflects how quickly the infection spreads; ICU occupancy, indicating critical care pressure; bed availability, showing capacity for new patients; and staff absenteeism, which affects the hospital's ability to maintain services. When these thresholds reach critical levels, the hospital activates higher-level response measures to manage patient surges and maintain healthcare delivery efficiently.

4.2 Tier 1 – Conventional (Best Case):

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

Trigger Points	Institutional Action Points
Cases: Routine cases; minor increase in suspected COVID-19 cases monitored.	Surveillance: Early case detection through routine monitoring; reporting of suspected cases
Admission: Standard admissions continue; no surge expected	Infrastructure: Standard wards maintained; isolation ward ready but not fully activated
Staffing: Normal staffing levels; minor shift adjustments to cover fluctuations	Training: Refresher sessions on infection control and pandemic protocols.

Logistics: PPE stock maintained; oxygen supply mapped; routine supply chain operational	Logistics: Routine PPE procurement; oxygen mapping; maintain supply chain.
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4.3 Tier 2 – Contingency (Moderate Case):

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

Trigger Points	Institutional Action Points
Cases: Rapid increase in confirmed cases; rising community transmission	Hospital Reorganization: Multiple ICUs established (suspect, confirmed, step-down); dedicated suspect & confirmed wards; elective services stopped
ICU Occupancy: ICU beds nearing full capacity; need to expand suspect and confirmed ICUs	Clinical Operations: Strict triage and patient categorization; general OP services stopped; focus on emergency and pandemic care
District Load: OP overload and high hospital admissions across the district; referral pressure high	HR Strategy: Large-scale recruitment of temporary staff; redeployment of existing staff; shift-based duty to manage surge
Logistics: PPE, oxygen, and essential drugs under stress; supply chain requires continuous monitoring	Logistics: Continuous supply chain management; buffer stock of PPE, oxygen, and essential drugs; monitoring stock levels daily

4.4 Tier 3 – Crisis (Worst Case):

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

Trigger Points	Institutional Action Points
Cases: Uncontrolled rise in confirmed cases; widespread community transmission	Hospital Reorganization: Full hospital restructuring; elective services halted; convert general wards into pandemic care units
ICU Occupancy: All ICU beds full; need for emergency ICU expansion including makeshift ICUs	Critical Care: Multiple ICUs (suspect, confirmed, step-down); emergency ICUs set up in non-traditional areas (wards, halls)
District Load: District hospitals overwhelmed, high referral pressure, inter hospital coordination critical	Services: Emergency and critical care prioritized; elective procedures stopped; all non-essential services suspended
Staffing: Severe shortage of trained staff; emergency redeployment, volunteers, and temporary hires required	HR Strategy: Mass redeployment of staff, emergency redeployment, volunteers, and extended shifts; recruitment of temporary healthcare workers and volunteers
Logistics: Critical shortage of PPE, oxygen, essential drugs; urgent need for continuous resupply and contingency stock	Networking: District-level coordination; ICU and hospital bed pooling; referral pathways streamlined across hospitals

5. Operational Standard Operating Procedures (SOPs)

The Operational SOPs at TDMC Alappuzha define clear, step-by-step guidelines for responding to a pandemic at each escalation level. They ensure coordinated hospital operations, patient triage, infection control, staff management, and resource allocation, enabling the institution to maintain continuity of care while effectively managing surge capacity. These SOPs serve as a practical framework for clinical, logistical, and administrative decision-making during all phases of a pandemic.

5.1 Triage & Red Channel Protocol

Triage & Red Channel Workflow – TDMC Alappuzha

1. Entry Screening

- All patients and attendants are screened at hospital entry points for symptoms, travel history, and exposure risk.
- Temperature checks and hand sanitization mandatory.

2. Dual-Stream Triage

- **Red Zone:** Patients with suspected infection directed here.
- **Green Zone:** Non-suspected/routine patients proceed to regular OP or emergency services.

3. Dedicated Transport Routes

- Separate corridors, lifts, and staircases designated for Red Zone patients to avoid contact with Green Zone areas.
- Signage and floor markings guide staff and patients.

4. Isolation & Initial Assessment

- Suspected patients in Red Zone receive immediate clinical assessment.
- Samples for testing collected in designated areas.

5. Infection Control Measures

- All trolleys, lifts, wheelchairs, and high-touch surfaces disinfected with **1% hypochlorite solution** after each use.

- Staff use full PPE according to risk exposure.

6. Patient Flow Post-Triage

- Confirmed positive: Transferred to dedicated COVID wards or ICU.
- Suspected negative: Managed in isolation or discharged with home monitoring instructions.

7. Documentation & Reporting

- Red Zone patient data recorded in hospital registry.
- Immediate reporting to district health authorities as per surveillance SOP.

5.2 Patient Care Equipment:

Cleaning and disinfection SOP

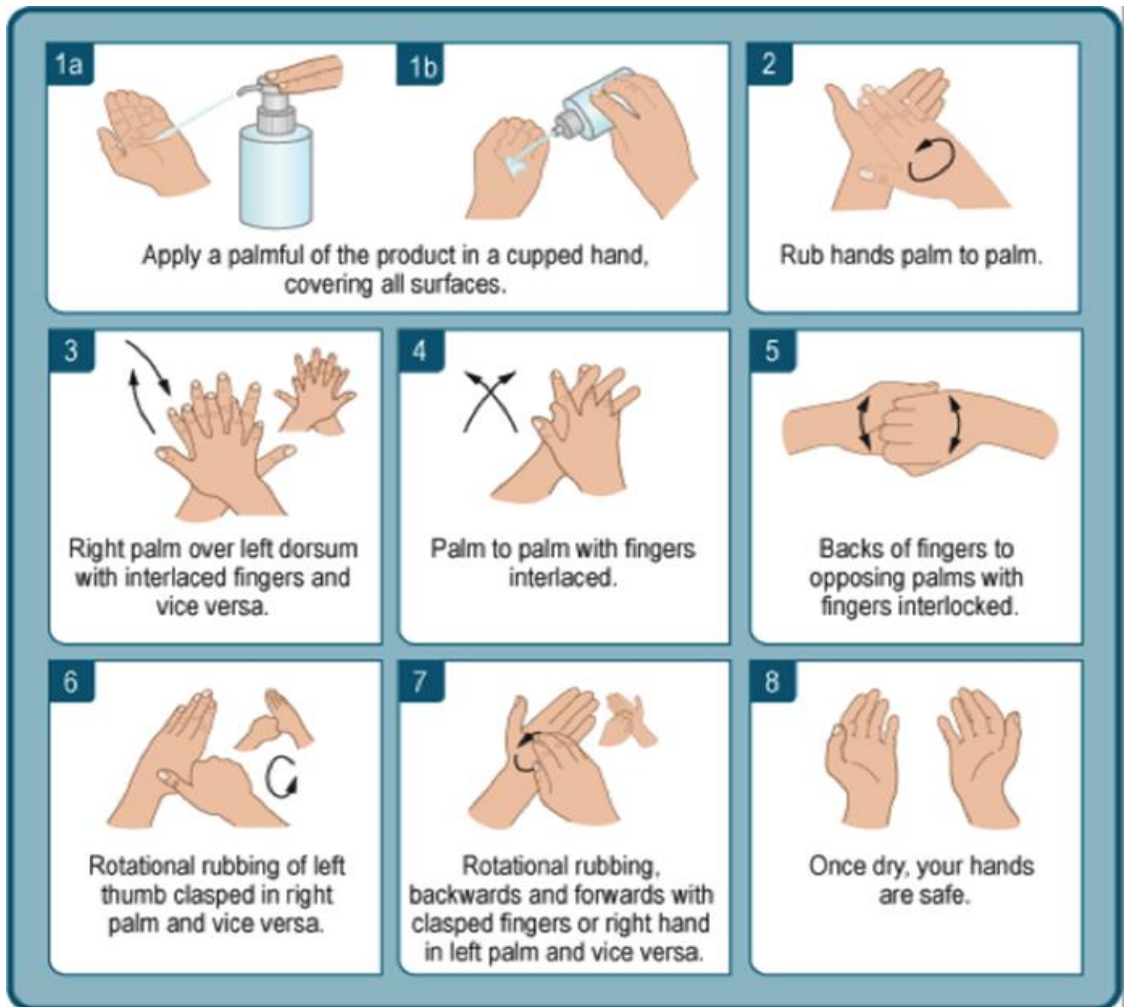
Isolation ward/room (when patient is occupied)

- Floor - mop with sodium hypochlorite (0.5%, 5000ppm) three times a day
- Disinfection with 70-90% alcohol for reusable dedicated equipment (e.g., thermometers) hourly
- High touch area: Wipe with sodium hypochlorite (0.5%, 5000ppm)
- Low touch area (wall and ceiling) with lysol 7%: daily once
- Designate specific well-trained staff for cleaning environmental surfaces
- Wear appropriate PPE - heavy duty gloves, mask, eye protection (goggles/face shield), long-sleeved gown, apron (if gown is not fluid resistant), and boots or closed shoes
- The supervisor must use a checklist to promote accountability for cleaning Responsibilities Terminal disinfection
- Clean with Soap and water followed by disinfection with 0.5%hypochlorite: All surfaces and floor including walls, ceiling, toilet etc that were in contact with patient or may have become contaminated during patientcare followed
- Disinfection with 70-90% alcohol for reusable dedicated equipment (e.g., thermometers
- Do not spray or fog occupied or unoccupied rooms with any disinfectant - potentially dangerous practice as it may create aerosols and has no proven benefits

- Wear appropriate PPE - heavy duty gloves, mask, eye protection (goggles/face shield), long-sleeved gown, apron (if gown is not fluid resistant), and boots or closed shoes

5.3 Infection Prevention & Control (IPC):

SOP hand hygiene



Moment-1 and 4 : Before and after touching a patient	Moment-2 and 3: Before and after aseptic procedure/body fluid exposure	Moment-5: After touching patient surroundings
Before and after • Taking pulse, blood pressure • Auscultation and Shaking hands • Helping a patient to move around • Applying oxygen mask • Giving physiotherapy • Recording ECG • Use of gloves	Before and after • Oral/dental care • Aspiration of secretions or accessing draining system • Skin lesion care, wound dressing • Giving injection • Drawing of blood or sterile fluid • Handling an invasive device • (Catheter, central line, ET tube) • Clearing up urine, faeces, vomit, • Handling bandages, napkin etc • Instilling eye drops • Moving from a contaminated body site to another body site.	• After contact with • Handling the case sheet • Medical equipment in the immediate vicinity of the patient • Bed or bed rail • Changing bed linen • Decanting urobag

SOP Respiratory & cough etiquette

General public with respiratory symptoms

- Wear a surgical mask
- Seek medical care
- Learn mask management

To combat the short supply of PPEs, the following is recommended by CDC and WHO.

- Perform hand hygiene before and after touching or adjusting the N95 mask

DO'S	DON'T'S
Use mask only when clinically indicated Surgical mask- when handling respiratory patients N95 mask- when doing aerosol generating procedures	Do not use mask when clinically not indicated Wearing masks when not indicated creates a false sense of security that can lead to neglect the other essential measures such as hand hygiene practices
Always hold by its strings	Don't touch/hold front/back part of mask
Fitting: Compress the mask to ensure a seal across nose bridge, face and cheeks	Do not allow tangling of mask around neck
Discard after 4-6h for surgical mask and 8h for N95 mask	Do not keep using mask for longer time/days Do not wash mask and reuse
Discard in yellow bags	Do not throw masks here and there after use

SOP for PPE Use

Setting	Target personnel	Activity	Recommended PPE
Help desk		Provide information	Triple layer mask Gloves
Ward	Healthcare workers (Doctor/Nurses/Technician)	Non-Aerosol Generating Procedure	Triple layer mask Gloves Plastic apron
	Cleaner/Sweeper/HA	Disinfection/ Patient Shifting	Triple layer mask Gloves Plastic apron
Triage	Doctors/ nurses/ cleaner/nursing assistant	Taking history, cleaning	Triple layer mask Gloves Plastic apron

Laboratory	Technicians in central lab		Triple layer mask Gloves Plastic apron
All Other OPDs	Doctors / Nurses	Physical examination of patients with respiratory symptoms	Triple layer mask Plastic apron Gloves Hand hygiene
	Cleaners		Triple layer medical mask Plastic apron Gloves
Other ICUs	Healthcare workers (Doctor/Nurses/ Technician)	Aerosol Generating procedures	N95 Plastic apron Gloves Hand hygiene
Radiodiagnosis	Doctor	Contact with patient	Triple Layer Mask
	Technician	Positioning of patient	Full PPE
Mortuary	Staff attending to dead body	Autopsy	Full PPE
Administrative office	All staff	No direct/indirect patient contact	No PPE required

SOP - Personal protective equipment

Donning

- Select PPE of appropriate size
- Remove all ornaments, watch, Bindi, Sindoor, purse, mobile etc
- Put up the hair
- Perform proper hand washing first
- Sanitize the hand with hand rub

- Wear first pair (inner gloves) of gloves and fix the inner glove with our body using a micropore tape fold the end of the tape for easy removal
- Sit on a chair and wear shoe covers
- Use hand rub
- Take gown and open the zip.
- Wear the right leg portion first then left leg by sitting. Wear the gown completely, tie the back strap towards one side.
- Wear N95 mask hold the mask by the outer surface with the palm of the hand. Take care not to touch the inside of the mask. Put the upper strap first (it should be above the ear lobe and then the lower strap (it should come below the earlobe) then avoid kinking of the strap.
- Perform fit check, press the nose portion to fix at bridge of nose. Then blow out to check that there is no leaking of air through sides of the mask.
- Wear eye Goggles.
- Put the hood of the gown, hood must cover the overhead up to eye brows
- Wear second pair (outer gloves) of gloves completely covering the first pair (inner gloves) , rim of second pair of gloves must be above the gown
- Secure the zip of gown using micropore tape, stick micropore tape in the all-exposed areas in the face.
- Wear the outer plastic apron.

SOP - Personal protective equipment

DOFFING

- Before starting doffing, 1st step is to surface decontaminate outer pair of gloves with alcohol hand rub
- Follow hand rub technique for doffing – {hand rub – bottle hygiene – hand rub}

- During doffing avoid touching contaminated area as far as possible, if touched immediately decontaminate the surface using hand rub
- Remove outer pair of gloves and plastic apron in the patient care area itself in the red bin and come to the doffing area
- Use hand rub
- Follow hand rub technique for doffing – {hand rub – bottle hygiene – hand rub}
- Remove all micropore tapes from face and zip of the gown
- Use hand rub
- Follow hand rub technique for doffing – {hand rub – bottle hygiene – hand rub}
- Remove gown hood (cap) by holding the back side of the hood and pull downwards
- use hand rub
- Follow hand rub technique for doffing – {hand rub – bottle hygiene – hand rub}
- Remove goggles, hold the goggles then remove it carefully, discard it in to the red bin
- Use hand rub
- Follow hand rub technique for doffing – {hand rub – bottle hygiene – hand rub}
- Untie the gown strap and unzip the gown, only the inner surface should be touched. Take care to see that the outer contaminated part of the suit does not touch the inner dress at any time during doffing
- Sit comfortably and remove suit from leg area by rolling inside out, discard in to yellow Bin
- Use hand rub
- Follow hand rub technique for doffing – {hand rub – bottle hygiene – hand rub}
- Remove the shoe cover by putting the finger inside and roll it inside out and discard in the red bin
- Use hand rub

- Follow hand rub technique for doffing – {hand rub – bottle hygiene – hand rub}
- Remove the N95 Mask (lower strap first then upper strap) discard in the yellow bin
- Use hand rub
- Follow hand rub technique for doffing – {hand rub – bottle hygiene – hand rub}
- Remove micropore tape on inner gloves
- Finally remove the inner pair of gloves and discard in to the red bin
- Hand sanitization with a separate hand rub.
- Hand washing
- Go through the exit door, take bath, immerse cloths in soap solution in hot water for 30mts then wash it
- In case of any spillage or splash in between patient care, go to doffing area and doff immediately.
- Discard every item in to separate color coded Bins.

5.4 Environmental & Engineering Controls:

Viruses can potentially survive in the environment for several hours/days. Premises and areas, equipment potentially contaminated with the virus to be cleaned before their re-use. Contaminated surfaces can transmit infections to health care workers by direct contact with the surfaces. Hand hygiene is important to minimize this transfer.

Cleaning and disinfecting environmental surfaces is fundamental in reducing healthcare-associated infections

Cleaning agents and disinfectants

1. 1% Sodium Hypochlorite can be used as a disinfectant for cleaning and disinfection
2. The solution should be prepared fresh.
3. Leaving the solution for a contact time of at least 10 minutes is recommended.

4. Alcohol (e.g., isopropyl 70% or ethyl alcohol 70%) can be used to wipe down surfaces where the use of bleach is not suitable, e.g., metals.

Isolation room/ward/screening area	Disinfectant	Contact time	Frequency
High touch surface	Hypochlorite 0.5% (wipe)	10 minutes	4 hourly
Floor	Clean (soap & water) and then Hypochlorite 0.5% (mop)	10 minutes	8 hourly
Wall	Hypochlorite 0.5% (wipe)	10 minutes	Once daily
Toilet	Clean (soap & water) and then Hypochlorite 0.5% (wash)	20 minutes	Once daily
Corridor	Hypochlorite 0.5% (mop)	10 minutes	8 hourly
Non critical equipment (stethoscope, BP cuff, thermometer etc)	Alcohol wipes	10 minutes	After each use
Slippers, closed shoes	Soap and water first and then with Hypochlorite 0.1% (dip)	10 minutes	After use (at least once a day)
Terminal disinfection	Soap and water followed by 0.5% hypochlorite	10 minutes	As and when required
Used Linen	Hypochlorite 0.1%	30 minutes	As and when required

Foot note:

- Contact time of at least 10 minutes is necessary for both Cidex or hypochlorite
- Since Hypochlorite can damage textiles and metals should be used mainly on hard, non-porous surfaces
- Surfaces (Table surfaces, slabs, walls, windows, equipment surfaces etc.):
- Wipes are recommended over spray for all reachable surfaces and high-touch areas including stainless steel, rubber and equipment surfaces

- Spray is recommended for only non-reachable surfaces. Spray should be avoided in general, as coverage is uncertain and spraying may promote the production of aerosols.
- Floor: Mop is recommended.
- Bucket wipes- do not use for non-critical areas like fans, walls, doors etc. First, wipe with plain water and then can disinfect with Lysol.
- PPE: Housekeeping staff should wear appropriate PPE when handling and transporting used patient care equipment (gloves) or while cleaning/disinfecting ward (surgical mask, gown, heavy duty gloves, eye protection if risk of splash, Boots or closed work shoes)
- Housekeeping staff should wash their hands with soap and water immediately after removing the PPE, and when cleaning and disinfection work is completed.
- Dishes and eating utensils used by a patient with known or suspected infection: No special precautions other than standard precautions such as hand hygiene and wearing gloves when handling patient trays, dishes and utensils.

Measures during mopping

- Progress from the least soiled areas to the most soiled areas and from high surfaces to low surfaces
- Remove gross soil (visible to naked eye) prior to cleaning and disinfection
- Never shake mops: Minimize turbulence to prevent the dispersion of dust that may contain micro-organisms
- Use dust control mop prior to wet/damp mop. Do not use brooms
- Wash the mop under running water before doing wet mopping
- Do not 'double-dip' mops (dip the mop only once in the cleaning solution, as dipping it multiple times may re-contaminate it)
- An area of 120 square feet to be mopped before re-dipping the mop in the solution
- Cleaning solution to be changed after cleaning an area of 240 square feet. (i.e., Change solution for every room)
- Change more frequently in heavily contaminated areas, when visibly soiled and immediately after cleaning blood and body fluid spills.

- Cleaning sequence: Always clean should be proceeded in a top-to-down sequence i.e., ceiling-based equipment first, walls, then floor-based equipment and lastly the floor.
 - When cleaning the floor, begin at the end farthest from the door and move towards the door (in to out).
 - The cleaning staff should always move from clean to unclean areas and never vice versa
 - When cleaning individual equipment: clean from top to down
- Eight stroke techniques for mopping: In open areas use a figure eight stroke in open and wide spaces, overlapping each stroke; turn mop head over every five or six strokes.
 - While in small spaces, starting in the farthest corner of the room, drag the mop toward you, then push it away, working in straight, slightly overlapping lines and keeping the mop head in full contact with the floor.
 - Repeat until entire floor is done.
- Disinfection: After cleaning, all equipment used for cleaning, wash with soap and hot water; followed by decontamination with 0.5 hypochlorite 10 min and then dry it in sunlight
- Change the mop head when heavily soiled or at the end of the day.
- Report adverse incident to supervisor
- Collect waste, handle plastic bags from the top (do not compress bags with hands)
- Clean hands on leaving the room.

Measures during surface wiping

- Go from clean to unclean area and top to down
- No. of strokes per wipe- vary depends on area and material and size of the wipe
- Use new wipe for each use
- Never do zig-zag cleaning, never do re-dipping of cloth

5.5 Makeshift Isolation Enclosures:

Makeshift Isolation Enclosures – SOP

1. Purpose

- Provide temporary isolation for suspected or confirmed infectious patients during patient surges.

2. Setup

- Use tents, cubicles, or partitioned areas in wards or open spaces.
- Ensure **localized negative pressure** using exhaust fans or portable HEPA-filtered units.

3. Patient Flow

- Red Zone patients directed exclusively to these enclosures.
- Clearly marked entry and exit points to prevent cross-contamination.

4. Infection Control

- Surfaces, trolleys, and equipment disinfected regularly with **1% hypochlorite solution**.
- Staff wear full PPE while inside enclosures.

5. Monitoring

- Continuous observation for clinical deterioration; rapid transfer to ICU if needed.
- Maintain logs of occupancy, cleaning, and staff assignment.

6. Ventilation & Safety

- Ensure adequate airflow to maintain negative pressure.
- Avoid overcrowding; follow distancing norms within the enclosure.

5.6 Covid/Pandemic Operation Theatre:

1. Purpose

- Ensure safe surgical care for COVID-19 or highly infectious patients while minimizing aerosol transmission.

2. HVAC Modifications

- Convert standard re-circulatory HVAC systems to **100% once-through airflow**.
- Install **independent exhaust blowers** to maintain negative pressure relative to adjacent areas.

3. Patient & Staff Flow

- Designate separate entry and exit routes for COVID-positive patients.
- Minimize personnel inside theatre; all staff to wear full PPE including N95 masks and face shields.

4. Equipment & Surface Disinfection

- All surgical instruments, trolleys, and high-touch surfaces disinfected using **1% hypochlorite** before and after each procedure.

5. Air Handling & Monitoring

- Maintain continuous air changes per hour as per infection control standards.
- Monitor temperature, humidity, and negative pressure regularly.

6. Documentation

- Record theatre usage, cleaning schedules, and staff exposure logs.
- Ensure strict adherence to SOP for all COVID surgeries.

6. Specialized Service Guidelines

6.1 Dialysis Unit:

Dialysis Unit SOP – Infection Control

1. Definitions

Positive patients: Patients with transmissible infections such as Hepatitis B, Hepatitis C, HIV, or others as per institutional policy.

2. Dedicated Tubing Policy

Hepatitis B

- Dedicated dialysis machine required
- no reuse of dialyzer and tubings- dispose as biohazard waste
- Separate area/room
- Separate staff if possible
- No sharing of supplies with HBV-negative patients Hepatitis C / HIV
- No strict isolation required
- Standard precautions mandatory
- No reuse of dialyser/tubings-Dispose as biohazard waste

3. Face Shield Requirements

For infectious patients

Face shield is mandatory during:

- Cannulation and decannulation
- Handling bloodlines
- Managing blood spills
- Disconnecting dialysis circuits
- during central venous catheterisations.
- During the reprocessing of blood tubings and dialysers

4. Standard Infection Control

- Hand hygiene before and after patient contact
- Disinfection of machine after each session
- Do not share tourniquets or BP cuffs unless disinfected

- Proper biomedical waste disposal

6.2 Management of the Deceased:

Dead body management

Standard Precautions to be followed by HCWs while handling dead bodies

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.

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.

Overall recommendations

- Body bag- One body bag, robust leak-proof of 150µm thickness is needed.
- Viewing of the body -is allowed with standard precautions
- Embalming of dead body should not be allowed.
- Hygienic preparation- either not allowed, or allowed with appropriate PPEs
- Autopsy- need to avoided as much a possible
- Final treatment- either cremation or cuffing depending up on the religious practice; however, cremation is more advisable.

Specific recommendations

- Removal of the body from the isolation room or area
- The health worker attending to the dead body should perform hand hygiene, ensure proper use of PPE (water resistant apron, goggles, N95 mask, gloves).
- All tubes, drains and catheters on the dead body should be removed.
- Any puncture holes or wounds (resulting from removal of catheter, drains, tubes, or otherwise) should be disinfected with 1% hypochlorite and dressed with impermeable material.

- Apply caution while handling sharps such as intravenous catheters and other sharp devices. They should be disposed into a sharp's 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 (hand hygiene, mask and gloves)
- Place the dead body in leak-proof plastic body bag. The exterior of the body bag can be decontaminated with 1% hypochlorite.
- The body bag can be wrapped with a mortuary sheet or sheet provided by the family members.
- The body will be either handed over to the relatives or taken to mortuary.
- All used/ soiled linen should be handled with standard precautions, put in bio-hazard bag and the outer surface of the bag disinfected with hypochlorite solution.
- Used equipment should be autoclaved or decontaminated with disinfectant solutions.
- All floor, wall, ceiling, high touch area and medical care equipment used should be disinfected/mopped with 1% hypochlorite solution.
- Do not do fogging or spray of the isolation room.
- All medical waste must be handled and disposed of in accordance with Bio-medical waste management rules.
- The health staff who handled the body will remove personal protective equipment, discard inappropriate waste bins and will perform hand hygiene.

1) 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.

2) Handling of dead body in Mortuary

- Standard precautions have to be followed
- Dead bodies should be stored in cold chambers maintained at approximately 4°C.

- 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

3) Autopsies

The following infection prevention control practices should be adopted:

- The team should be well trained in infection prevention control practices.
- The number of forensic experts and support staff in the autopsy room should be limited.
- The team should use full complement of PPE (coveralls, head cover, shoe cover, N 95 mask, goggles / face shield).
- Reduce aerosol generation during autopsy using appropriate techniques especially while handling lung tissue.
- After the procedure, body should be disinfected with 1% Sodium Hypochlorite and placed in a body bag.
- The exterior of the bag will again be decontaminated with 1% Sodium Hypochlorite solution.
- The body thereafter can be handed over to the relatives.
- Autopsy table to be disinfected as per standard protocol.

4) Transportation

- 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

5) At the crematorium/ Burial Ground

- The staff will practice standard precautions of hand hygiene, use of masks and gloves.
- Bathing, kissing, hugging, etc. of the dead body should not be allowed.
- The ash does not pose any risk and can be collected to perform the last rites.

- Large gathering at the crematorium/ burial ground should be avoided as a social distancing measure it is possible that close family contacts may be symptomatic and/ or shedding the virus.

6.3 Maternal & Child Health:

Purpose:

Ensure safe care for mothers and neonates during a pandemic while minimizing infection risk.

Admission Rules:

- Mother and child admitted together whenever feasible to minimize movement and exposure.
- Suspected or confirmed infectious cases placed in dedicated Red Zone MCH wards.
- Non-infectious patients continue in routine Green Zone maternity wards.

Transfer Rules

- If mother requires ICU/critical care, child remains in adjacent isolation or neonatal unit with trained staff.
- Transfers between wards or hospitals require pre-notification and dedicated transport routes.
- Use dedicated lifts, trolleys, and PPE during transfers.

Infection Control

- Strict hand hygiene and PPE use by all staff handling mother or neonate.
- Surfaces, baby incubators, and maternal beds disinfected with 1% hypochlorite solution after each patient use.

Staffing & Monitoring

- Assign dedicated staff teams for mother-child pairs to limit cross-contact.
- Continuous monitoring of vital signs and COVID symptoms for both mother and child.

Documentation & Communication

- Maintain logs of admissions, transfers, and any exposures.
- Inform parents and staff about infection prevention protocols and movement restrictions

7. Specialized Service Guidelines

7.1 Supply Chain Management:

Purpose

- Ensure uninterrupted availability of critical medicines, PPE, oxygen, and consumables during a pandemic.

Inventory Tracking

- Use automated inventory management systems for real-time monitoring of stock levels.
- Track expiry dates, usage rates, and minimum stock thresholds for all essential items.

Coordination with KMSCL

- Maintain active communication with the **Kerala Medical Services Corporation Limited (KMSCL)** for timely procurement and replenishment.
- Submit weekly and emergency requisitions as per consumption trends.

Buffer Stock & Emergency Planning

- Maintain a minimum buffer stock for critical items to manage sudden surges.
- Prioritize distribution to Red Zone or ICU/critical care units during peak demand.

Documentation & Reporting

- Record all supplies received, issued, and returned.
- Generate daily stock reports to monitor consumption and prevent shortages.

Staff Responsibilities

- Assign dedicated logistics officers for monitoring stock, coordinating with KMSCL, and implementing emergency procurement.

7.2 Linen & Laundry:

Laundry infection control SOP

- Place soiled linen in a leak-proof bag or bucket; Never carry soiled linen against body

- Hand hygiene and PPE (surgical mask, heavy duty gloves, plastic apron, boots)
- Dedicated laundry area should be there for cleaning soiled bedding, towels and clothes.
- Soiled linen should be placed in clearly labelled, leak-proof bags or containers, carefully removing any solid excrement and putting in covered bucket to dispose of in the toilet or latrine

If using dedicated Washing machine:

- Wash at 60-90°C with laundry detergent followed by soaking in 0.1% Sodium Hypochlorite for approximately 30 minutes and dried

If no dedicated machine washing:

- Soaked in hot water with soap/detergent in a large drum
- Use a stick to stir and avoid splashing
- Empty the drum and soak linen in 0.1% sodium hypochlorite for approx. 30 minutes
- Rinse with clean water and let linen dry fully in the sunlight

7.3 Biomedical Waste Management:

Follow these steps to ensure safe handling and disposal of biomedical waste generated during patient care.

Color coded bag/box	Items	Disposal method
Yellow	Infectious non-plastic, non-sharp	Incineration
Red	Infectious plastic, non-sharp	Autoclave or microwave (recycle)
White sharp	Sharp (metal)	Sharp pit
Blue Box	Glass, metal implants	Autoclave (recycle)

Follow the same principal segregation of waste as per BMWM Rules, 2016.

Important steps in BMW management in facility

- Keep separate dedicated color-coded bins/bags/containers in corona isolation wards and should be labelled as “Infected Waste”
- Double layered bags (using 2 bags) should be used for collection of waste from isolation wards so as to ensure adequate strength and no-leaks
- Use dedicated trolley and collection bins and label as “Infected Waste”
- Waste collected in such isolation wards is lifted directly from collection bins into IMAGE collection vehicle.
- Disinfection: The inner and outer surface of collection bins/ trolleys should be disinfected with 0.5 % sodium hypochlorite
- General waste not having contamination should be disposed as solid waste (black bag)
- The cleaning staff on duty donned in full PPE must collect waste

7.4 Support Services:

Purpose	Provide comprehensive support for patients, staff, and families during a pandemic.
Dietary Coordination	Meal provision. - Special diets maintained for ICU, post-operative, and maternal & child patients. - Ensure timely delivery and hygienic handling
Psychological Support	Psychiatry department provides counselling, stress management, and crisis intervention. - Helpline and in-person support for patients, attendants, and staff in high-stress zones
Social Work Services	Assist with patient counselling, family coordination, discharge planning. - Connect patients/families with community support. -

	Facilitate transport, accommodation, and other logistics for families
Staff Coordination	Dedicated teams coordinate dietary, psychological, and social services. - Daily briefings to ensure communication between departments.

8. Communication, Monitoring & Research

8.1 Surveillance Systems:

Surveillance at TDMC Alappuzha is designed to enable early detection and continuous monitoring of infectious disease trends. The system is integrated with national platforms such as IHIP and IDSP, to ensure timely reporting of suspected and confirmed cases. Routine data on admissions, ICU occupancy, and outcomes are collected and shared with district and State health authorities. Real-time tracking through IHIP dashboards helps monitor disease patterns and hospital burden.

8.2 Media & Risk Communication

A structured communication system is maintained to ensure transparent and accurate dissemination of information during a pandemic to handle all media interactions and official statements, avoiding misinformation and ensuring consistency. Regular and accurate status reports on case load, hospital capacity, and key updates are shared with authorities and the public.

8.3 Control Room Operations

The control room functions as the central coordination hub during a pandemic, managing real-time information and hospital operations. It oversees coordination of patient arrivals, including bed allocation and routing to appropriate care areas. Duty rosters for medical, nursing, and support staff are organized and regularly updated to ensure adequate coverage across all units. Daily review meetings are conducted to assess case load, resource availability, staffing status, and operational challenges, enabling timely decisions and efficient hospital functioning.

8.4 Research Collaboration

Research activities at TDMC Alappuzha are strengthened during a pandemic to support evidence-based response and policy decisions. Collaboration is also extended to support a One Health approach, helping understand zoonotic transmission patterns and environmental factors influencing disease spread.

9. Recovery & De-escalation

9.1 Discharge & Back Referral

- Clear criteria are followed for shifting mild and moderate cases from TDMC Alappuzha to Taluk or District hospitals to optimize tertiary care capacity.
- Patients who are clinically stable, not requiring ICU or advanced interventions, and showing improving symptoms are considered for transfer.
- Adequate oxygen stability, absence of complications, and ability to be managed at lower-level facilities are key considerations.
- Back referral is done with prior communication to the receiving facility, along with complete clinical documentation and transport arrangements, ensuring continuity of care and efficient utilization of resources.

9.2 Financial Plan

A dedicated emergency response fund is established to ensure rapid availability of financial resources during a pandemic. This fund supports procurement of essential supplies such as PPE, oxygen, drugs, and equipment, as well as emergency infrastructure modifications and staffing requirements. Financial planning includes allocation from government sources, contingency reserves, and special grants, with streamlined approval mechanisms to enable quick disbursement. Regular monitoring and transparent utilization of funds are maintained to ensure accountability and efficient resource management during the crisis.

9.3 After-Action Reviews

After-action reviews are conducted following each phase of the pandemic to evaluate the effectiveness of response measures. This includes policy audits, assessment of clinical outcomes, resource utilization, and operational challenges faced during the crisis. Feedback from healthcare workers and stakeholders is incorporated to identify gaps and best practices. The findings are used to refine protocols, update preparedness plans, and strengthen institutional resilience for future public health emergencies.

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

10.1 Clinical & Triage Protocols:

The Dual-Stream Triage System is implemented to ensure early identification, segregation, and management of patients with suspected infectious diseases while maintaining uninterrupted routine healthcare services.

1. Triage Screening Point

- All patients entering the hospital are first assessed at a central triage desk.
- Screening includes:
 - Temperature check
 - Symptom assessment (fever, cough, breathlessness, rash, etc.)
 - Relevant exposure/travel history
- Based on this initial evaluation, patients are categorized into Red Zone or Green Zone.

2. Red Zone (Infection-Suspected Area)

- Criteria:
Patients with symptoms suggestive of infectious diseases or relevant epidemiological risk.
- Location & Setup:
 - Physically separated area with restricted access
 - Dedicated entry/exit pathways to prevent cross-contamination
 - Adequate ventilation and infection control measures
- Services Provided:
 - Detailed clinical evaluation
 - Isolation and observation
 - Diagnostic testing (if required)
 - Stabilization and referral/admission to isolation wards
- Infection Control Measures:
 - Mandatory use of PPE by healthcare workers
 - Masking of patients

- Strict hand hygiene and biomedical waste management

3. Green Zone (Non-Infectious / Routine Care Area)

- Criteria:
Patients without signs or risk factors for infectious diseases.
- Services Provided:
 - Routine outpatient (OP) consultations
 - Emergency care for non-infectious conditions
 - Elective procedures and follow-ups
- Safety Measures:
 - Standard precautions maintained
 - Physical distancing in waiting areas
 - Continuous monitoring for any symptom development

4. Patient Flow & Monitoring

- Clear signage and staff guidance ensure smooth patient movement.
- Patients in the Green Zone are re-evaluated if symptoms develop.
- Referral protocols exist for rapid transfer from Green to Red Zone if needed.

Patient Admission & ID Banding

All patients undergoing admission are required to complete formal registration with unique hospital identification details.

- Mandatory **ID banding** is implemented for all admitted patients to ensure accurate identification throughout their hospital stay.
- Details of accompanying bystanders are recorded, including contact information, to facilitate tracing if required.
- Vehicle details (if applicable) are also documented as part of infection surveillance and security measures.
- Entry of bystanders is regulated, with restricted numbers and adherence to hospital infection control policies.

Testing Strategy – Government TD Medical College, Alappuzha

- A structured testing protocol is followed to minimize infection risk, especially in high-dependency units.

- Routine dialysis patients are subjected to testing in a 10-day cycle to ensure early detection of infections.
- **Rapid Antigen Tests (RAT)** are used for quick screening in emergency situations or prior to urgent procedures.
- Confirmatory testing (such as RT-PCR) is carried out when clinically indicated.
- Patients testing positive are promptly shifted to designated isolation or Red Zone areas for further management.

10.2 Infection Prevention & Control (IPC)

Respiratory & cough etiquette

General public with respiratory symptoms

- Wear a surgical mask
- Seek medical care
- Learn mask management

To combat the short supply of PPEs, the following is recommended by CDC and WHO.

- Perform hand hygiene before and after touching or adjusting the N95 mask

DO'S	DON'T'S
Use mask only when clinically indicated Surgical mask- when handling respiratory patients N95 mask- when doing aerosol generating procedures	Do not use mask when clinically not indicated Wearing masks when not indicated creates a false sense of security that can lead to neglect the other essential measures such as hand hygiene practices
Always hold by its strings	Don't touch/hold front/back part of mask
Fitting: Compress the mask to ensure a seal across nose bridge, face and cheeks	Do not allow tangling of mask around neck
Discard after 4-6h for surgical mask and 8h for N95 mask	Do not keep using mask for longer time/days Do not wash mask and reuse
Discard in yellow bags	Do not throw masks here and there after use

Environmental cleaning and disinfection protocol

Premises and areas, equipment potentially contaminated with the virus to be cleaned before their re-use. Contaminated surfaces can transmit infections to health care workers by direct contact with the surfaces. Hand hygiene is important to minimize this transfer.

Cleaning and disinfecting environmental surfaces are fundamental in reducing healthcare-associated infections

Cleaning agents and disinfectants

1. 1% Sodium Hypochlorite can be used as a disinfectant for cleaning and disinfection
2. The solution should be prepared fresh.
3. Leaving the solution for a contact time of at least 10 minutes is recommended.
4. Alcohol (e.g., isopropyl 70% or ethyl alcohol 70%) can be used to wipe down surfaces where the use of bleach is not suitable, e.g., metals.

Isolation room/ward/screening area	Disinfectant	Contact time	Frequency
High touch surface	Hypochlorite 0.5% (wipe)	10 minutes	4 hourly
Floor	Clean (soap & water) and then Hypochlorite 0.5% (mop)	10 minutes	8 hourly
Wall	Hypochlorite 0.5% (wipe)	10 minutes	Once daily
Toilet	Clean (soap & water) and then Hypochlorite 0.5% (wash)	20 minutes	Once daily
Corridor	Hypochlorite 0.5% (mop)	10 minutes	8 hourly

Non critical equipment (stethoscope, BP cuff, thermometer etc)	Alcohol wipes	10 minutes	After each use
Slippers, closed shoes	Soap and water first and then with Hypochlorite 0.1% (dip)	10 minutes	After use (at least once a day)
Terminal disinfection	Soap and water followed by 0.5% hypochlorite	10 minutes	As and when required
Used Linen	Hypochlorite 0.1%	30 minutes	As and when required

All other non- area (ward, ICU, EMS, OPD etc)	Disinfectant	Contact time	Frequency
High touch surface	Cidex 2%	15 minutes	4 hourly
Floor	Clean (soap & water) and then Hypochlorite 0.5% (mop)	10 minutes	8 hourly
Wall	Lysol 7	10 minutes	Once daily
Toilet	Clean (soap & water) and then Lysol 7%(wash) or Hypochlorite 0.5% (wash)	10 minutes	Once daily
Corridor	Hypochlorite 0.5% (mop)	10 minutes	8 hourly

Non critical equipment (stethoscope, BP cuff, thermometer etc)	Alcohol wipes	10 minutes	After each use
Slippers, closed shoes	Soap and water first and then with Hypochlorite 0.1% (dip)	10 minutes	After use (at least once a day)
Terminal disinfection	Soap and water followed by Cidex 2%	10 minutes	As and when required
Used Linen	Hypochlorite 0.1%	30 minutes	As and when required

Foot note:

- Contact time of at least 10 minutes is necessary for both Cidex or hypochlorite
- Since Hypochlorite can damage textiles and metals should be used mainly on hard, non-porous surfaces
- Surfaces (Table surfaces, slabs, walls, windows, equipment surfaces etc):
 - Wipes are recommended over spray for all reachable surfaces and high-touch areas including stainless steel, rubber and equipment surfaces
 - Spray is recommended for only non-reachable surfaces. Spray should be avoided in general, as coverage is uncertain and spraying may promote the production of aerosols.
- Floor: Mop is recommended.
- Bucket wipes- do not use for non-critical areas like fans, walls, doors etc. First, wipe with plain water and then can disinfect with Lysol.
- PPE: Housekeeping staff should wear appropriate PPE when handling and transporting used patient care equipment (gloves) or while cleaning/disinfecting ward (surgical mask, gown, heavy duty gloves, eye protection if risk of splash, Boots or closed work shoes)

- Housekeeping staff should wash their hands with soap and water immediately after removing the PPE, and when cleaning and disinfection work is completed.
- Dishes and eating utensils used by a patient with known or suspected infection: No special precautions other than standard precautions such as hand hygiene and wearing gloves when handling patient trays, dishes and utensils.

Measures during mopping

- Progress from the least soiled areas to the most soiled areas and from high surfaces to low surfaces
- Remove gross soil (visible to naked eye) prior to cleaning and disinfection
- Never shake mops: Minimise turbulence to prevent the dispersion of dust that may contain micro-organisms
- Use dust control mop prior to wet/damp mop. Do not use brooms
- Wash the mop under running water before doing wet mopping
- Do not 'double-dip' mops (dip the mop only once in the cleaning solution, as dipping it multiple times may re-contaminate it)
- An area of 120 square feet to be mopped before re-dipping the mop in the solution
- Cleaning solution to be changed after cleaning an area of 240 square feet. (i.e., Change solution for every room)
- Change more frequently in heavily contaminated areas, when visibly soiled and immediately after cleaning blood and body fluid spills.
- Cleaning sequence: Always clean should be proceeded in a top-to-down sequence i.e., ceiling-based equipment first, walls, then floor-based equipment and lastly the floor.
 - When cleaning the floor, begin at the end farthest from the door and move towards the door (in to out).
 - The cleaning staff should always move from clean to unclean areas and never vice versa
 - When cleaning individual equipment: clean from top to down

- Eight stroke techniques for mopping: In open areas use a figure eight stroke in open and wide spaces, overlapping each stroke; turn mop head over every five or six strokes.
 - While in small spaces, starting in the farthest corner of the room, drag the mop toward you, then push it away, working in straight, slightly overlapping lines and keeping the mop head in full contact with the floor.
 - Repeat until entire floor is done.
- Disinfection: After cleaning, all equipment used for cleaning, wash with soap and hot water; followed by decontamination with 0.5 hypochlorite 10 min and then dry it in sunlight
- Change the mop head when heavily soiled or at the end of the day.
- Report adverse incident to supervisor
- Collect waste, handle plastic bags from the top (do not compress bags with hands)
- Clean hands on leaving the room.

Measures during surface wiping

- Go from clean to unclean area and top to down
- No. of strokes per wipe- vary depends on area and material and size of the wipe
- Use new wipe for each use
- Never do zig-zag cleaning, never do re-dipping of cloth

Preparation of sodium hypochlorite

Household Bleach Solution	Dilution	Preparation	Chlorine (PPM)
Neat (5%) (5.25-6.15%)	None		50,000
0.5% of sodium hypochlorite	1:10	1 volume of neat + 9 volumes of cold tap clean water	5000
0.05% of sodium hypochlorite	1:100	1 volume of neat + 99 volumes of cold tap clean water	500

1% of sodium hypochlorite	1:5	1 volume of neat + 4 volumes of cold tap clean water	10,000
0.1% of sodium hypochlorite	1:50	1 volume of neat + 49 volumes of cold tap clean water	1000

Preparation of sodium hypochlorite from bleaching powder

Calcium hypochlorite powder or granules	Dilution	Preparation	Chlorine(ppm)
0.5% of sodium hypochlorite	1:10	7g (0.5 tablespoon) per 1 litre of water	5000
0.05% of sodium hypochlorite	1:100	7g (0.5 tablespoon) per 10 litres of water	500
1% of sodium hypochlorite	1:5	14g (1 tablespoon) per 1 litre of water	10,000
0.1% of sodium hypochlorite	1:50	14g(1 tablespoon) per 10litre of water	1000
10% of sodium hypochlorite		140g (10tablespoonful) per 1 litre of water	100,000

$[\% \text{ chlorine desired} / \% \text{ chlorine in bleach powder}] \times 1000 = \text{Grams of bleach powder for each litre of water}$

Cleaning and disinfection SOP

Isolation ward/room (when patient is occupied)

- Floor - mop with sodium hypochlorite (0.5%, 5000ppm) three times a day
- Disinfection with 70-90% alcohol for reusable dedicated equipment (e.g., thermometers) hourly
- High touch area: Wipe with sodium hypochlorite (0.5%, 5000ppm)
- Low touch area (wall and ceiling) with Lysol 7%: daily once

- Designate specific well-trained staff for cleaning environmental surfaces
- Wear appropriate PPE - heavy duty gloves, mask, eye protection (goggles/face shield), long-sleeved gown, apron (if gown is not fluid resistant), and boots or closed shoes
- The supervisor must use a checklist to promote accountability for cleaning Responsibilities

Terminal disinfection (After Corona patient discharge or transfer or death)

- Clean with Soap and water followed by disinfection with 0.5% hypochlorite: All surfaces and floor including walls, ceiling, toilet etc that were in contact with patient or may have become contaminated during patientcare followed
- Disinfection with 70-90% alcohol for reusable dedicated equipment (e.g., thermometers
- Do not spray or fog occupied or unoccupied rooms with any disinfectant - potentially dangerous practice as it may create aerosols and has no proven benefits
- Wear appropriate PPE - heavy duty gloves, mask, eye protection (goggles/face shield), long-sleeved gown, apron (if gown is not fluid resistant), and boots or closed shoes

Cleaning of dishes and eating utensils used by an infected patient

- No special precautions other than standard precautions
- Wear gloves when handling patient trays, dishes and utensils

Area/Items	Agent	Process	Method/ procedure
Stethoscope	Alcohol-based rub/Spirit swab	Cleaning	• Should be wiped with alcohol-based rub/spirit swab before and after each patient contact

BP cuffs & covers	Detergent water	Washing	Cuffs should be wiped with alcohol- based disinfectant and regular laundering is recommended for the cover
Thermometer	Detergent and water Alcohol rub	Cleaning	- Should be stored dry - Clean with detergent and water daily - wipe with alcohol in between patient use - Preferably one thermometer for each patient
Injection and dressing trolley	Detergent and water Disinfectant (70% alcohol)	Cleaning	- To be cleaned daily with detergent and water - After each use should be wiped with disinfectant
Mobile phones and landline phones	Alcohol wipes	Front and back	- Twice per shift and also before leaving workplace - Switch off during wiping
Ventilator Monitor Defibrillator USG machine	Liquid Detergent followed by - Alcohol wipe - Cidex 2%		Disinfectant will work only when detergent removes the organic matter

Ventilator tubing	• ETO • Preferably single use	Sterilization	• First do enzymatic cleaning and then send for ETO /plasma sterilization • Check for type-Chemical
Ventilator-suction apparatus	Cidex 2%	Disinfection	Discard the suction fluid as per BMW rule, then immerse in detergent followed by water and finally in Cidex 2% for 10-15 min

High touch surfaces

High touch surfaces should be cleaned and/or disinfected more frequently (clean 4 hourly or earlier)

- Bed rails
- Bed frames
- Bedside table
- Door handles
- IV stand
- Blood-pressure cuff
- Wall areas around toilet of patient
- Mobile and telephone
- Lift buttons
- Hand rails (stair case)
- Side rails of stretches Chair arms (including wheel chairs)

Cleaning of lift

- 3 people per lift at a time: Maintain two arm distances
- Hand rub/wash before and after lift use
- Detergent and water 3 times a day

- Clean high touch area of lift such as lift-buttons, rails and adjacent-wall area, door every one hour with alcohol
- Clean lift of other area every 8 hourly

10.3 Engineering & Infrastructure SOPs

AIIR (Airborne Infection Isolation Room) Conversion

- Selected patient care areas have been converted into Airborne Infection Isolation Rooms (AIIRs) to manage patients with suspected or confirmed airborne infections.
- Return air vents are physically sealed or blocked to prevent recirculation of contaminated air within the HVAC system.
- Exhaust systems have been optimized to ensure directional airflow from clean to contaminated areas.
- Ventilation adjustments are carried out to achieve approximately ≥ 12 Air Changes per Hour (ACH), either through mechanical systems or by augmenting natural ventilation where feasible.
- Negative pressure environments are functionally maintained in designated rooms to reduce airborne transmission risk.
- Regular monitoring of airflow patterns and ventilation performance is conducted by the engineering team.

Operation Theatre (OT) Modification

- Designated operation theatres have been modified to safely conduct procedures during infectious disease outbreaks.
- HVAC systems are adapted to function as 100% once-through systems, eliminating air recirculation and ensuring fresh air intake with appropriate exhaust.
- Positive pressure settings are selectively neutralized or adjusted depending on the type of surgery and infection risk.
- High-efficiency filtration mechanisms are ensured within the airflow system to maintain sterile surgical conditions.
- Separate pathways and zoning are maintained for patient transfer, staff movement, and waste disposal to minimize contamination.
- Enhanced air exchange and terminal cleaning protocols are followed between surgical cases.

Makeshift Enclosures and Temporary Isolation Units

- Temporary cubicles, partitions, and tent-based enclosures have been established in high-demand areas such as emergency units and triage zones.
- These enclosures are equipped with localized HEPA filtration units to improve air quality and reduce airborne pathogen load.
- Flexible infrastructure allows rapid expansion or reconfiguration based on patient load and outbreak severity.
- Physical barriers ensure segregation of suspected and non-suspected patients, supporting the dual-stream triage system.
- Adequate spacing, ventilation, and accessibility for monitoring and emergency interventions are maintained.

Implementation and Monitoring

- All engineering modifications are carried out in coordination with infection control teams.
- Periodic assessment of ventilation efficiency, filter performance, and airflow direction is conducted.
- Maintenance teams ensure uninterrupted functioning of HVAC systems and rapid response to any technical issues.

10.4 Logistics & Waste Management

The institution has established robust logistics and waste management systems to ensure infection control, environmental safety, and uninterrupted critical care support.

Biomedical Waste (BMW) Management

Isolation wards need to follow these steps to ensure safe handling and disposal of biomedical waste generated during patient care.

Colour coded bag/box	Items	Disposal method
Yellow	Infectious non-plastic, non-sharp	Incineration
Red	Infectious plastic, non-sharp	Autoclave or microwave (recycle)
White sharp	Sharp (metal)	Sharp pit
Blue Box	Glass, metal implants	Autoclave (recycle)

Follow the same principle segregation of waste as per BMW Rules, 2016.

Important steps in BMW management in facility

- Keep separate dedicated color-coded bins/bags/containers in corona isolation wards and should be labelled
- Double layered bags (using 2 bags) should be used for collection of waste from isolation wards so as to ensure adequate strength and no-leaks
- Use dedicated trolley and collection bins and labelled
- Waste collected in such isolation wards is lifted directly from collection bins into IMAGE collection vehicle.
- Disinfection: The inner and outer surface of collection bins/ trolleys should be disinfected with 0.5 % sodium hypochlorite
- General waste not having contamination should be disposed as solid waste (black bag)
- The cleaning staff on duty donned in full PPE must collect waste.

Linen & Laundry Management

- Used linen from patient care areas is handled with strict infection control precautions.
- Linen is collected in **leak-proof, labelled containers or bags** to prevent exposure and contamination during transport.
- **Double bagging is avoided** unless there is visible contamination or risk of leakage, thereby reducing unnecessary biomedical waste generation.
- Contaminated linen is directly transported to the laundry facility through designated pathways.
- Standardized washing protocols involving appropriate disinfectants and thermal processing are followed to ensure effective decontamination.
- Minimal handling is ensured to reduce aerosol generation and occupational exposure risk.

Oxygen War Room & Supply Management

- A centralized **“Oxygen War Room” system** is operational to monitor and manage oxygen resources efficiently.
- Real-time tracking of oxygen consumption across wards, ICUs, and high-dependency units is carried out.

- Continuous monitoring ensures **optimal allocation and redistribution** based on patient load and clinical requirements.
- Adequate **reserve capacity** is maintained through backup cylinders, manifold systems, and storage tanks to handle surge demands.
- Coordination between clinical teams, biomedical engineers, and supply units ensures uninterrupted oxygen availability.
- Preventive maintenance and regular audits of oxygen pipelines and delivery systems are conducted to avoid disruptions.

10.5 Specialized & Support Service Guidelines

Dialysis Unit SOP – Infection Control

1. Definitions

Positive patients: Patients with transmissible infections such as Hepatitis B, Hepatitis C, HIV, or others as per institutional policy.

2. Dedicated Tubing Policy

Hepatitis B

- Dedicated dialysis machine required
- no reuse of dialyzer and tubings- dispose as biohazard waste
- Separate area/room
- Separate staff if possible
- No sharing of supplies with HBV-negative patients Hepatitis C / HIV
- No strict isolation required
- Standard precautions mandatory
- No reuse of dialyser/tubings-Dispose as biohazard waste

3. Face Shield Requirements

For infectious patients

Face shield is mandatory during:

- Cannulation and decannulation
- Handling bloodlines
- Managing blood spills
- Disconnecting dialysis circuits
- during central venous catheterisations.

- During the reprocessing of blood tubings and dialysers

4. Standard Infection Control

- Hand hygiene before and after patient contact
- Disinfection of machine after each session
- Do not share tourniquets or BP cuffs unless disinfected
- Proper biomedical waste disposal

Management of the Deceased:

Dead body management

Standard Precautions to be followed by HCWs while handling dead bodies

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.

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.

1) Overall recommendations

- Body bag- One body bag, robust leak-proof of 150µm thickness is needed.
- Viewing of the body -is allowed with standard precautions
- Embalming of dead body should not be allowed.
- Hygienic preparation- either not allowed, or allowed with appropriate PPEs
- Autopsy- need to avoided as much a possible
- Final treatment- either cremation or cuffing depending up on the religious practice; however, cremation is more advisable.

2) Specific recommendations

- Removal of the body from the isolation room or area
- The health worker attending to the dead body should perform hand hygiene, ensure proper use of PPE (water resistant apron, goggles, N95 mask, gloves).

- All tubes, drains and catheters on the dead body should be removed.
- Any puncture holes or wounds (resulting from removal of catheter, drains, tubes, or otherwise) should be disinfected with 1% hypochlorite and dressed with impermeable material.
- Apply caution while handling sharps such as intravenous catheters and other sharp devices. They should be disposed into a sharp's 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 (hand hygiene, mask and gloves)
- Place the dead body in leak-proof plastic body bag. The exterior of the body bag can be decontaminated with 1% hypochlorite.
- The body bag can be wrapped with a mortuary sheet or sheet provided by the family members.
- The body will be either handed over to the relatives or taken to mortuary.
- All used/ soiled linen should be handled with standard precautions, put in bio-hazard bag and the outer surface of the bag disinfected with hypochlorite solution.
- Used equipment should be autoclaved or decontaminated with disinfectant solutions.
- All floor, wall, ceiling, high touch area and medical care equipment used should be disinfected/mopped with 1% hypochlorite solution.
- Do not do fogging or spray of the isolation room.
- All medical waste must be handled and disposed of in accordance with Bio-medical waste management rules.
- The health staff who handled the body will remove personal protective equipment, discard inappropriate waste bins and will perform hand hygiene

3) 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 airdry.

4) Handling of dead body in Mortuary

- Standard precautions have to be followed
- Dead bodies should be stored in cold chambers maintained at approximately 4°C.
- 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

5) Autopsies

The following infection prevention control practices should be adopted:

- The team should be well trained in infection prevention control practices.
- The number of forensic experts and support staff in the autopsy room should be limited.
- The team should use full complement of PPE (coveralls, head cover, shoe cover, N 95 mask, goggles / face shield).
- Reduce aerosol generation during autopsy using appropriate techniques especially while handling lung tissue.
- After the procedure, body should be disinfected with 1% Sodium Hypochlorite and placed in a body bag.
- The exterior of the bag will again be decontaminated with 1% Sodium Hypochlorite solution.
- The body thereafter can be handed over to the relatives.
- Autopsy table to be disinfected as per standard protocol.

6) Transportation

- 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

7) At the crematorium/ Burial Ground

- The staff will practice standard precautions of hand hygiene, use of masks and gloves.
- Bathing, kissing, hugging, etc. of the dead body should not be allowed.
- The ash does not pose any risk and can be collected to perform the last rites.
- Large gathering at the crematorium/ burial ground should be avoided as a social distancing measure it is possible that close family contacts may be symptomatic and/ or shedding the virus.

Maternal & Child Health SOP:

Purpose:

Ensure safe care for mothers and neonates during a pandemic while minimizing infection risk.

Admission Rules:

- Mother and child admitted together whenever feasible to minimize movement and exposure.
- Suspected or confirmed infectious cases placed in dedicated Red Zone MCH wards.
- Non-infectious patients continue in routine Green Zone maternity wards.

Transfer Rules

- If mother requires ICU/critical care, child remains in adjacent isolation or neonatal unit with trained staff.
- Transfers between wards or hospitals require pre-notification and dedicated transport routes.
- Use dedicated lifts, trolleys, and PPE during transfers.

Infection Control

- Strict hand hygiene and PPE use by all staff handling mother or neonate.
- Surfaces, baby incubators, and maternal beds disinfected with 1% hypochlorite solution after each patient use.

Staffing & Monitoring

- Assign dedicated staff teams for mother-child pairs to limit cross-contact.
- Continuous monitoring of vital signs and COVID symptoms for both mother and child.

Documentation & Communication

- Maintain logs of admissions, transfers, and any exposures.
- Inform parents and staff about infection prevention protocols and movement restrictions

Psychological Support Services

The institution recognizes the importance of holistic care and has integrated psychological support and essential service coordination into routine hospital functioning, especially during high-stress and pandemic situations.

- Structured psychological support systems are in place for patients, bystanders, and healthcare staff to address stress, anxiety, and burnout.
- Counselling services are provided through trained mental health professionals from Psychiatry and allied departments.
- Dedicated support is extended to:
 - Families of critically ill patients
 - Patients in isolation or long-term care
 - Healthcare workers exposed to high workload and emotional stress
- Regular interaction and counselling sessions are conducted, both in-person and through telecommunication when required.
- Staff are encouraged to report early signs of burnout, fatigue, or psychological distress, and are provided timely intervention.

- Peer-support mechanisms and team debriefing sessions are practiced to improve coping and resilience.
- Confidentiality and a non-judgmental approach are strictly maintained in all counselling activities.

Food & Dietary Services

- Nutritional support is ensured through a coordinated system involving hospital dietary services and **Local Self-Government Department (LSGD)**.
- Timely provision of hygienic, balanced meals is ensured for all admitted patients, including those in isolation wards.
- Meal planning is carried out based on:
 - Patient's clinical condition
 - Dietary requirements (e.g., diabetic, renal, high-protein diets)
 - Physician and dietician recommendations
- Special arrangements are in place for:
 - Patients in isolation areas (contactless delivery protocols)
 - Critically ill patients requiring tailored nutrition
- Food distribution follows strict infection control measures, including use of appropriate PPE and minimal contact handling.
- Continuous coordination with LSGD ensures uninterrupted food supply, even during surge periods or emergencies.
- Feedback mechanisms are in place to monitor food quality, adequacy, and patient satisfaction.

11. Conclusion

This Pandemic Preparedness Plan aims to ensure that GTDMC Alappuzha remains resilient, responsive, and capable of delivering essential healthcare during pandemics while safeguarding the health and well-being of patients and health care workers.

Prepared by RPEID CELL & Hospital Infection Control Committee (HICC)

Govt. T.D Medical College, Alappuzha

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