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Department of Health Services

May 2026

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PANDEMIC MANAGEMENT PLAN
Alappuzha

Philomina serin Reena Mahesh Rahul Krishna Sharma Sweta Lijo Peter Anjali Annie George Aarima Anandakrishnan Philomina Serin Dileep Bhagyalakshmi Anjali Annie George Shwetha Ramesh Bijoy Ajan Adya Reghu Nandu Nandakumar Krishnapriya M J Vinay Goyal Reetha Viswanathan Sheeba George Dileepkumar Sunija Manoj M Arun Harikumar Jithesh Philomina serin Reena Mahesh Rahul Krishna Sharma Nandu Nandakumar Krishnapriya M J Vinay Goyal Reetha Viswanathan Sheeba George Dileepkumar Sunija Manoj M Arun Harikumar Jithesh Philomina serin Reena Mahesh Rahul Krishna

Department of Health and Family Welfare
Government of Kerala
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PANDEMIC MANAGEMENT PLAN

Alappuzha District

KERALA.HEALTH

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 up to 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 ‘Health System”. The outbreak of diseases is common across the world. But the important thing that stands out is public awareness, their advisory-abiding behaviour, accessing hospital and getting diagnosed. That is the reason that outbreaks of Nipah or M Pox are detected early and scientifically managed without any hassle.

Public health emergencies and pandemics remind us that health systems must remain prepared, responsive, and closely connected with the community. The recent experiences of the COVID-19 pandemic and various other communicable disease outbreaks especially involving newer pathogens have shown that timely preparedness, a coordinated response, and strong community participation are essential to the reduction of health risks and protection of lives. Kerala Health has managed COVID in exemplary ways with the involvement of people and all the line departments. Following the COVID pandemic, all international and national organizations have worked on preparedness and published guidelines, books and papers. But the most important question one should ask “Have we learned our lessons?” and “In what way these learning we have put to practice managing future health emergencies?”

It is with this thought process of “WHAT IS NEXT?”, a series of meetings were taken with Senior Medical Officers at the State level and district level of Directorate of Health Services. All officers of Medical Colleges and other stakeholders were also oriented to prepare the Pandemic Management Plans. Series of workshops were conducted in the districts to further follow up works done by the district teams.

The concept of ‘Learning by Doing’ was put to practice. NHM has deployed Epidemiologists in all Block FHCs. It was important to build their capacity to ensure day to day involvement in analysis and giving inputs for taking control and mitigation activities. Alappuzha district took the challenge and prepared a template. Dr Dileep and team took wholehearted efforts to work on this task. The prepared template was validated and sent to all concerned.

Later the district officers conducted series of capacity building meetings with all health as well as line departments functionaries. They submitted the first draft and conducted a workshop in which few plans of Panchayath, Block and major institutions in the Districts such as General Hospital, District Hospital and Medical Colleges were presented. Post discussions and getting feedback the district team fine-tuned the Plans. As Alappuzha district completed all Panchayaths and District Plans in depth, they were made into a ‘Learning Site’. Another concept of capacity building was put to practice. All the key officers of the respective districts were sent to Alappuzha in two batches to understand the method with which the Pandemic Preparedness Plans should be prepared. This

exposure and interactions were very useful as most of the officers realised the importance of doing such planning.

The state level resource team comprising of Dr Mahesh N, Dr Ajan M J, Dr Harikumar S, Dr Bijoy E, Dr Dileepkumar S R and others supported the district teams and all the districts prepared the Pandemic Management Plans. Dr Vinay Goyal then SMD NHM and Mr Rahul Sharma present SMD NHM provided their leadership to facilitate plans preparations.

Simultaneously this initiative was discussed with Digital University of Kerala, and they were engaged to develop Kerala Pandemic Management System. This system envisages an end-to-end solution for pandemic management. This will make things easy for the field workers and all functionaries at the health institutions to update the information. As we go forward, it is envisaged that HOEC shall work as Hub and information flow will be from Kerala Pandemic Management System, IDSP, IHIP, SDMA and other information sources to HOEC at the time of any disaster/ health emergency.

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 eight 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.

I would like to highlight here that these plans are not only at the state and district level but up to the Panchayath level. We first oriented and coordinated work on the Panchayath Pandemic Preparedness Plans. These plans were collated to make Block Plans. At the same time District teams worked on the District Pandemic Plans be taking the details from Panchayath Plans as well as the assets available at the district. This has made our Grama Panchayat/Municipality/Corporation equipped to effectively prevent, detect, and respond to public health emergencies. The plan serves as a framework for coordinated action involving the Health Department and other line departments, organisations, volunteers and other stakeholders at the local self-government level. The plans follow a One Health approach, recognizing the close relationship between human health, animal health, and the environment in the emergence and spread of diseases. Strengthening disease surveillance, infection prevention and control measures, environmental sanitation, risk communication, and community awareness are all important components of local preparedness.

We incorporated surge preparedness plans which can be adopted quickly during a public health emergency. Particular attention was also given to vulnerable populations including the elderly, children, persons with disabilities, individuals with chronic illnesses, and socially disadvantaged groups who may face greater risks during emergencies. Early reporting, community engagement,

and coordinated interdepartmental action are critical for minimizing the impact of outbreaks and ensuring continuity of essential health services.

Kerala Health has taken this initiative for the last six months; there are hundreds of officers involved in preparing and completing such a huge task. Therefore, the design of the book is also done in a different way. It was decided that the officers who hands on worked on this project should be mentioned prominently. As this is a unique milestone achieved by Kerala Health, the sincerely working officers' names are put on the cover itself.

These tasks would not have been possible without the support of the state resource officers' team of Dr Vinay Goyal, Mr Rahul Sharma, Dr Mahesh, Dr Ajan, Dr Dileepkumar, Dr Harikumar, Dr Ravindran, and many others. I appreciate their untiring efforts and patience for agreeing to do additional things which I pushed to them in the last minutes.

I sincerely appreciate the efforts of one and all and I am confident that Kerala Health team is having capability and will to take up any challenge and excel in their endeavours.

Dr Rajan N Khobragade IAS

Additional Chief Secretary

Health and Family Welfare Department

Government of Kerala

Message

When we look at public health through an operational lens, it becomes clear that managing a crisis is as much about robust architecture as it is about public health interventions. A successful response relies on the strength of our systems: seamless data flows, efficient resource deployment and reliable communication networks.

The COVID-19 pandemic was an inflection point for public health systems worldwide. Its exposed vulnerabilities tested our capacity to respond under pressure and reinforced the irreplaceable value of preparedness. As we move forward, it is imperative that the lessons we learnt from that experience are institutionalised and embedded into the very fabric of how our districts plan, coordinate, and respond to health emergencies.

This District Pandemic Preparedness Plan represents a significant milestone in our collective journey toward building resilient and responsive public health systems across the State. It is the outcome of sustained collaboration, ground-level insight, and an unwavering commitment shared by every member of our health team. From an administrative perspective, this plan is the blueprint that translates vital epidemiological data into actionable workflows on the ground. It ensures that our infrastructure, logistics, and human resources are perfectly synchronized, enabling our medical teams to deliver care without delay.This Plan has been designed to serve as a practical, actionable guide for our health teams. It outlines clear roles and responsibilities, establishes robust surveillance and early warning mechanisms, streamlines supply chain and logistics frameworks, and ensures that our health workforce is trained, equipped, and supported to respond to emergencies. A preparedness plan is only as strong as the systems that sustain it, and this document reflects our shared commitment to building those systems with care and rigour.

I place on record my sincere appreciation for the district health team and all other stakeholders whose knowledge and commitment have shaped this framework. Their dedication to public health service is a source of great strength for us. I also call upon them to internalise this plan, champion its implementation, and treat preparedness not as a mandate from above, but as a professional and moral obligation to the communities we serve. Together, we have the capacity and the responsibility to ensure that no community in our State is caught unprepared.

Rahul Krishna Sharma IAS

State Mission Director, National Health Mission

Message

At the heart of an effective public health response is a simple truth: - a strong healthcare system doesn't just react to a crisis—it anticipates and prepares for it. Our true readiness is measured by how quickly and empathetically we can turn complex medical strategies into organized care on the ground.

Our District Pandemic Preparedness plans serve as a clinical and tactical guide. They bridge the gap between public health data and reality, turning data into clear action plans for our frontline workers. This ensures that everyone from Family Health Centres to major hospitals operates with complete clarity and a shared purpose.

A pandemic requires a balance of science and human compassion. While we look at data, trends, and logistics to plan our resources, our ultimate focus remains on the people and families behind those numbers. Ensuring clinical readiness, securing medical supply chains, and maintaining unbroken communication networks are the pillars that allow our medical teams to respond to emergencies and save lives.

I want to express my deepest gratitude to our public health workforce; your dedication is the foundation of our resilience. In particular, I thank the DMO, DPM, district program officers, medical officers, public health staff, and every member of the health team who worked tirelessly to bring this plan to life. By embedding these strategies into our daily work, we are doing more than just preparing for a future crisis—we are actively safeguarding the health, dignity, and future of our communities.

Let us continue to lead with science, serve with empathy, and strengthen our collective resilience.

Dr Reena K J

Director of Health Services

Message

Alappuzha, often celebrated as the "Venice of the East," possesses an ecophysiology as delicate as it is beautiful. Our district is defined by a unique landscape of below-sea-level farming in Kuttanad, an intricate network of inland waterways, and a high density of coastal and migratory bird populations. While this ecosystem is our pride, it also presents distinct public health challenges. The proximity between human habitats, domestic livestock, and migratory corridors creates a highly sensitive environment for the emergence and transmission of infectious diseases. In the recent past, we have stood at the frontlines of global health crises. From the unprecedented challenges of the COVID-19 pandemic to the recurrent outbreaks of Avian Influenza (H5N1) that threaten our poultry sector and ecological health, Alappuzha has repeatedly been tested. These experiences have taught us a vital lesson: in the face of a biological threat, time is our most precious commodity, and clarity of action is our strongest weapon. The "Pandemic Preparedness Plan - Alappuzha District" is a proactive response to these lessons. It moves us away from the traditional "emergency response" mindset toward a state of permanent readiness.

The formulation of this plan has been a monumental task, and its success hinges on the pivotal role of the District Health Department. Under the visionary leadership of the District Medical Officer (DMO), the health team has meticulously mapped our vulnerabilities and designed a robust framework for containment and care. I wish to personally commend the entire District Health Team for this novel initiative, the first of its kind in the State of Kerala. By documenting these protocols, Alappuzha once again sets a benchmark for public health governance in the state. However, a pandemic is not a challenge for the Health Department alone. This document underscores the supplementary yet critical role of all line departments. Whether it is the logistical support of the Revenue and Transport departments, the grassroots mobilisation of the LSGD, or the specialised expertise of the Animal Husbandry and Environment sectors, this plan serves as the manual for our collective synchronised action.

A plan of this magnitude cannot be static. As pathogens evolve and our environment changes, so must our strategies. I wish to emphasise that this document is a living entity. It demands frequent and rigorous updating to incorporate the latest scientific data, technological advancements in surveillance, and feedback from mock drills and real-world scenarios. I place this document before the citizens and administrators of Alappuzha as a testament to our resilience and our commitment to a safer, healthier future.

Alex Varghese IAS

District Collector Alappuzha

Message

The global public health landscape has undergone a seismic shift. For Alappuzha—with its intricate backwaters, high population density, and delicate human-wildlife interface—infectious disease is a recurring reality rather than a theoretical risk. While our primary healthcare system is remarkably resilient, recent exigencies have highlighted the need for robust real-time genomic surveillance, streamlined surge capacity, and synchronised digital communication between peripheral units and tertiary centres.

This Pandemic Preparedness Plan is born out of the necessity to transition from a reactive "crisis-management" model to a proactive, "preparedness-first" institutional framework. It acknowledges that the health of our citizens cannot be viewed in isolation. Through the One Health lens, this plan integrates human health, animal husbandry, and environmental sectors, recognising that a spillover in our livestock or a change in our aquatic ecosystem is often the first herald of a human pandemic. Intersectoral collaboration serves as the cornerstone of this document. It represents a formal commitment that the battle against a pathogen is not the burden of the Health Department alone, but a synchronised effort involving every administrative arm of the district to ensure logistical, social, and medical synergy.

The formulation of this comprehensive strategy is the result of collective wisdom and the tireless dedication of our district's health fraternity. I extend my profound gratitude to the most respected Additional Chief Secretary Dr Rajan N Khobragade, IAS & District Collector Sri Alex Varghese, IAS, for the continuous guidance for materialising this novel initiative. I may extend my extreme pleasure to our District Surveillance Officer, whose constant vigilance remains our first line of defence, and to the Deputy DMOs and District Level Program Officers for their strategic oversight and technical expertise in drafting these protocols. My sincere thanks go to the Superintendents of our Major Hospitals, the Block Level Medical Officers (BMOs), and the Charge Medical Officers of our peripheral institutions. You are the anchors who translate complex policy into life-saving action at the point of care. Our true strength lies in our field-level warriors.

I commend the Health Supervisors, Epidemiologists, Health Inspectors, and Junior Health Inspectors for their precision in contact tracing and environmental health. My deepest appreciation goes to our Public Health Nurses (PHN), Junior Public Health Nurses (JPHN), and Mid-Level Service Providers (MLSP), whose grassroots connection with the community is the backbone of our public health delivery. I also recognise the vital role of

our Data Managers and the entire administrative Health Team of Alappuzha, whose work behind the scenes ensures that our decisions are driven by accurate, real-time evidence. We are deeply indebted to the District Disaster Management Authority (DDMA) for their administrative leadership during crises. A special word of thanks is reserved for the Local Self-Government Department (LSGD) and other line departments.

This Pandemic Preparedness Plan is not a static document intended for a shelf. It is a dynamic roadmap that will undergo continuous and rigorous updating. We remain committed to evolving alongside emerging scientific evidence, technological advancements, and shifting epidemiological trends. We will continue to refine our strategies to ensure that Alappuzha remains not just reactive to threats, but resilient against them.

Dr Jamuna Varghese

DMO(H) Alappuzha

Message

The global public health landscape is undergoing a profound transformation, marked by increasing uncertainty, interconnected risks, and the constant emergence of novel infectious threats. In this era of unprecedented complexity, pandemics are no longer rare, isolated events but recurring challenges shaped by rapid urbanization, climate variability, ecological disruption, and intensified human mobility. For Alappuzha—a district uniquely characterized by dense human settlements interwoven with fragile backwaters, low-lying wetlands, and a dynamic human–animal–environment interface—these risks are not theoretical. They are immediate, evolving, and deeply embedded in our ecological and socio-economic fabric.

Historically, Alappuzha has demonstrated commendable resilience in responding to public health emergencies. The district's primary healthcare system, strengthened through decades of public health investment and community participation, has repeatedly risen to the challenge during outbreaks and disasters. However, recent global and local experiences have made it unequivocally clear that resilience alone is not sufficient. The scale, speed, and unpredictability of modern pandemics demand a fundamental paradigm shift—from reactive crisis management to anticipatory governance, from fragmented response to integrated preparedness, and from sectoral functioning to whole-of-system coordination.

This District Pandemic Preparedness Plan represents that strategic transition. It is not conceived as a static repository of guidelines, but as a dynamic, adaptive, and continuously evolving framework that integrates scientific evidence, operational pragmatism, and community engagement. The plan is grounded in the principles of foresight, flexibility, and inclusiveness, ensuring that preparedness is not confined to protocols but embedded within the very architecture of governance and service delivery.

Central to this framework is the One Health approach, which recognizes the intrinsic interconnectedness of human health, animal health, and environmental integrity. In a district like Alappuzha, where livelihoods, ecosystems, and habitation patterns are closely linked, the boundaries between these domains are fluid. Zoonotic spillovers, vector proliferation in waterlogged areas, antimicrobial resistance in livestock, and ecological disturbances in wetlands can all serve as early warning signals of potential public health crises. Therefore, safeguarding population health necessitates a coordinated, multidisciplinary response involving the Health Department, Animal Husbandry, Fisheries, Environment, Disaster Management, and Local Self-Government institutions. Intersectoral collaboration is not merely desirable—it is the cornerstone of an effective and sustainable defence against pandemics.

This plan is the culmination of collective expertise, field experience, and institutional commitment. It reflects the tireless efforts of Alappuzha's health fraternity and the visionary leadership that has guided its development. I express my profound gratitude to Dr. Rajan N. Khobragade IAS, Additional Chief Secretary, and Sri Alex Varghese IAS, District Collector, whose strategic direction and unwavering support have been instrumental in shaping this initiative. The dynamic leadership

and hands-on involvement of District Medical Officer Dr. Jamuna Varghese have been central to this effort, ensuring that the plan is both operationally grounded and responsive to the evolving public health landscape of the district. Her ability to mobilize teams, foster intersectoral coordination, and translate policy into action has significantly strengthened the district's preparedness framework. I extend my sincere appreciation to the Deputy District Medical Officers and District Programme Officers, whose technical acumen and strategic oversight have ensured that this document is both scientifically robust and operationally feasible. The contributions of Superintendents of major hospitals, Block Medical Officers, and Charge Medical Officers are deeply valued, as they translate policy into practice, ensuring that preparedness measures are effectively implemented at every level of care.

The strength of our public health system lies in its foundation—our field-level workforce. Health Supervisors, Epidemiologists, Health Inspectors, and Junior Health Inspectors play a pivotal role in surveillance, outbreak investigation, and environmental health management. Their meticulous work in case detection, contact tracing, and risk mitigation forms the backbone of our containment strategies. Equally indispensable are our Public Health Nurses, Junior Public Health Nurses, and Mid-Level Service Providers, whose close engagement with communities fosters trust, enhances health literacy, and ensures timely intervention at the grassroots level.

Behind this visible front line stands a robust support system. Data Managers and administrative health teams provide the analytical backbone for evidence-based decision-making, transforming raw data into actionable insights. The District Disaster Management Authority (DDMA), the Local Self-Government Department (LSGD), and allied line departments have demonstrated exemplary coordination, reinforcing the principle that pandemic preparedness is not the responsibility of a single sector, but a shared mandate across governance, infrastructure, logistics, and social systems.

This preparedness plan delineates a set of clear, strategic priorities designed to strengthen the district's capacity to anticipate, detect, and respond to public health threats:

- Strengthening integrated disease surveillance systems, including real-time data integration and genomic monitoring, to enable early detection of emerging pathogens and variants.
- Establishing robust early warning mechanisms and rapid response teams, with seamless linkages to state and national reference laboratories.
- Expanding surge capacity across healthcare facilities, including critical care infrastructure, human resources, and emergency logistics.
- Ensuring resilient and uninterrupted supply chains for essential medicines, diagnostics, vaccines, and personal protective equipment.
- Prioritizing the protection of vulnerable populations, including the elderly, individuals with chronic illnesses, coastal fishing communities, migrant labour populations, and residents of flood-prone and ecologically sensitive areas.
- Embedding risk communication and community engagement as core components of preparedness, ensuring transparency, trust, and public participation at all stages of response.

Importantly, this plan aligns pandemic preparedness with broader frameworks of disaster risk reduction and climate resilience. In a district highly susceptible to flooding, waterlogging, and environmental changes, health security cannot be viewed in isolation. By integrating public health preparedness with environmental management and disaster mitigation strategies, this framework enhances the district's ability to withstand and recover from multifaceted crises.

Alappuzha, fondly known as the "Venice of the East," is defined not only by its intricate waterways and fertile landscapes but also by the resilience, unity, and industrious spirit of its people. This District Pandemic Preparedness Plan is a commitment to preserving that legacy. It is a pledge that, in the face of emerging and future pandemics, our district will remain vigilant, prepared, and united.

As we move forward, this document will continue to evolve—guided by emerging scientific evidence, technological advancements, and the lessons learned from implementation. Preparedness is not a destination but a continuous journey of adaptation and improvement.

Together, we reaffirm a fundamental principle: the health of our people is our highest priority. Building resilience is not merely an institutional objective—it is a shared responsibility that binds government systems, healthcare providers, and communities into a collective force for safeguarding the future.

Dr Dileepkumar S R
Deputy DMO & DSO
DMO(H) Alappuzha

Executive Summary

Alappuzha district, popularly known as the “Venice of the East,” is one of the most distinctive and densely populated districts in the state of Kerala. Established on 17 August 1957, the district lies along the western coast of India, bordered by the Lakshadweep Sea in the west, Kottayam and Pathanamthitta in the east, Kollam in the south, and Ernakulam in the north. Covering an area of approximately 1,410 sq. km, the district comprises 6 taluks, 12 blocks, and 5 municipalities, with a dense network of villages, waterways, and settlements.

Geographically, Alappuzha is characterised by an extensive system of backwaters, canals, wetlands, and coastal plains, forming part of the famous Kuttanad region—often referred to as the “Rice Bowl of Kerala.” A significant portion of Kuttanad lies below sea level, making the district particularly vulnerable to seasonal flooding, water stagnation, and climate-related hazards. The district’s physiography broadly falls into three sub-regions: the Alappuzha coastal belt, the Kuttanad low-lying plains, and the Chengannur rolling plains. Major rivers such as the Pamba River, Manimala River, and Achankovil River traverse the district and drain into its extensive backwater system, contributing to both its ecological richness and disaster vulnerability.

The southern and eastern parts of the district, including areas such as Chengannur, Mavelikkara, and Nooranadu, present a somewhat different geographical and epidemiological profile compared to the coastal and Kuttanad regions. These areas form part of the midland and slightly elevated plains, characterised by mixed agricultural landscapes, dense rural settlements, and strong connectivity with neighbouring districts such as Pathanamthitta and Kollam. Seasonal river flooding—particularly from the Pamba River during intense monsoon events—can affect parts of Chengannur and surrounding panchayats, as witnessed during the major floods of recent years. These regions also function as important transport and population movement corridors, increasing the potential for rapid spread of infectious diseases between districts.

The district’s socio-economic landscape is shaped by agriculture, fisheries, tourism, inland water transport, and the traditional coir industry, along with coastal and backwater-based livelihoods. The district has an 82-kilometre coastline and includes 54 fishing villages, reflecting the critical importance of marine and inland fisheries to the local economy. At the same time, the high level of population mobility associated with tourism, fishing activities, and inland navigation increases the risk of rapid transmission and importation of infectious diseases.

Historically, the district has experienced recurrent outbreaks of vector-borne, water-borne, and zoonotic diseases, including dengue, leptospirosis, chikungunya, and diarrhoeal illnesses, particularly during the monsoon and post-flood periods when environmental conditions favour disease transmission. Public health challenges are often compounded during disasters, when flooding, displacement, and overcrowding in relief camps increase the risk of disease outbreaks and strain health systems.

In this context, the District Pandemic Preparedness Plan for Alappuzha has been developed to strengthen the district's capacity to prevent, detect, and respond effectively to pandemics and large-scale disease outbreaks. The plan seeks to build a resilient and coordinated public health system through collaboration among Local Self-Governments (LSGs), the District Disaster Management Authority (DDMA), the Health Department, and other key sectors.

Key priorities of the plan include strengthening integrated disease surveillance systems, early warning mechanisms, laboratory capacity, and rapid response teams, with linkages to national reference institutions such as the National Institute of Virology. The plan also focuses on ensuring continuity of essential health services, strengthening infection prevention and control (IPC), expanding healthcare surge capacity, and maintaining uninterrupted supply chains for medicines, diagnostics, and personal protective equipment during emergencies.

Special emphasis is placed on protecting vulnerable populations, including the elderly, individuals with chronic illnesses, coastal fishing communities, migrant workers, and residents of flood-prone or low-lying areas. The plan also prioritises community engagement, risk communication, and multisectoral coordination, ensuring that communities receive timely and accurate information and actively participate in preparedness and response activities.

By integrating public health preparedness with disaster risk reduction and climate resilience, the District Pandemic Preparedness Plan provides a comprehensive framework for safeguarding the health and well-being of the population. Its effective implementation will enhance district-level readiness, reduce morbidity and mortality, and minimise socio-economic disruption, thereby strengthening the resilience of Alappuzha against future pandemics and public health emergencies.

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List of Abbreviations

LSGD/LSGI	LOCAL SELF-GOVERNMENT DEPARTMENT / LOCAL SELF-GOVERNMENT INSTITUTION
BMO	BLOCK MEDICAL OFFICER
IDSP	INTEGRATED DISEASE SURVEILLANCE PROGRAMME
NDMA	NATIONAL DISASTER MANAGEMENT AUTHORITY
PPE	PERSONAL PROTECTIVE EQUIPMENT
ICMR	INDIAN COUNCIL OF MEDICAL RESEARCH
CD	COMMUNICABLE DISEASES
NCD	NON-COMMUNICABLE DISEASES
SDMA	STATE DISASTER MANAGEMENT AUTHORITY
DDMA	DISTRICT DISASTER MANAGEMENT AUTHORITY
MO	MEDICAL OFFICER
HS	HEALTH SUPERVISOR
HI	HEALTH INSPECTOR
JHI	JUNIOR HEALTH INSPECTOR
ASHA	ACCREDITED SOCIAL HEALTH ACTIVIST

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INTRODUCTION

Background of the Pandemic Preparedness Plan

Alappuzha District, popularly known as the "Venice of the East," is the most densely populated district in Kerala, characterised by a unique landscape of backwaters, canals, and an 82 km coastline. Geographically, the district is bordered by Ernakulam District to the North, Kottayam and Pathanamthitta Districts to the East, Kollam District to the South, and the Laccadive Sea (Arabian Sea) to the West. A significant portion of the district, particularly the Kuttanad region, lies below sea level, creating a complex socio-environmental environment where waterlogged conditions and seasonal flooding are perennial challenges. With a population density of 1,504 persons per square kilometre—the highest in the state—the district is inherently vulnerable to the rapid community transmission of infectious pathogens, especially in its densely packed urban and coastal clusters.

The district's susceptibility is further heightened by its heavy reliance on tourism and inland water transport, which facilitates the constant movement of people and increases the risk of importing and spreading zoonotic and respiratory diseases. Historically, Alappuzha has been a hotspot for recurring public health emergencies, including outbreaks of Dengue, Leptospirosis, Chikungunya, and water-borne diarrheal diseases. The lessons learned from managing the COVID-19 pandemic and local health crises like Bird Flu (H5N1) have underscored that the district's unique geography often leads to "compounding disasters," where disease outbreaks coincide with monsoon flooding and the subsequent overcrowding of relief camps.

A comprehensive Pandemic Preparedness Plan at the district level is essential to unify the efforts of various Local Self-Government Institutions (LSGIs), the District Disaster Management Authority (DDMA), and the health department. This strategic framework aims to strengthen early warning systems, enhance laboratory surveillance capabilities through institutions like the National Institute of Virology (NIV) Alappuzha unit, and ensure a resilient medical supply chain for early case detection, active case management and disease containment, which shall definitely have an impact on morbidity and mortality. By prioritising the safety of vulnerable groups—including the elderly, coastal fishing communities, and those in submerged regions—the plan seeks to build a coordinated, community-centred response that minimises the socio-economic impact of future public health threats across all six Taluks of the district.

Rationale for the Pandemic Preparedness Plan

The increasing frequency of emerging and re-emerging infectious diseases has highlighted the need for robust pandemic preparedness at the district level. District health systems serve as the frontline of response during public health emergencies and play a critical role in early detection, containment, and coordinated response to outbreaks.

Alappuzha district, due to its high population density, extensive water networks, frequent flooding, and active tourism and transport sectors, remains particularly vulnerable to the rapid spread of infectious diseases. Strengthening preparedness through a structured and coordinated plan is therefore essential to ensure timely surveillance, efficient resource mobilisation, and effective inter-sectoral collaboration.

The Pandemic Preparedness Plan aims to establish a clear framework for preparedness, prevention, early response, and recovery during public health emergencies. It aligns with national and state-level disaster management and health emergency response strategies to ensure that the district health system remains resilient and responsive in the face of emerging threats.

Objectives of the Pandemic Preparedness Plan

General Objective

To strengthen district-level preparedness, surveillance, and response mechanisms to effectively prevent, detect, and manage pandemic threats in Alappuzha district.

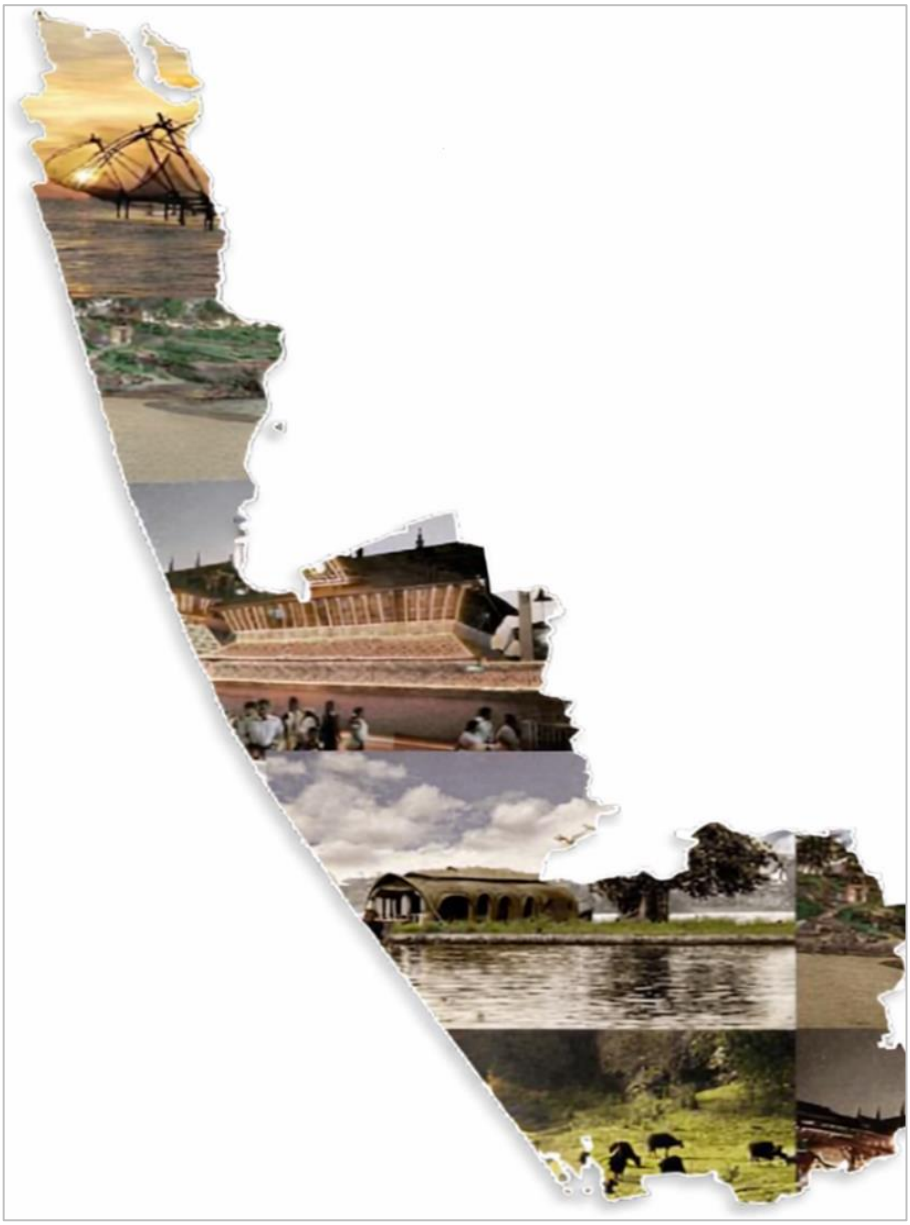
Specific Objectives

1. To strengthen disease surveillance and early warning systems across all health facilities and communities.
2. To ensure adequate health infrastructure, human resources, and logistics for pandemic response.
3. To enhance laboratory diagnostic capacity and reporting mechanisms.
4. To establish effective coordination among health departments, local self-government institutions, and disaster management authorities.
5. To ensure rapid response, case management, and containment measures during outbreaks.
6. To protect vulnerable populations and minimise morbidity, mortality, and socio-economic disruption.

Scope of the Plan

This Pandemic Preparedness Plan covers all six Taluks of Alappuzha district and includes public and private healthcare facilities, local self-government institutions, and relevant government departments involved in emergency response. The plan outlines preparedness strategies related to surveillance, healthcare infrastructure, logistics, human resources, communication, and inter-sectoral coordination required for effective pandemic management.

DISTRICT AT A GLANCE



ALAPPUZHA DISTRICT: A CULTURAL AND GEOGRAPHIC PORTRAIT

DISTRICT PROFILE

Particulars	Details
Administrative Overview	
District Formation	17 August 1957
Geographical Area	1,414 Sq. Km
Revenue Divisions	2 (Alappuzha, Chengannur)
Taluks	6 (Cherthala, Ambalappuzha, Kuttanad, Karthikappally, Chengannur, Mavelikkara)
Villages	93
Municipalities	6
Blocks	12
Grama Panchayats	72
Assembly Constituencies	9
Major Rivers	Manimala, Pamba, Achankovil
Health Infrastructure	
Medical Colleges	1
District Hospitals	2
General Hospitals	1
Taluk Hospitals	6
Block Family Health Centres (FHC)	12
Primary Health Centres (PHC)	62
Ayurveda Hospitals	59
Homeopathy Hospitals	55
Education Infrastructure	
High Schools	197
Higher Secondary Schools (HSS)	135
Vocational Higher Secondary Schools (VHSC)	21
Upper Primary Schools (UP)	156
Lower Primary Schools (LP)	410
Anganwadis	2,150
Infrastructure & Economy	
Registered Industrial Units	8,830
Transgender Population	6131
Commercial Banks	371
Total Road Length	1,472.334 Km
Registered Vehicles	6,97,203

ADMINISTRATIVE MAP OF ALAPPUZHA DISTRICT

Figure 1.1: *Administrative Map of Alappuzha District showing six Taluks*

ADMINISTRATIVE SUBDIVISIONS IN ALAPPUZHA DISTRICT

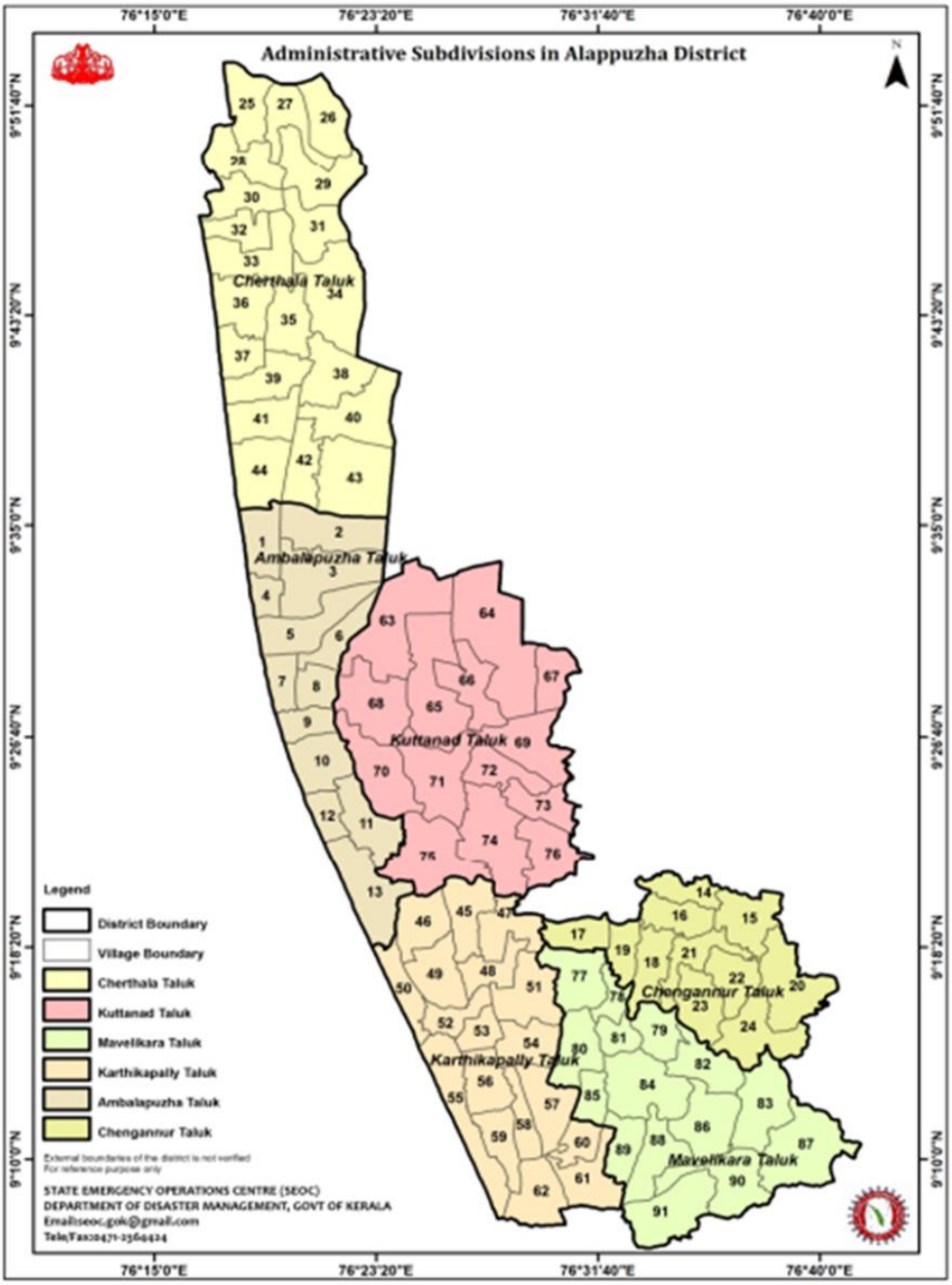


***Figure 1.2**: Detailed Jurisdictional Map of the Six Taluks of Alappuzha*

ADMINISTRATIVE MAP SHOWING LOCAL SELF-GOVERNMENTs (LSGs)

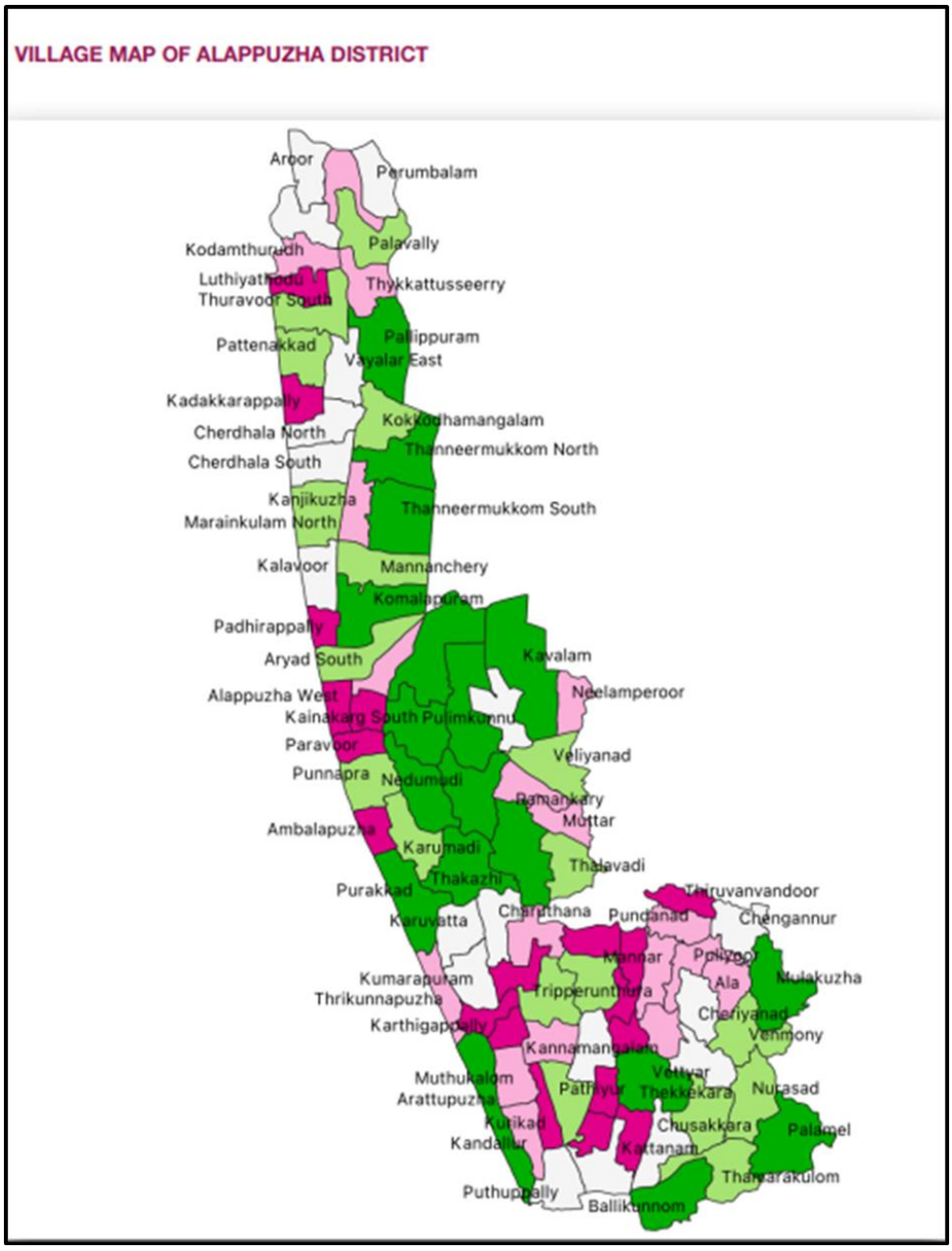


Figure 1.3: *Administrative Map of Local Self-Governments (LSGs)*

LEGISLATIVE ASSEMBLY CONSTITUENCIES IN ALAPPUZHA DISTRICT

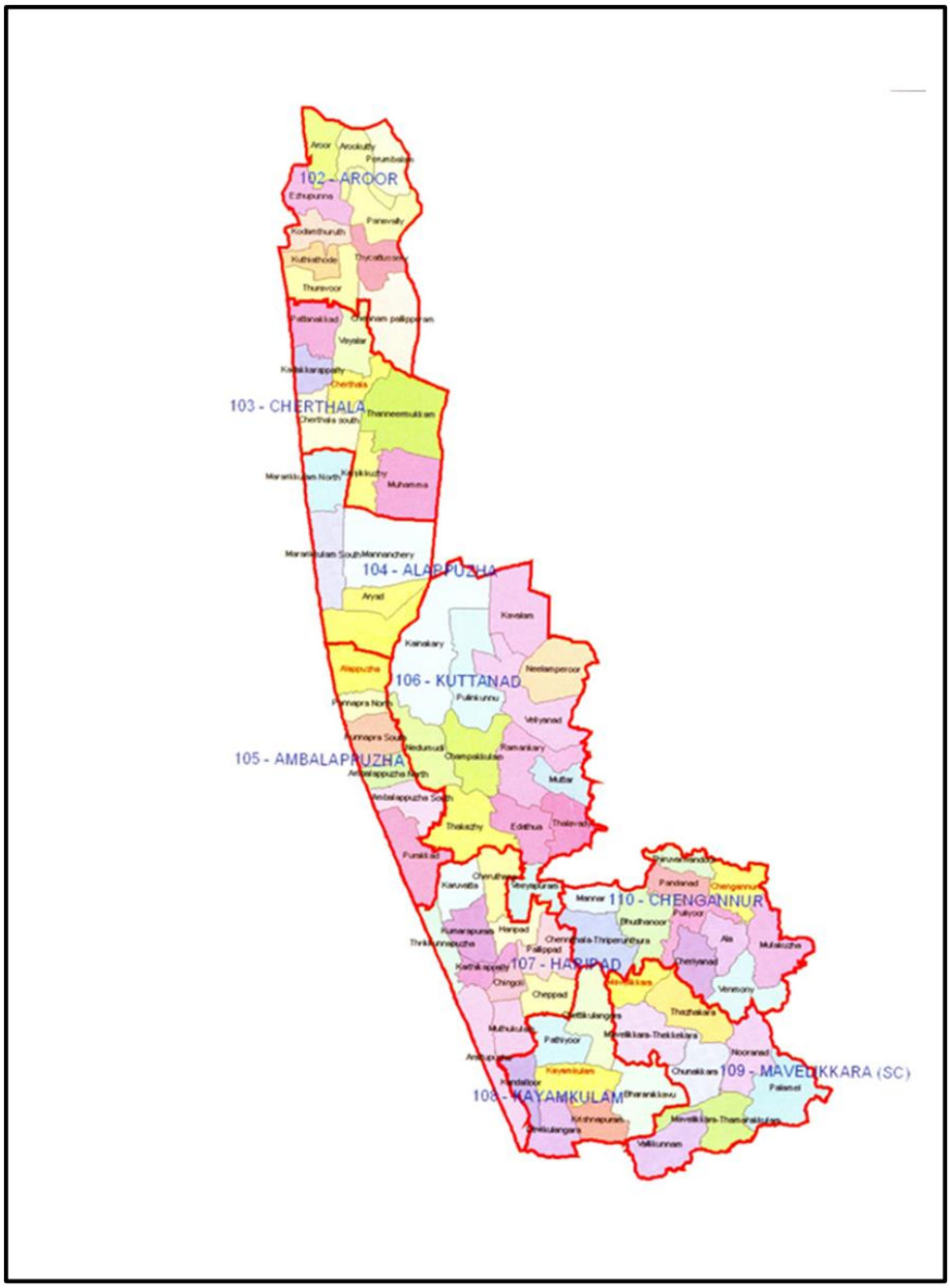


Figure 1.4: *Legislative Assembly Constituency (LAC) Map of Alappuzha District*

DISTRICT DELIMITATION MAP

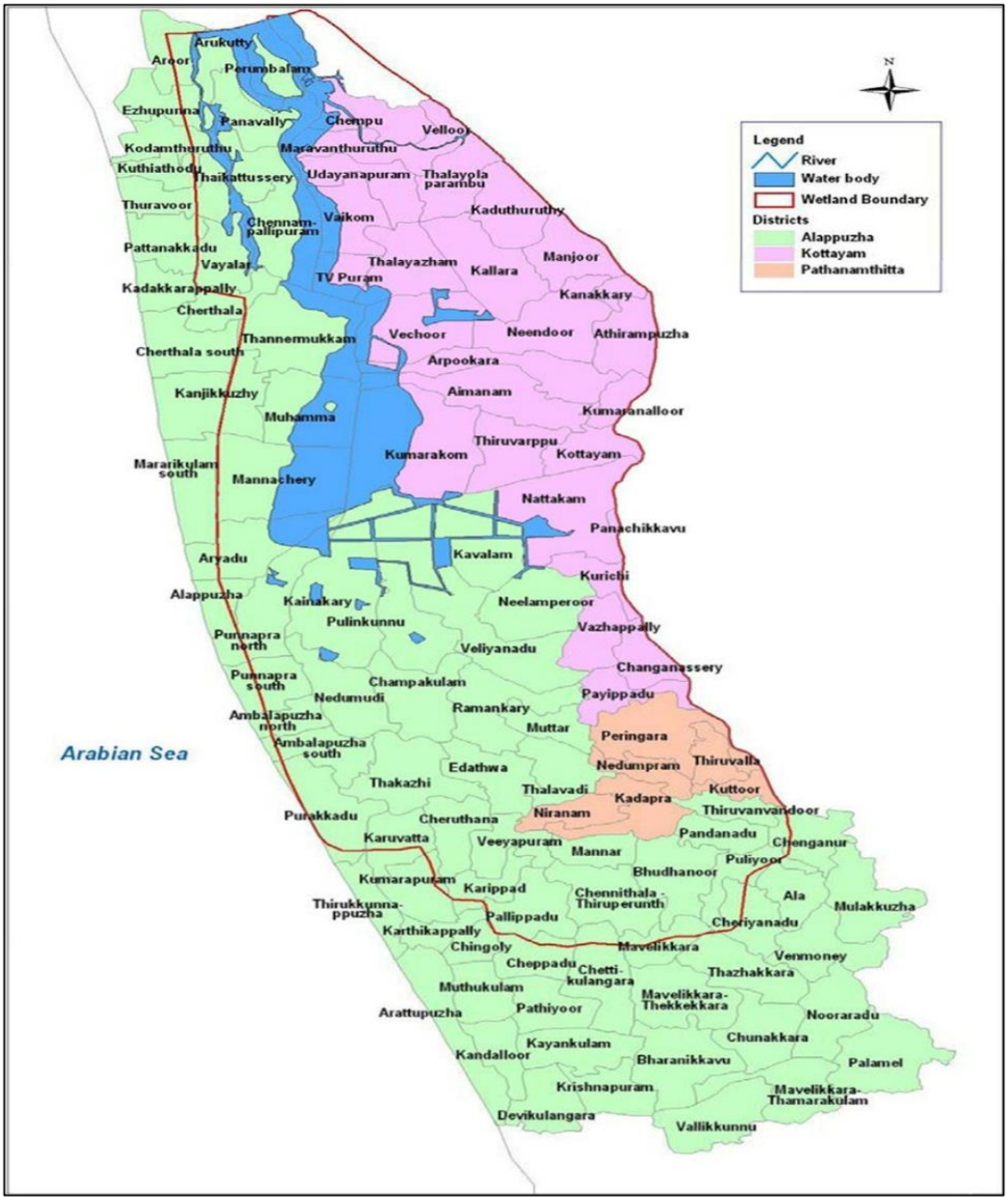


Figure 1.5: *District Delimitation Map of Alappuzha*

ELEVATION AND LOW-LYING AREAS OF ALAPPUZHA DISTRICT

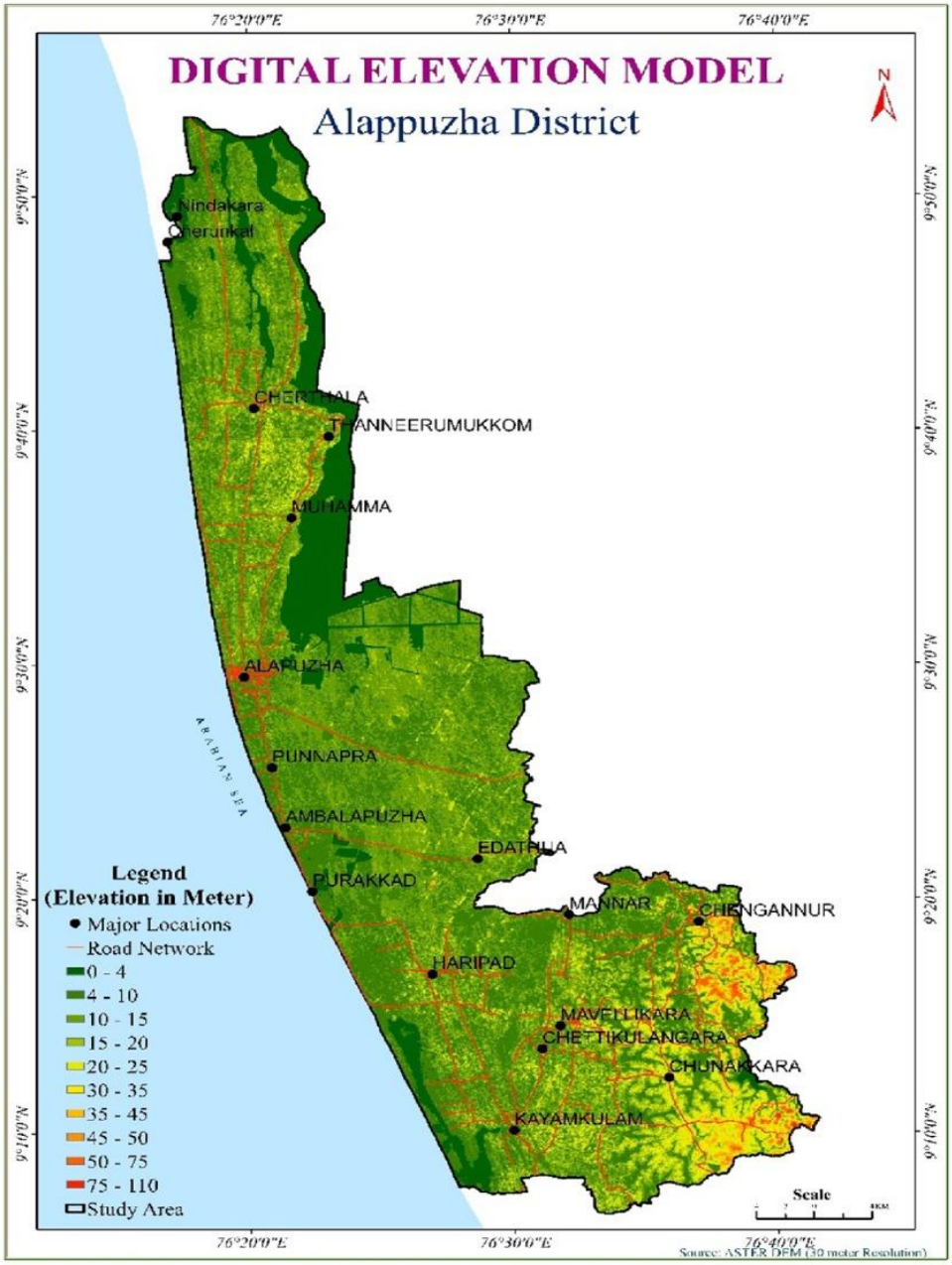


***Figure 1.6**: Digital Elevation Model (DEM) and Topographic Profile of Alappuzha District*

LAND USE AND LAND COVER (LULC) MAP

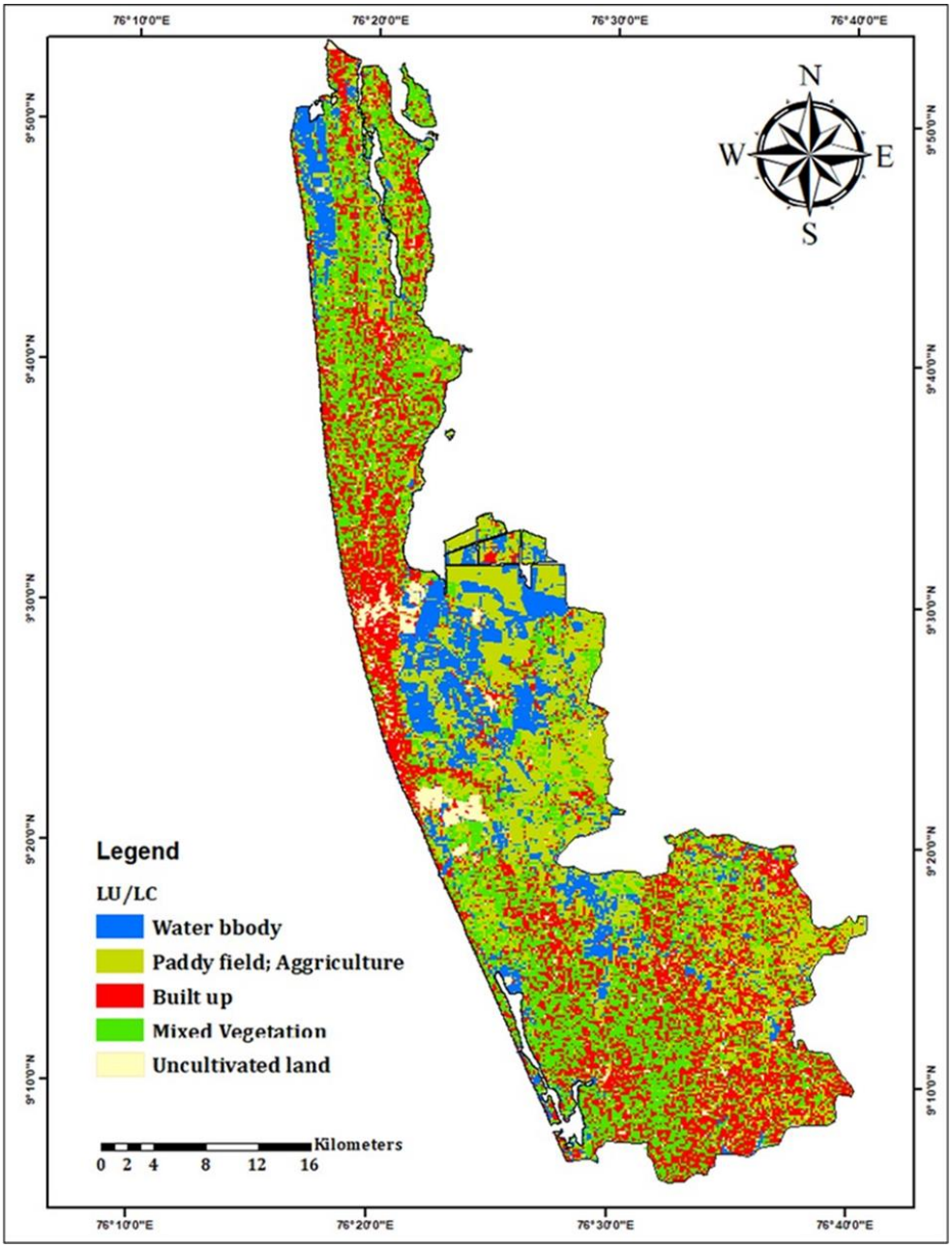


Figure 1.7: *Land Use and Land Cover Classification of Alappuzha District*

HYDROGRAPHY AND ROAD NETWORK MAP OF ALAPPUZHA

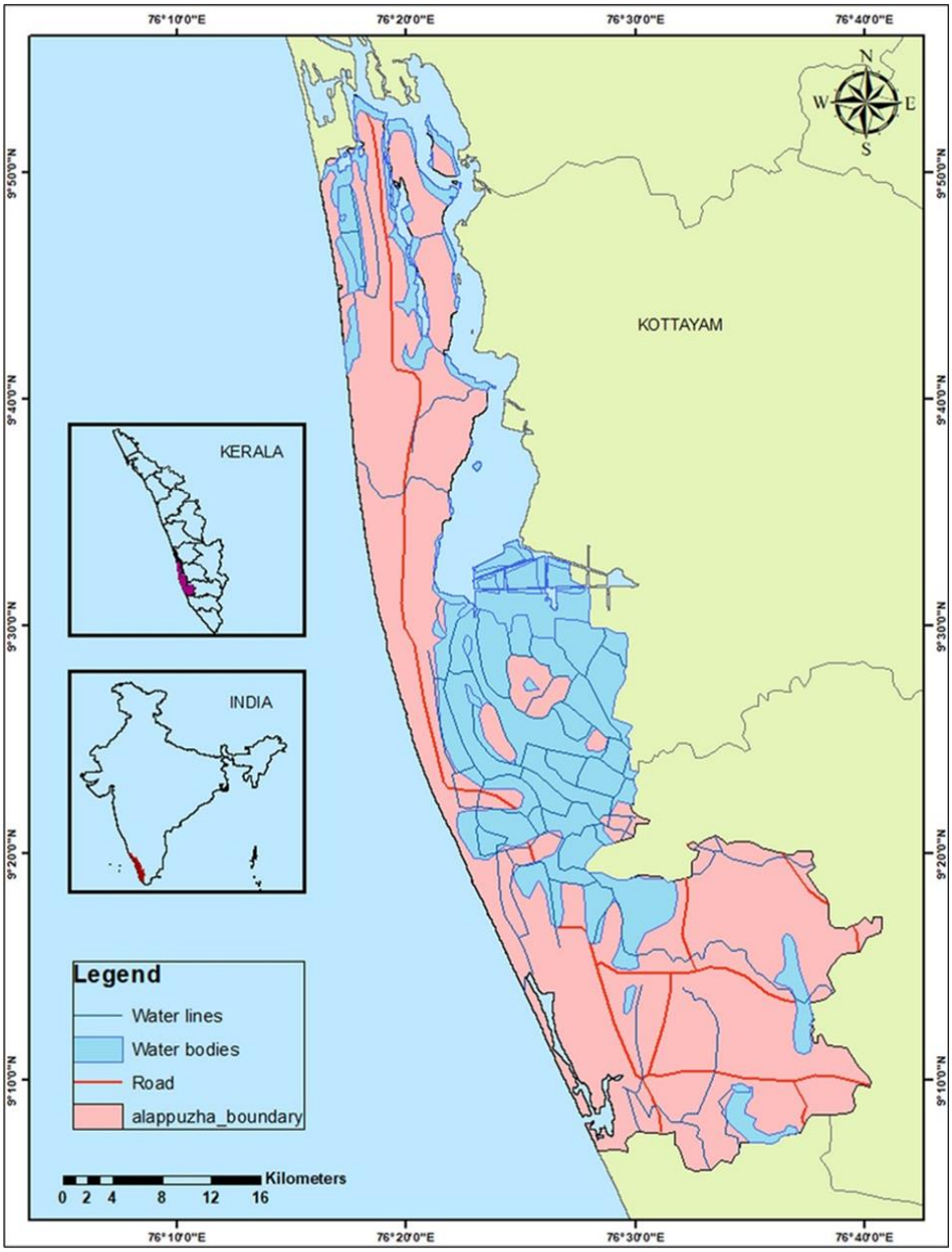


Figure 1.8: *Integrated Road Network and Major Water Bodies*

FLOOD INUNDATION VULNERABILITY MAP

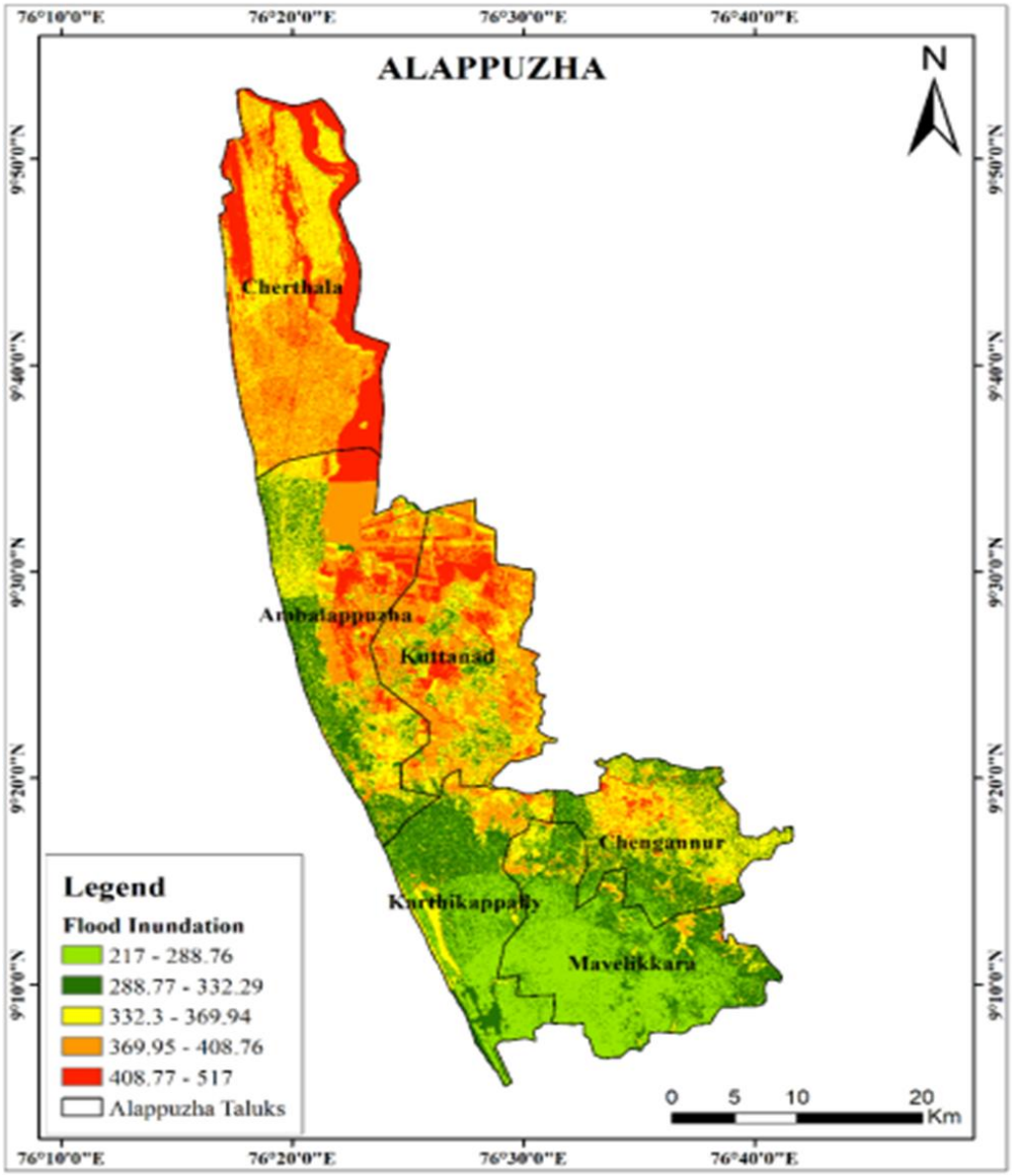


Figure 1.9: *Historical Flood Inundation Risk Zones by Taluk*

FLOOD PRONE AREAS IN ALAPPUZHA

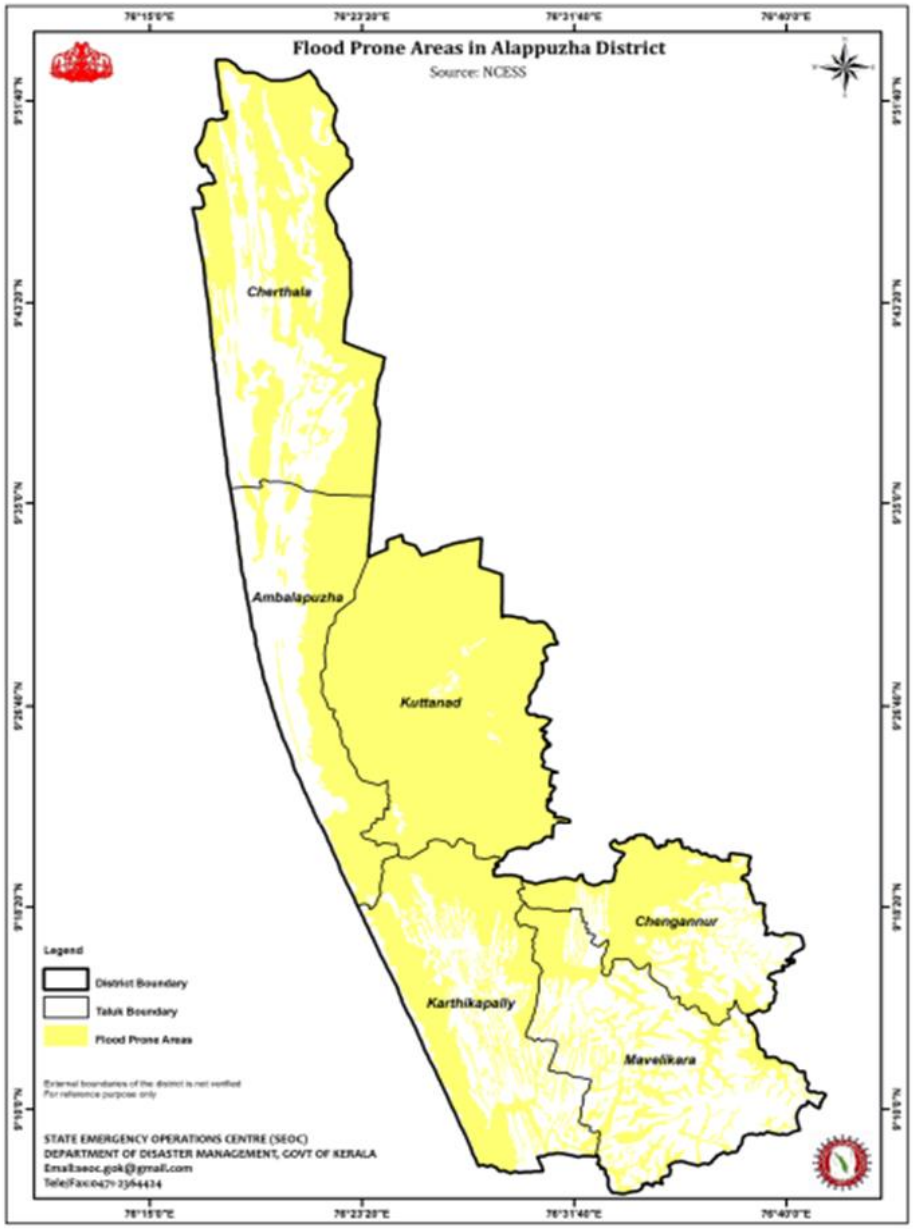


Figure 1.10: *Spatial Distribution of Flood-Prone Areas across Alappuzha*

DROUGHT-PRONE AREAS IN ALAPPUZHA

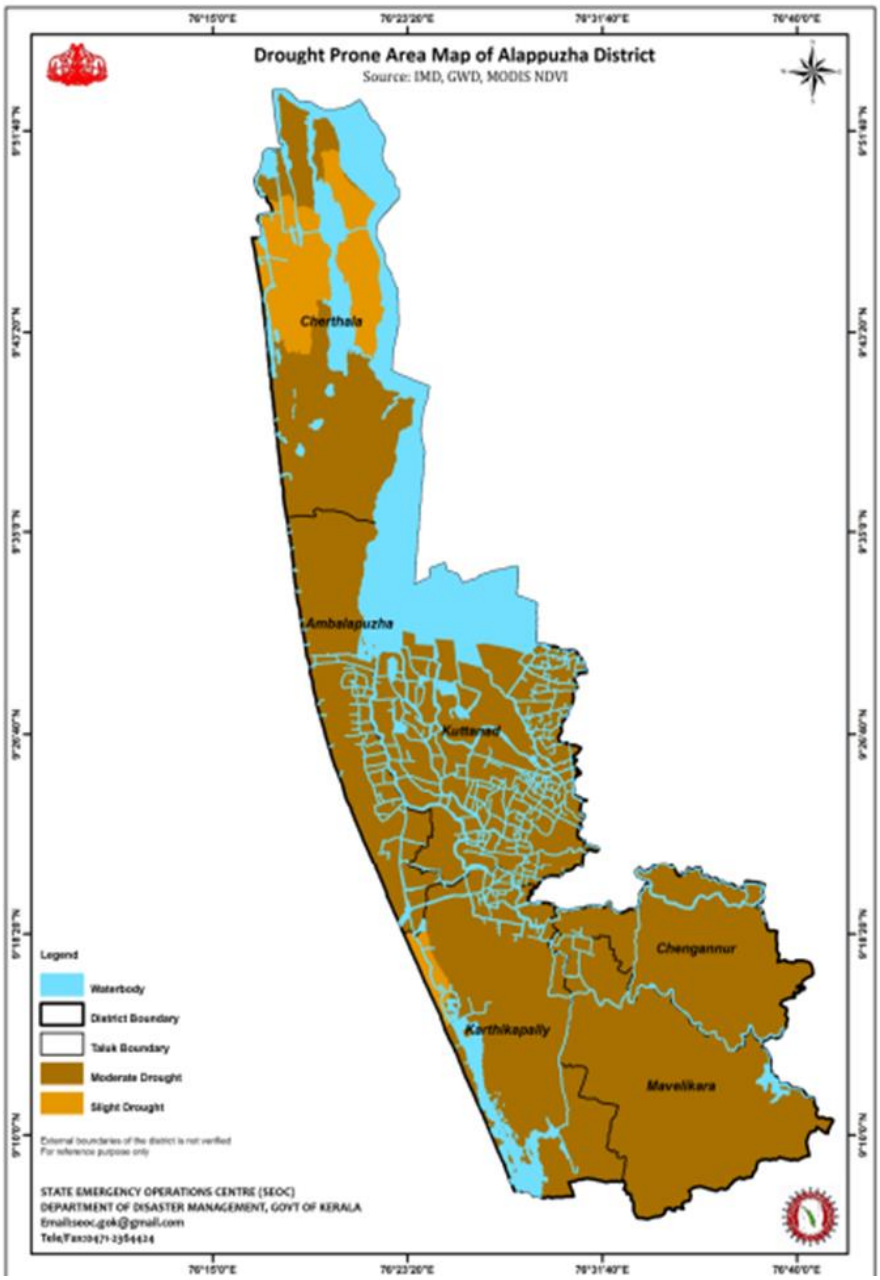


Figure 1.11: *Drought-Prone Area Map of Alappuzha District*

PHYSIOGRAPHY AND TRANSPORTATION MAP OF ALAPPUZHA

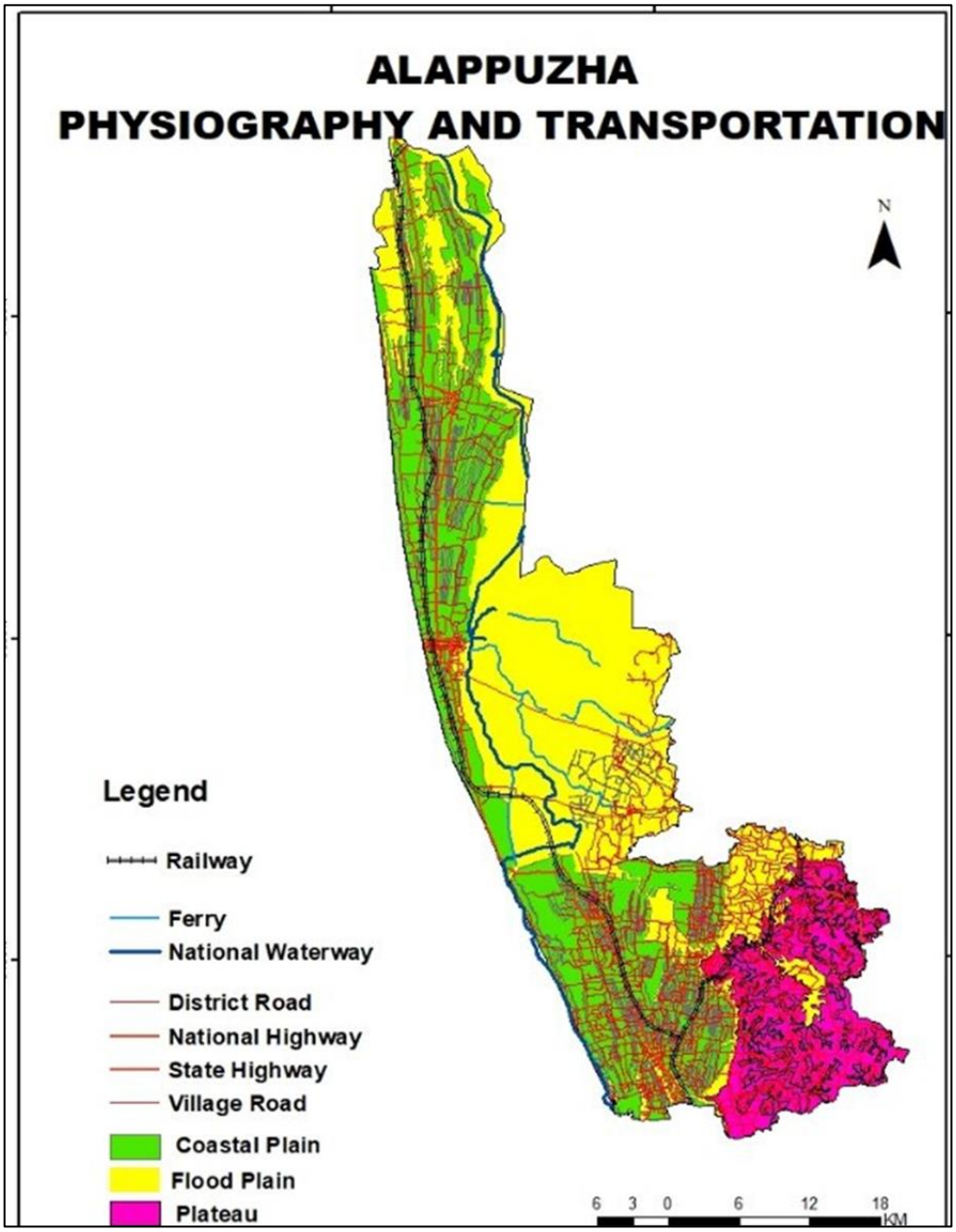


Figure 1.12: *Physiography and Transportation Map of Alappuzha District*

MAJOR TRANSPORT NETWORK AND ADMINISTRATIVE HEADQUARTERS OF ALAPPUZHA

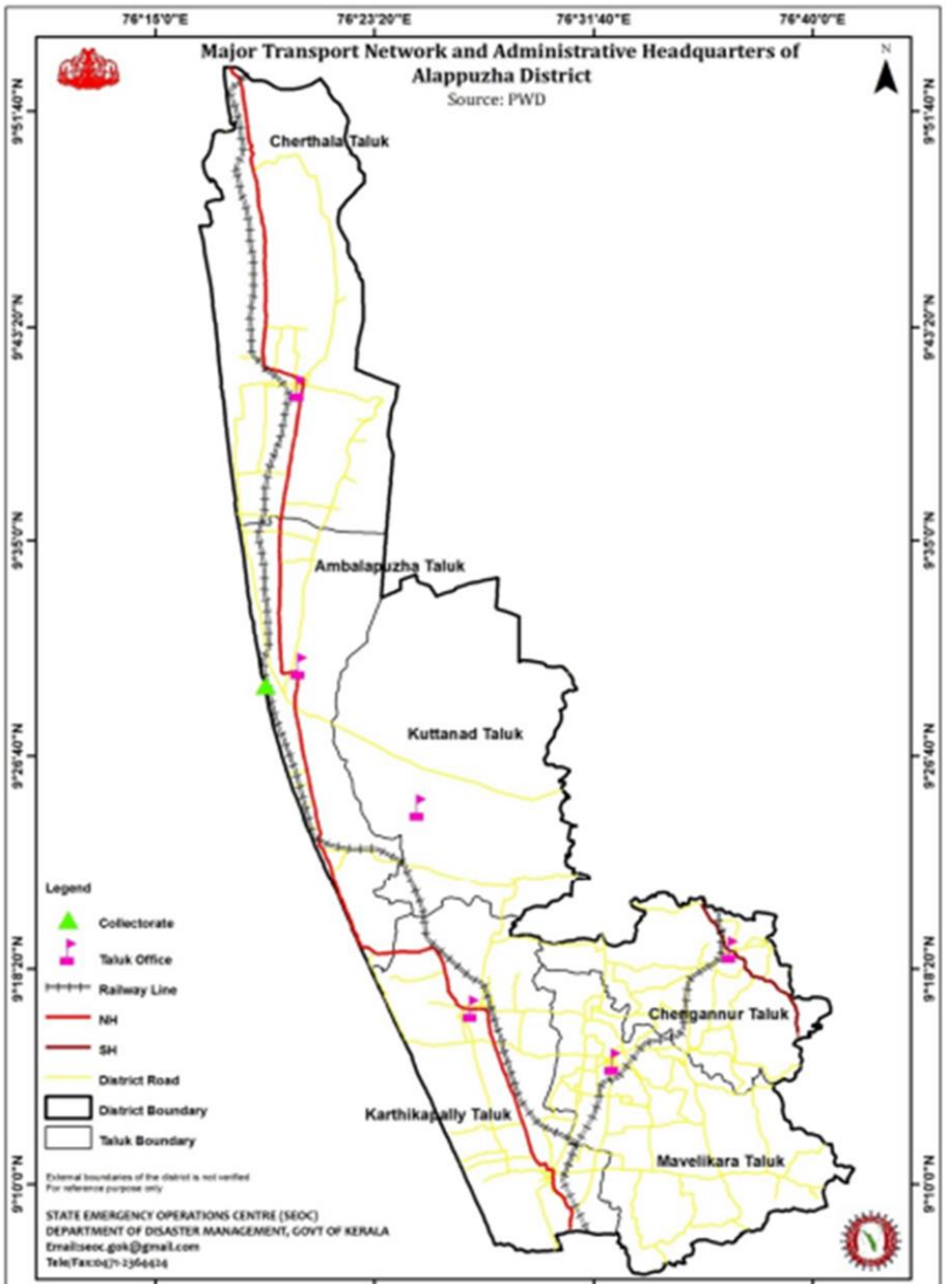


Figure 1.13: *Major Transport Network Map of Alappuzha District*

MAJOR CHEMICAL INDUSTRIAL HAZARD SUSCEPTIBILITY MAP OF ALAPPUZHA

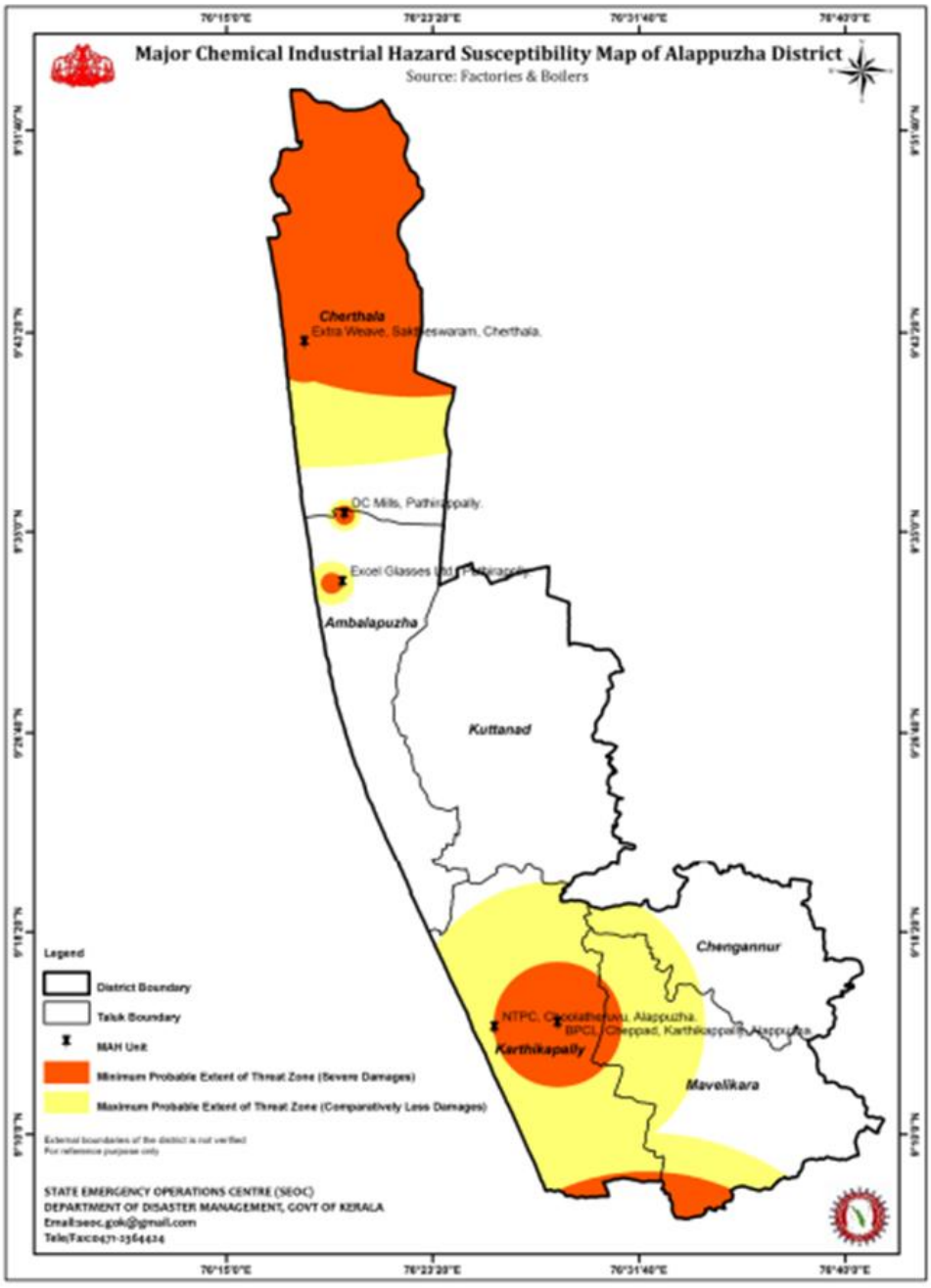


***Figure 1.14**: Major Chemical Industrial Hazard Susceptibility Map of Alappuzha District*

INTEGRATED HEALTH INFRASTRUCTURE MAP OF ALAPPUZHA DISTRICT

***Figure 1.15**: Integrated Health Infrastructure Map of Alappuzha District*

Health block-wise data

Block	Ward	Houses	Population	Migrants	Wells	Hotspot	Ed. Institutions
Arookutty	80	29949	122677	3086	4598	17	49
Thuravoor	126	53522	179849	8477	4943	24	85
Muhamma	149	67712	237707	1141	9397	31	111
Chettikad	68	31911	152662	616	4813	4	29
Ambalappuzha	92	39572	280456	1220	8945	5	121
Thrikkunnapuzha	141	49848	193144	1625	22510	16	111
Muthukulam	118	53398	23051	1039	30366	3	103
Chunakkara	113	55727	203692	2261	52272	26	92
Kurathikad	107	52454	194242	2665	47125	13	110
Veliyanad	86	21104	88760	267	5124	28	52
Chempumpuram	90	30432	122294	388	7985	30	102
Pandanad	136	55846	202312	2528	49665	9	154

1. ADMINISTRATIVE AND SOCIO-DEMOGRAPHIC PROFILE OF ALAPPUZHA

This section provides a comprehensive overview of the administrative, demographic, and infrastructural landscape of Alappuzha. These factors are important for understanding the district's vulnerability and preparedness capacity in the context of public health

emergencies and pandemic response. The following table summarises the core parameters of Alappuzha District, highlighting its high population density and unique terrain.

TABLE 1: BACKGROUND OF DISTRICT	
Description	**Details**
Name of District	Alappuzha
Number of Local Self-Governments (LSGs)	01 District Panchayath 12 Block Panchayaths 06 Municipalities 72 Grama Panchayaths 1666 wards
Total Area	1,415 sq. km
Projected Population	2,140,000 – 2,292,973
Population Density	1,504 persons per sq. km
Terrain Characteristics	Coastal, low-lying and backwater regions
Major Rivers	Three major rivers – Pamba, Manimala and Achankovil
Number of Water Bodies	3,063
Educational Institutions	959
Factories	613
Registered Industrial Units	8,830
Registered MSMEs	34,281
Flood-Prone LSGs	09
Flood-Prone LSG Wards	19 Grama Panchayats and 05 Municipalities
Landslide-Prone Areas	Nil
Death Management and Disposal Facilities	Mortuaries – 15 Crematoriums – 83
Auditoriums / Marriage Halls / Community Centres	Auditoriums – 356 Community Halls – 287

The above profile highlights the distinctive geographical and socio-demographic characteristics of Alappuzha district. These features significantly influence the district's risk profile, particularly in relation to floods, water-borne diseases, and challenges in emergency response and service delivery.

1.1 Demographic and Vulnerable Population

Understanding the demographic composition and vulnerable population groups is essential for pandemic preparedness. Children, the elderly, economically deprived families, migrant workers, and socially vulnerable groups are at increased risk during public health emergencies due to higher exposure, limited access to services, and dependency on public systems.

Description		**Details (in numbers)**
DEMOGRAPHIC PROFILE		
Total population		2267910
Male		1093450
Female		1168329
Transgender		6131
Children under 5		87924
Adolescent (10-19)		212860
Elderly (>60)		409244
SOCIAL/LIVELIHOOD VULNERABILITY		
Previous EPEP family		3159
BPL family		429484
Tribal communities		6574
Migration	Immigrant	136757
	Emigrant	182704
Socio-economically deprived		• Only one room with kucha walls/roof-3.36% • No working adult(16-59Y) -2.04% • Female-headed without adult male- 3.02% • Disabled with no able adult-0.18% • Landless mainly casual labour-18.71%
Fisherfolk		188453 (Inland & Marine)

Description	Details (in numbers)
DEMOGRAPHIC PROFILE	
SC Community(population)	201211(9.46%)
ST Community(population)	6574(0.31%)

1.2 Clinical Vulnerability

Certain population groups need priority healthcare & are at higher risk of severe illness, complications, and mortality during pandemics. Patients with chronic diseases, those requiring regular medical care, and individuals with mobility or functional limitations face challenges in accessing timely care during emergencies. Mapping these groups helps in prioritising continuity of treatment, medicine stock planning, oxygen support, referral transport, and targeted home-based care.

Description	Details in numbers
Pregnant women	7595
Lactating mothers	23137
Bedbound patients	8209
Homebound patients	10315
Patients on Haemodialysis	1043
Patients on CAPD	265
Cancer patients (currently on treatment)	9075
Haemophilic patients	54
Mentally challenged	5912
Differently abled	9521
Diabetic patients	128136

Description	Details in numbers
Hypertensive patients	193747
TB patients	1306

The high prevalence of non-communicable diseases (NCDs), particularly Hypertension (1.93 Lakhs) and Diabetes (1.28 Lakhs), presents a significant risk for increased morbidity and mortality during a pandemic surge. This clinical baseline necessitates the following localised strategies:

- Continuity of Essential Care: A decentralised protocol will be activated via the ASHA and JHI/JPHN network to ensure that patients—especially those on dialysis and palliative care—do not face treatment interruptions during lockdowns.
- Vulnerability-Based Prioritisation: The bedbound patients and differently abled individuals are categorised as "Priority 1" for mobile medical unit (MMU) visits and home-based vaccination or testing.
- Referral Transport: The pregnant women and dialysis patients require a dedicated "Green Channel" for transport to ensure emergency obstetric and renal care is not delayed by pandemic-related diversions.

1.3 Calendar of Mass Gathering Events

Alappuzha district hosts numerous religious, cultural, and traditional festivals throughout the year that attract large public gatherings. Such events involve significant population movement and crowding, which may increase the risk of disease transmission during public health emergencies. To ensure effective surveillance and crowd management, the district monitors religious and cultural festivals that involve significant public gatherings. The following calendar identifies peak risk periods across different Taluks in the district.

Major Festivals and Public Gathering Events in Alappuzha District

Quarter	Peak Months	Key Large-Scale Events
Q1	Jan – March	Arthunkal Basilica, Chettikulangara Bharani
Q2	April – June	Edathua Church Perunal, Gaja Mela.
Q3	July – Sept	Champakulam Moolam & Nehru Trophy Boat Races, Karkidaka Vavu Bali
Q4	Oct – Dec	Chakkulathukavu Ponkala, Mannarasala Ayilyam, Parumala Church Perunnal

The seasonal clustering of these mass gathering events highlights predictable periods of increased public health risk, requiring enhanced surveillance, emergency preparedness, and inter-sectoral coordination. Special attention is needed during these peak months to strengthen disease monitoring, crowd control measures, and rapid response systems to prevent and manage potential outbreaks.

Master List of Localised Festivals

Month	Major Events / Festivals	Location / Taluk
JANUARY	Arthunkal Basilica Fest, Thaippuyam, Chandanakkuda Mahothsavam, St. George Forane Church Feast, Kanjoor, Evoor Arattu.	Cherthala, Haripad, Kayamkulam
FEBRUARY	**Chettikulangara Kumbha Bharani**, Padanilam Sivrathri, Thiru Uthsavam, Valiyakulangara Ashwathy, Kanichukulangara Devi Temple.	Mavelikkara, Karthikappally, Cherthala
MARCH	Meena Bharani, Nalpathenneeswaram Temple (10 days), Devi Kshethram festivals, Chettikulangara Meena Bharani.	Various LSGs
APRIL	**Edathua Church Perunal**, Chithira Ulsavam, Pathamudhayam, Aravukad Temple Fest, Neelamperoor Pooram Padayani.	Kuttanad, Haripad, Ambalappuzha
MAY	Gaja Mela, St. Joseph North Panavally Church, Thonacadu Church.	Various
JULY	**Champakulam Moolam Boat Race**, Karkidaka Vavu Bali.	Kuttanad, Thrikkunnapuzha
AUGUST	**Nehru Trophy Boat Race**, St. Mary's Forane Church, Maruthorvattom Karkidakavavu.	Ambalappuzha, Kuttanad
SEPTEMBER	St. Mary's Forane Church Feast, Agola Marian Theerthadana, St. Mary's Church festival.	Kuttanad, Cherthala
OCTOBER	**Mannarasala Ayilyam**, Skanda Shashti, Maha Ganpathy temple festival.	Haripad
NOVEMBER	**Chakkulathukavu Ponkala**, Parumala Palli Perunnal, Kuttanadan Vallam Kali, Vetticode Ayilyam.	Kuttanad, Chengannur
DECEMBER	Chakkulathukavu Ponkala, Sri Dharmashartra Temple, Ulavaipu Carnival, Thumpoly Church (11 days).	Kuttanad, Cherthala

These mass gathering events require coordinated planning between the health department, local self-government institutions, police, and disaster management authorities. Enhanced disease surveillance, sanitation measures, risk communication, and emergency medical preparedness are essential during these periods to prevent and control potential outbreaks.

NOTE:

A detailed list of festivals and events across different Local Self-Government Institutions with potential for large public gatherings is provided in the **Annexure**. This information will assist district authorities in planning crowd management, disease surveillance, and public health interventions during high-risk periods.

INFRASTRUCTURE & RESOURCE INVENTORY

2.1 Health Facility Directory and Basic Capacity

This section provides a comprehensive overview of the healthcare infrastructure within the district, highlighting the distribution, accessibility, and baseline capacity of facilities that form the backbone of routine healthcare delivery as well as emergency response.

At the primary level, Family Health Centres (FHCs) and Community Health Centres (CHCs) serve as the first point of contact for the community, providing essential outpatient services, preventive care, maternal and child health services, and management of common illnesses. During public health emergencies, these facilities play an important role in early case detection, screening, triaging, initial isolation, and referral coordination.

Secondary and tertiary care institutions, including General Hospitals (GHs) and Medical College Hospitals (MCHs), function as referral centres with advanced diagnostic facilities, specialist services, intensive care units, and critical care support. In emergencies, these institutions manage severe cases and provide advanced treatment and specialist care.

Maintaining an updated inventory of these facilities enables health authorities to:

- Assess geographic distribution and service coverage
- Identify infrastructure and human resource gaps
- Estimate available bed strength, ICU capacity, and oxygen availability
- Plan for surge capacity, including expansion of isolation wards and critical care units
- Coordinate referral pathways effectively

Such systematic mapping of healthcare infrastructure strengthens preparedness, facilitates evidence-based planning, and enhances the district's capacity to respond efficiently during pandemics, outbreaks, and other public health emergencies.

2.2 Overview of Public Healthcare Infrastructure in Alappuzha

The district health system consists of a network of public and private healthcare facilities that collectively provide preventive, promotive, curative, and emergency healthcare services. These facilities operate at multiple levels, including primary, secondary, and tertiary care institutions. Public health facilities form the backbone of the district health system and provide accessible and affordable healthcare services to the community. These institutions play a central role in disease surveillance, immunisation programs, maternal and child health services, and emergency response during outbreaks.

Table 2.1 Overview of Public Healthcare Infrastructure in Alappuzha

Care Level	Type of Facility	Rural	Urban	Total
Primary	Health & Wellness Centre (HWC) / Janakeeya Arogyakendram(JAK)	362	4	**366**
	Family Health Centre (FHC)	60	1	**61**
	Urban Health & Wellness Centre (UHWC)	0	24	**24**
	Urban Family Health Centre (UFHC)	0	6	**6**
	Mobile Units	-	-	**4**
Secondary	Community Health Centre (CHC)	15	0	**15**
	CHC/PHC Converted to FHC	-	-	**44**
	Taluk Hospital (TH)	2	0	**2**
	Taluk Head Quarters Hospital (THQH)	1	3	**4**
Tertiary	District Hospital (DH)	0	2	**2**
	General Hospital (GH)	0	1	**1**
	Women & Children Hospital (W&C)	0	1	**1**
Specialized	District TB Centre	-	-	**1**
	MCH (Maternal & Child Health)	1	0	**1**
TOTAL		**441**	**42**	**531**

This table provides a consolidated overview of public healthcare institutions operating across different levels of care in the district. The distribution of healthcare institutions also reflects the district's focus on decentralised service delivery. With a strong base of primary care facilities supported by secondary and tertiary institutions, the public health system can deliver preventive, promotive, curative, and emergency services. This network plays a crucial role in strengthening routine healthcare delivery as well as supporting preparedness and response during disease outbreaks and other public health emergencies.

The extensive network of primary healthcare facilities ensures last-mile service delivery and enhances accessibility, especially in rural and hard-to-reach backwater areas. The presence of upgraded Family Health Centres and Health & Wellness Centres reflects the district's emphasis on comprehensive primary healthcare and continuity of care.

The well-structured referral system linking primary, secondary, and tertiary care institutions enables timely management of cases and reduces the burden on higher-level facilities. This integrated system is particularly critical during public health emergencies, facilitating efficient case detection, referral, and management.

Furthermore, the availability of specialized centres and mobile health units supports targeted interventions and outreach services, thereby strengthening the district's capacity for early detection, surveillance, and rapid response to emerging health threats.

2.3 Public Health Facility Distribution Map

The geographic distribution of healthcare facilities determines accessibility and service coverage across the district. Mapping the location of these institutions helps identify service clusters, underserved areas, and referral linkages between different levels of care.

Figure 2.1 Public Health Facility Distribution Map

2.4 Directory of Public Healthcare Institutions

Maintaining a detailed directory of healthcare institutions is essential for operational planning, referral coordination, and emergency response. The following list provides the names and locations of major public healthcare facilities functioning within the district.

Table 2.2 Directory of Public Healthcare Institutions

Sl. No.	Facility Category	Name of the Institution	Sanctioned bed	Rural/ Urban	LSG / Local Body
1	GH	GH Alappuzha	400	U	Alappuzha
2	DH	DH Mavelikkara	347	U	Mavelikkara
3	DH	DH Chengannur	140	U	Chengannur
4	THQH	THQH Cherthala	251	U	Cherthala
5	THQH	THQH Pulinkunnu	106	R	Pulinkunnu
6	THQH	THQH Haripad	150	U	Haripad
7	THQH	THQH Kayamkulam	125	U	Kayamkulam
8	TH	TH Thuravoor	24	R	Kuthiyathode
9	TH	TH Chettikad	18	R	Mararikulam South
10	W&C	W & C Hospital, Alappuzha	308	U	Alappuzha
11	CHC	CHC Thycattussery	52	R	Thykkattussery
12	CHC	CHC Champakkulam	51	R	Champakkulam
13	CHC	CHC Muhamma	23	R	Muhamma
14	CHC	CHC Thanneermukkom	24	R	Thanneermukkom
15	CHC	CHC Ambalapuzha	12	R	Ambalappuzha South
16	CHC	CHC Chunakkara	16	R	Chunakkara
17	CHC	CHC Kurathikad	24	R	Thekkekara
18	CHC	CHC Muthukulam	24	R	Muthukulam
19	CHC	CHC Veliyanadu	30	R	Veliyanad
20	CHC	CHC Chempumpuram	12	R	Nedumudi
21	CHC	CHC Edathua	36	R	Edathua
22	CHC	CHC Pandanad	24	R	Pandanad
23	CHC	CHC Mannar	24	R	Mannar
24	CHC	CHC Thrikkunnappuzha	18	R	Thrikkunnappuzha
25	CHC	CHC Arookutty	28	R	Arookutty
26	FHC	FHC Perumbalam	26	R	Perumbalam
27	FHC	FHC Mannancherry	0	R	Mannancherry

Sl. No.	Facility Category	Name of the Institution	Sanctioned bed	Rural/ Urban	LSG / Local Body
28	FHC	FHC Kodamthuruth	0	R	Kodamthuruth
29	FHC	FHC Cheppad	0	R	Cheppad
30	FHC	FHC Muttar	0	R	Muttar
31	FHC	FHC Budhanoor	0	R	Budhanoor
32	FHC	FHC Kumarapuram	0	R	Kumarapuram
33	FHC	FHC Haripad	24	U	Haripad
34	FHC	FHC Pallipad	0	R	Pallipad
35	FHC	FHC Cherthala South	0	R	Cherthala South
36	FHC	FHC Vayalar	24	R	Vayalar
37	FHC	FHC Pallithode	0	R	Kuthiyathode
38	FHC	FHC Vallikunnam	24	R	Vallikunnam
39	FHC	FHC Nooranad	12	R	Nooranad
40	FHC	FHC Chettikulanagara	24	R	Chetikulanagara Gp
41	FHC	FHC Thakazhy	8	R	Thakazhy
42	FHC	FHC Cheriyanad	24	R	Cheriyanad
43	FHC	FHC Karthikappally	0	R	Karthikappally
44	FHC	FHC Karuvatta	0	R	Karuvatta
45	FHC	FHC Aryad	0	R	Aryad
46	FHC	FHC Thottappally	0	R	Purakkad
47	FHC	FHC Purakkad	0	R	Purakkad
48	FHC	FHC Punnapra South	0	R	Punnapra South
49	FHC	FHC Ambalappuzha North	0	R	Ambalappuzha North
50	FHC	FHC Mararikulam North	6	R	Mararikulam North
51	FHC	PHC Vallethode	0	R	Kodamthuruth
52	FHC	FHC Panavally	0	R	Panavally
53	FHC	FHC Thuravoor South	0	R	Thuravoor
54	FHC	PHC Kadakkarappally	0	R	Kadakkarappally
55	FHC	FHC Thamarakulam	0	R	Thamarakulam
56	FHC	FHC Thazhakkara	0	R	Thazhakkara
57	FHC	FHC Bharanicavu	0	R	Bharanicavu
58	FHC	FHC Krishnapuram	0	R	Krishanapuam
59	FHC	FHC Devikulangara	0	R	Devikulangara
60	FHC	FHC Pathiyoor	0	R	Pathiyoor

Sl. No.	Facility Category	Name of the Institution	Sanctioned bed	Rural/ Urban	LSG / Local Body
61	FHC	FHC Kavalam	0	R	Kavalam
62	FHC	FHC Veeyapuram	0	R	Veeyapuram
63	FHC	FHC Ramankary	0	R	Ramankary
64	FHC	FHC Kuppapuram	0	R	Kainakary
65	FHC	FHC Venmony	0	R	Venmony
66	FHC	FHC Eramallikkara	0	R	Thiruvanvandoor
67	FHC	FHC Puliyoor	0	R	Puliyoor
68	FHC	FHC Mulakkuzha	0	R	Mulakkuzha
69	FHC	FHC Kadampoor	0	R	Budhanoor
70	FHC	FHC Chingoli	0	R	Chingoli
71	FHC	FHC Ezhupunna	24	R	Ezhupunna
72	FHC	FHC Kalavoor	24	R	Mannancherry
73	FHC	FHC Aroor	0	R	Aroor
74	FHC	FHC Vettackal	18	R	Pattanakkad
75	FHC	FHC, Arattupuzha	24	R	Arattupuzha
76	FHC	FHC Kandalloor	36	R	Kandalloor
77	FHC	FHC Pallippuram	12	R	Pallippuram
78	FHC	FHC Kanjikuzhy	0	R	Kanjikuzhy
79	FHC	FHC Punnapra North	0	R	Punnapra North
80	FHC	FHC Palamel	0	R	Palamel
81	FHC	FHC Chennithala	0	R	Chennithala
82	FHC	FHC Neelamperoor	0	R	Neelamperoor
83	FHC	FHC Thalavady	0	R	Thalavady
84	FHC	FHC Ala	0	R	Ala
85	FHC	FHC Cheruthana	24	R	Cheruthana
86	FHC	GFH Pallana	20	R	Thrikunnappuzha
87	FHC	GFD Arattupuzha	0	R	Arattupuzha
88	DTBC	District TB Centre, Alappuzha	24	U	Alappuzha
89	TBC	T B Clinic Karuvatta	12	R	Karuvatta
90	Leprosy	Leprosy Sanitorium, Nooranad	767	R	Thamarakkulam

2.5 Private Healthcare Facilities

Private healthcare institutions contribute significantly to the healthcare delivery system in the district by providing additional treatment capacity, specialised services, and diagnostic facilities. During public health emergencies, coordination with private sector facilities becomes essential for expanding healthcare capacity and managing increased patient load.

Sl. No	Facility Name	Type of Hospital	Health Block
1	Kuriakose Chavara Memorial Hospital	Hospital with IP care	Chunakkara
2	Josco Multi-Speciality Hospital	Multispecialty Hospital	Chunakkara
3	Sanjos Hospital	Multispecialty Hospital	Chettikad
4	Mammen Memorial Hospital	Multispecialty Hospital	Pandanad
5	Sagara Cooperative Hospital	Multispecialty Hospital	Ambalappuzha
6	Sanjivani Multi-speciality Hospital	Multispecialty Hospital	Pandanad
7	Sreekandapuram Hospital	Specialty Hospital	Kurathikad
8	Venniyil Sugumarapilla Memorial Hospital (VSM)	Multispecialty Hospital	Kurathikad
9	City Hospital Kayamkulam	Multispecialty Hospital	Muthukulam
10	Matha Mission Hospital	Specialty Hospital	Muthukulam
11	Medical Trust Hospital, Kayamkulam	Multispecialty Hospital	Muthukulam
12	Deepa Hospital Karuvatta	Hospital with IP care	Thrikkunnappuzha
13	Deepa Hospital Danapady	Hospital with IP care	Thrikkunnappuzha
14	JJ Hospital Kayamkulam	Specialty Hospital	Muthukulam
15	Kattanam Medical Center	Specialty Hospital	Chunakkara
16	St Thomas Mission Hospital, Kattanam	Multispecialty Hospital	Chunakkara
17	Sacred Heart General Hospital	Multispecialty Hospital	Muhamma
18	St. Sebastian’s Visitation Hospital	Multispecialty Hospital	Muhamma
19	Sree Narayana Medical Mission Hospital	Multispecialty Hospital	Muhamma
20	Kinder Women's Hospital and Fertility Centre PVT.LTD	Specilaty W&C hospital	Muhamma
21	Lourdes Matha Hospital	Speciality Hospital	Chempumpuram

Sl. No	Facility Name	Type of Hospital	Health Block
22	KVM Hospital Cherthala	Multispecialty Hospital	Muhamma
23	Sahrudaya Hospital	Multispecialty Hospital	Chettikad
24	K M Cheriyan Institute of Medical Sciences	Multispecialty Hospital	Pandanad
25	Providence Hospital	Multispecialty Hospital	Chettikad
26	Poochakal Medical Center	Multispecialty Hospital	Arookutty
27	Usha Hospital	Specilaty W&C hospital	Pandanad
28	Ebenezer Hospital, Kayamkulam	Speciality Hospital	Muthukulam
29	Huda Trust Hospital, Haripad	Speciality Hospital	Thrikkunnappuzha
30	Sunrise Institute of Medical Sciences Pvt Ltd	Multispecialty Hospital	Thuravoor

2.6 Private Clinics

Private clinics form an important component of the district healthcare system and play a significant role in outpatient service delivery. In many communities, they are often the first point of contact for individuals seeking medical care when symptoms begin.

During public health emergencies and disease outbreaks, private clinics contribute to early case detection, prompt referral of suspected cases, and timely reporting to the public health authorities. Their active participation strengthens disease surveillance and facilitates rapid response measures. Maintaining an updated directory of private clinics, including their location and services offered, enables effective engagement of private practitioners in public health initiatives, risk communication activities, and coordinated emergency response. A detailed list of private clinics operating in the district is provided in Annexure.

2.7 Healthcare Education and Training Institutions in Alappuzha

Healthcare education and training institutions play a vital role in strengthening the health system by producing skilled healthcare professionals and supporting capacity-building activities. These institutions contribute to the availability of trained medical personnel, including doctors, nurses, paramedical staff, and public health professionals.

In addition to academic training, many of these institutions serve as clinical training centres and provide internship opportunities, skill development programs, and continuing medical education for healthcare professionals.

During public health emergencies, such institutions can support the health system by mobilising trained personnel, facilitating capacity-building programs, and assisting in clinical and public health response activities. Alappuzha's medical and paramedical educational institutions serve as a vital reserve for the **surge workforce**, including student volunteers, interns, and specialised training faculty.

2.6.1 **Inventory of Medical and Nursing Institutions in the District**

Category of Institution	Govt	Private	AYUSH	Total Institutions	Total training seats
Medical Colleges	1	0	0	1	150
Nursing Colleges	2	1	0	4	140
Nursing Schools	1	17	0	18	650
Dental Colleges	1	1	0	2	70
Para-medical / Allied Health	1	12	0	13	650
Pharmacy Colleges	1	5	0	6	300
Total	7	36	0	44	1960

The district hosts a substantial number of healthcare education institutions, particularly in the nursing and allied health sectors. These institutions significantly contribute to the development of a skilled healthcare workforce that supports both routine healthcare delivery and emergency response operations. The presence of these training centres also facilitates regular capacity building programs, clinical training, and continuing professional education for healthcare personnel within the district.

2.6.2 Role in Capacity Building and Emergency Preparedness

Healthcare training institutions also support the district health system through various training and capacity-building activities. These include programs on infection prevention and control, emergency clinical care, surveillance, and outbreak response. During pandemics and disaster situations, students, interns, and faculty members from these institutions can be mobilised to assist in surveillance activities, community awareness

campaigns, vaccination programs, and clinical support services under appropriate supervision.

2.8 Specialised Services and Emergency Resource Inventory

This section provides a detailed overview of specialised healthcare resources available within the district, with particular emphasis on emergency response and critical care capacity. These resources are essential for managing severe illnesses, trauma cases, and large-scale public health emergencies such as pandemics, natural disasters, and mass casualty incidents.

The inventory includes critical infrastructure such as hospital beds, oxygen-supported beds, ventilator-supported beds, intensive care units, blood centres, emergency transport systems, and dialysis facilities across the Government, Private, and AYUSH sectors. Maintaining an updated record of these resources helps the district health administration assess surge capacity, plan resource mobilisation, and strengthen emergency preparedness.

Table 2.5: Specialised Services and Emergency Resource Inventory

Item	Govt	Private	AYUSH	Total
Hospital beds	1164	1880	86	3130
Oxygen-generating systems	4	3	nil	07
Oxygen-supported beds (Numbers)	125	279	1	405
Ventilator-supported beds	45	53	0	98
ICU beds	75	109	1	185
Burns units	2	17	0	19
Blood Banks	4	3	0	7
Blood component separation units	03	02	0	05
BLS ambulances	16	22	1	39
ALS ambulances	10	13	1	24
Dialysis facilities	6	10	0	20

Item	Govt	Private	AYUSH	Total
Medical store	7	802	-	809

The above inventory highlights the distribution of critical healthcare resources across different sectors in the district. With 185 ICU beds and 98 ventilators currently available, the district has a moderate baseline for Category C patient management. During a pandemic peak, the conversion of the 279 oxygen-supported beds in the private sector to high-dependency units (HDU) will be a priority. The combined fleet of 63 ambulances (39 BLS and 24 ALS) provides a robust referral network. The 24 Advanced Life Support (ALS) units are the primary assets for inter-facility transfer of ventilated patients between Taluk hospitals and the Medical College.

2.9 Industrial Establishments Supporting Emergency Response

Certain industrial establishments within the district may serve as critical support systems during large-scale emergencies. Medium-scale and small-scale industries can assist in providing logistical support, manufacturing essential supplies, or facilitating emergency infrastructure when required.

A detailed list of such industrial establishments that may be mobilised during worst-case scenarios is provided in **Annexure**.

2.10 Oxygen and Diagnostic Capacity

Monitoring oxygen supply systems and diagnostic capabilities is a critical component of public health preparedness. Adequate oxygen infrastructure and diagnostic services enable healthcare facilities to effectively manage respiratory illnesses, infectious disease outbreaks, and other medical emergencies requiring critical care support.

Oxygen-generating systems and backup oxygen sources ensure an uninterrupted oxygen supply during periods of high demand, while diagnostic facilities such as laboratories, imaging services, and molecular testing support timely detection and clinical management of diseases.

The following table provides an overview of the oxygen infrastructure and diagnostic facilities available across major government healthcare institutions in the district.

Table 2.6 Oxygen and Diagnostic Capacity in Major Government Hospitals in Alappuzha

Name of Health Facility	Oxygen-generating System (Y/N)	Backup Oxygen Source (Y/N)	Diagnostic Facilities Available(Y/N)				
			Lab	USG	X-ray	CT/MRI	RT-PCR
MCH Alappuzha	Y	Y	Y	Y	Y	Y	N
GH Alappuzha	Y	Y	Y	Y	Y	Y	N
DH Mavelikkara	Y	Y	Y	Y	Y	N	N
THQH Cherthala	N	Y	Y	Y	Y	Y	N
W&C Alappuzha	Y	Y	Y	Y	Y	N	N
THQH Harippad	N	Y	Y	N	Y	N	N
THQH Kaymkulam	N	Y	Y	Y	Y	N	N
DH Chengannur	N	Y	Y	Y	Y	N	N
THQH Pulinkunnu	N	Y	Y	N	N	N	N
TH Thuravoor	N	Y	Y	N	N	N	N
TOTAL	**4**	**10**	**10**	**7**	**8**	**3**	**10**

The table indicates that most secondary and tertiary care facilities in the district have access to laboratory and basic imaging services, while advanced imaging such as CT/MRI is available only in select higher-level institutions. The current distribution of life-support and diagnostic assets highlights the district's readiness for high-acuity respiratory outbreaks.50% of the major government referral centres (MCH, GH, DH Mavelikkara, W&C) are equipped with functional oxygen-generating systems (PSA Plants). ll listed facilities (100%) maintain a Backup Oxygen Source. Strengthening oxygen infrastructure and expanding diagnostic capacity remain important components of health system preparedness, particularly during pandemics and other large-scale respiratory disease outbreaks.

2.11 Oxygen Security and Dealer Network

The district maintains a tiered oxygen supply system to ensure that both major hospitals and home-isolated patients have uninterrupted access to medical-grade oxygen.

SL NO	Name of the Agency	Area	Category
1	Gasco Industrial Gas Pvt Ltd Alappuzha	Alappuzha Town	Major Refilling & Manufacturing Units
2	Oxygen Plant, Kunnupuram	Kunnupuram	Major Refilling & Manufacturing Units
3	Sultan Industrial Gases Alappuzha	Alappuzha Town	Major Refilling & Manufacturing Units
4	Oxygen Digital Shop - Alappuzha	Alappuzha Town	Major Medical Oxygen Suppliers & Dealers
5	Southern Surgical	Alappuzha Town	Major Medical Oxygen Suppliers & Dealers
6	Janasevana Medicals	Cherthala	Major Medical Oxygen Suppliers & Dealers
7	Southern Surgicals	Alappuzha Town	Major Medical Oxygen Suppliers & Dealers
8	Medizone Health Specialities	Mavelikkara	Major Medical Oxygen Suppliers & Dealers
9	Carezone Surgicals	Chengannur	Major Medical Oxygen Suppliers & Dealers

10	Evergreen Surgicals	Neerkunnam	Major Medical Oxygen Suppliers & Dealers
11	Medicity Pharmaceuticals	Haripad	Major Medical Oxygen Suppliers & Dealers

The presence of multiple oxygen manufacturing units and suppliers across the district strengthens the healthcare system's ability to maintain an uninterrupted oxygen supply during routine healthcare delivery as well as during public health emergencies. Effective coordination between healthcare facilities and oxygen suppliers is essential to ensure timely replenishment and distribution of medical oxygen during surge situations.

2.12 District-Level Diagnostic Facility Mapping

Diagnostic services are an essential component of the healthcare system, enabling timely detection, confirmation, and monitoring of diseases. A well-distributed network of laboratories and imaging facilities supports clinical management, disease surveillance, and outbreak investigation.

To manage a district-wide outbreak, Alappuzha utilises a Public-Private Integrated Laboratory Network. This ensures that high-volume testing does not bottleneck at a single institution.

Table 2.7 Diagnostic Facility Mapping at the District Level

Item	Govt	Private	Total
General laboratories	68	105	173
Microbiology laboratories	1	20	21
RT-PCR laboratories	1	3	4
USG units	7	107	114
CT/MRI units	2	20	22
Research laboratories	1	0	1
Labs of other departments that can be repurposed	We may use the lab of CPCRI-Kayamkulam		

The district possesses a well-developed healthcare infrastructure comprising public and private healthcare facilities, specialised medical services, training institutions, and a strong network of diagnostic laboratories. The 1 Research Lab (NIV Alappuzha) serve as the district's "Reference Centres" for genomic sequencing and definitive diagnosis. The 20

Private Microbiology labs and 3 Private RT-PCR units are earmarked for surge testing. Under the Disaster Management Act, these facilities can be requisitioned to provide standardised, capped-cost testing for the general public during a Level 3 surge. Since 90% of these advanced units are in the private sector, the district establishes "Diagnostic Referral Corridors" to ensure patients in government Taluk hospitals have priority access to these private machines during emergencies.

Non-Health Resource Integration:

In a "Worst-Case" scenario, the laboratory facilities at the Central Plantation Crops Research Institute (CPCRI), Kayamkulam, are identified for repurposing.

2.13 Social and Community Infrastructure for Surge Planning

Social and community infrastructure plays an important role in supporting emergency response operations during public health crises, natural disasters, or large-scale displacement events. Facilities such as schools, community halls, religious institutions, and other public buildings can be repurposed as temporary shelters, isolation centres, relief camps, or vaccination sites when required. The following inventory provides an overview of key community and logistical infrastructure available within the district that may support surge response planning.

Table 2.8 Social and Community Infrastructure Inventory for Surge Planning

Category	Total Count	Est. Capacity (Persons)
Anganwadis	2001	5000
Schools	990	100000
Colleges	83	15000
Medical colleges (Govt/Private)	1	500
Nursing colleges (Govt/Private)	02 Govt	07 Private
Dental colleges (Govt/Private)	01 Govt	50
Paramedical institutes (Govt/Private)	02 Govt	1500

2.14 Community Support and Essential Service Infrastructure

In addition to healthcare facilities, a wide range of community infrastructure and essential services contribute significantly to the district's overall preparedness and response capacity during public health emergencies and disaster situations. Facilities such as private clinics, hospitals, laboratories, and medical stores support healthcare delivery, while community buildings, religious institutions, auditoriums, and hotels may be utilised for temporary shelters, isolation centres, relief camps, or logistical coordination when required.

Critical service institutions, including police stations, fire stations, and water supply infrastructure and other establishments such as transport vehicles, food establishments, and local self-government buildings, may also assist in logistics, supply distribution, and emergency operations. Mapping these resources in advance enables authorities to mobilise them quickly and efficiently during surge situations.

Sl. No	Category	Total Count
1	Private Clinics	350
2	Private Hospitals	104
3	Medical Stores	802
4	Private Laboratories (All Types)	549
5	Closed Houses	20,811
6	Community Halls	287
7	Religious Buildings	1,717
8	Auditoriums	356
9	Mortuaries	15
10	Crematoriums	83
11	Police Stations	36
12	Fire Stations	8
13	Water Pumping Points	150
14	Public Vehicles (other than Ambulances & KSRTC)	161
15	LSGI-Owned Buildings (other than those listed above)	117
16	Pet Homes	1,103
17	Poultry Units	637
18	Slaughterhouses	49
19	Hotels / Restaurants	1,842
20	Cool Bars	3,027

The 356 Auditoriums and 287 Community Halls serve as the primary venues for COVID First Line Treatment Centres (CFLTC). Combined with the 990 schools, the district has a theoretical surge capacity to house and monitor over 100,000 stable patients or displaced citizens. The network of 2,001 Anganwadis serves as the decentralised point for "Nutritional Surveillance" and dry-ration distribution to children and lactating mothers during lockdowns. Beyond ambulances, the 161 public vehicles and the KSRTC fleet are designated for the "Sample Collection Logistics Chain" and the transport of non-critical health personnel. The inventory of 15 mortuaries and 83 crematoriums ensures that even during a high-mortality surge, the district can maintain the "Dignity in Death" protocol.

2. HUMAN RESOURCES

This section focuses on the human capital available within the district. In any emergency—be it a pandemic, flood, or industrial accident—infrastructure is only as effective as the people operating it.

3.1. Medical & Clinical Personnel

This table tracks the "Frontline" providers responsible for diagnosis, treatment, and clinical management. A detailed directory with the contact numbers of all workers is maintained in **Annexure**.

Cadre	Govt (No.)	Private (No.)	Total
Doctors—Modern Medicine	467	762	**1229**
Doctors – AYUSH	108	107	**215**
Doctors – Veterinary	78	5	**83**
Doctors – Dental	18	151	**169**
Nursing officers	444	1556	**2000**
Lab technicians	125	469	**594**
Pharmacists	157	384	**541**
Psychologists	8	18	**26**
Counsellors	90	35	**125**
Primary palliative care Nurses			**80**
Secondary Palliative care Nurses			**41**
NGOs registered under palliative care			**96**
Volunteers registered under Palliative care			**5598**

3.1.1. Human Resources under National Health Mission (NHM)

The NHM workforce plays a critical role in implementing national health programs and supporting service delivery at various levels. The presence of multidisciplinary

professionals, including medical officers, nurses, PROs, epidemiologists, microbiologists, and public health staff, enhances the district's capacity for disease surveillance, programme implementation, and emergency response.

HR - NHM - DESIGNATION WISE DETAILS		
Sl NO	**Designation**	**In position**
1	Paediatrician	2
2	Sports Medicine	1
3	Gynaecologist	1
4	General Medicine	1
5	Pedodontist	1
6	ENT- Specialist MO	2
7	Family Medicine	1
8	Orthopaedics	1
9	PRO	12
10	PRLO	12
11	Dental Surgeon	7
12	Medical Officer	43
13	AYUSH Homeo MO	28
14	AYUSH Ayurveda MO	16
15	AYUSH Sidha MO	5
16	JPHN - PP UNIT/Delivery Point	12
17	JPHN-NUHM	19
18	RBSK Nurse	75
19	Staff Nurse	103
20	Pharmacist	20
21	Laboratory Technician	27
22	Physiotherapist	24
23	DEO	18
24	Audiologist	4

25	Audiometric Assistant	1
26	Instructor for young hearing Impaired	1
27	Special Educator	3
28	Optometrist	3
29	Clinical Psychologist	1
30	OT Technician	2
31	Microbiologist	1
32	Entomologist	1
33	Epidemiologist	11
34	Data Manager	14
35	VBD Consultant	1
36	MRL	1
37	Dietician	8
38	Nurtritionist	1
39	Radiographer	1
40	Support staff	18
41	NPPCF Consultant	1
42	Hospital Attendant	8
43	STS	1
44	TB Health Visitor	2
45	DRTB / TB-HIV Co-ordinator	1
46	Development Therapist- MIU	2
47	Psychologist - mIU	1
48	Counsellors	7
49	JHI - MIST	2
50	MLSP	358

3.1.3 Urban Health & Wellness Centres (UHWC) – Staffing Pattern

Urban health & Wellness Centres (STAFF DETAILS)						
Name of Municipality	**Name of UHWC**	**Name of Medical Officer**	**Staff Nurse**	**Pharmacist**	**JHI**	**Accountant**
Alappuzha	Valiyamaram	1	2	1	1	1
	Eravukkad	1	2	1	0	0
	Powerhouse	1	2	1	1	1
	Vazhicherry	1	2	1	0	0
	Kidaganparambu	1	2	1	1	1
	Poothoppu	1	2	1	0	0
	Karukayil	1	2	1	0	0
	Vadakkal	1	2	1	0	0
	Punnamada	1	2	1	0	0
	Vadacanal	1	2	1	0	0
	Pallathuruthy	1	1	1	1	1
	Gurumandiram	1	2	1	0	0
Cherthala	Velorvattom	1	2	1	1	1
	Kurikkichira	1	2	1	0	0
	Sasthamkavala	1	2	1	0	0
Haripad	Mampara	1	2	1	1	1
	Thulamparambu	1	2	1	0	0
Chengannur	Mangalam	1	2	1	0	0
	Edanadu	1	2	1	1	1
Kayamkulam	Krishnapuram	1	2	1	1	1
	Koyipallikarima	1	2	1	0	0
Mavelikkara	Mavelikkara	1	2	1	1	1
	Punnamoodu	1	2	0	0	0

	Iyka junction	1	2	1	0	0

3.2. Public Health & Field-Level Workforce

These individuals are the backbone of surveillance, maternal-child health, and decentralised care.

Cadre	Health services	Municipal common services	Total
HS (Health Supervisors)	12	06	18
HI (Health Inspectors)	55	06	61
LHS (Lady Health Supervisor)	12	0	12
LHI (Lady Health Inspectors)	65	0	65
JPHN (Jr Public Health Nurses)	370	0	370
JHI (Jr Health Inspectors)	270	46	316
MLSP (Mid-Level Service Providers)	358	0	358
Palliative Nurses	125	0	125
RBSK Nurses	74	0	74
PRO	24	0	24
Epidemiologist	14	NA	14
Data Manager	13	NA	13

3.3. Community & Support Cadre

This group represents the surge capacity of the district—people who can be called upon for logistics, rescue, and specialised support.

Cadre	Number
ASHA Workers	1740
AWW (Anganwadi Workers)	2047
Emergency Medical Volunteers (Trained)	2959
Kudumbashree	30732
MNREGS	394466
Purusha Swayam Sahaya Sangham	03 (Dosth Purusha Swayam Sahaya Sangham)
	Gramasree Purusha Swayam Sahaya Sangham, Thuravoor

	Janakeeya Purusha Swayam Sahaya Sangham
Ex-Servicemen	6263
Retired Police Officers	Exact numbers couldn't be gathered
NCC/NSS Volunteers	40-50 NSS volunteers/colleges
	500 NCC volunteers
One Health Community Volunteers	50987
One Health Community Mentors	10642
Volunteers registered under Palliative care	5598

3.4. Community Organisations

This section details the presence of community-based organisations (CBOs), non-governmental organisations (NGOs), faith-based organisations (FBOs), Kudumbashree Self-Help Groups (SHGs), and Ayalkootams within the District. These groups enhance grassroots mobilisation, resource distribution, and support networks crucial for pandemic response and community resilience.

Category	**Total Count**
NGOs	130
NGOs registered under palliative care	96
Religion-based organisations	48
Foreign-based organisations	76 as per FCRA 2017 reports
Sports Club/youth clubs	25
Kudumbashree	30732
Political organisations	7
Residential organisations	7 residents' associations
	228 Housing societies

Swanthana Mithram Programme

The Swanthana Mithram Programme, jointly implemented by the Health Department and Kudumbashree in Alappuzha district, is being carried out as an ongoing initiative to strengthen community-based palliative care services.

3.5. Administrative & Emergency Services

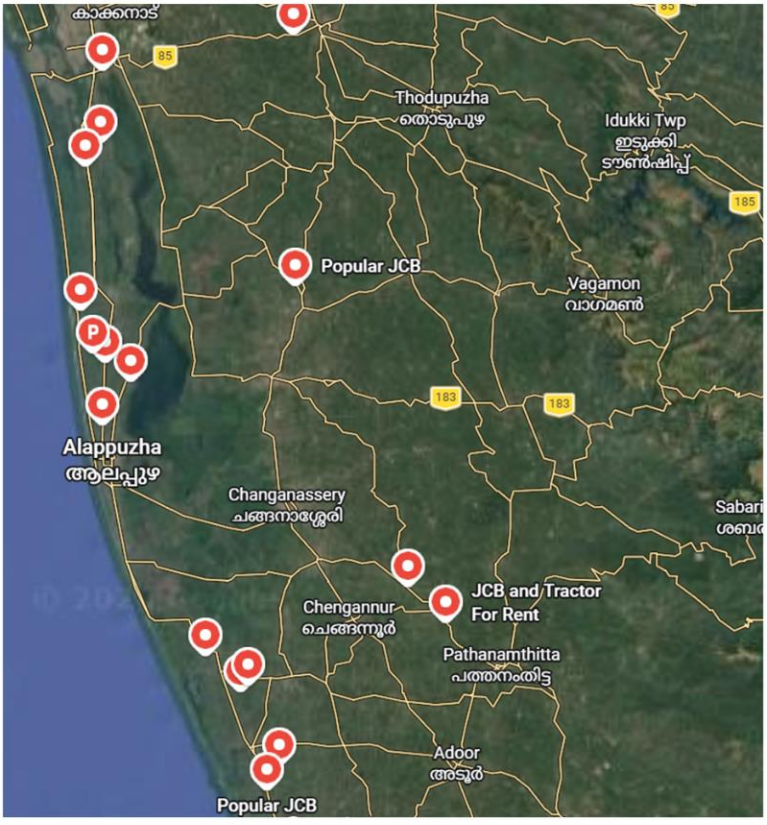
This section outlines the availability of key non-health emergency support services and infrastructure within the district, which are essential for effective pandemic preparedness and response. These facilities support law enforcement, disaster response, water supply, logistics, mobility, and community-level interventions during public health emergencies.

Category	Total Count
Police Stations	54
Fire & Rescue Stations	08 • Alappuzha • Aroor • Cherthala • Thakazhy • Harippad • Kayamkulam • Mavelikkara • Chengannur
Water Pumping Points	38
Public Distribution System (PDS)	1201 (1134 active)

3.6. Information regarding resources

The availability of essential transport and support resources plays a quiet but critical role in saving lives. Equipment such as ambulances, mobile mortuaries, amphibious ambulances, and motorised boats ensures that patients, samples, and healthcare teams can move swiftly even in flooded, remote, or difficult terrains. Heavy vehicles like JCBs, cranes, tractors, and torus lorries support logistics, waste management, emergency infrastructure, and rapid conversion of spaces into care or isolation facilities. Taxis, four-wheel-drive vehicles, and trucks help maintain continuity of essential services, reach vulnerable populations, and support home-based care and supply delivery.

Means of transportation	Total Count
JCB	42
Crane	23
Ambulances	List annexed
Mobile mortuaries	List annexed



JCB Services in Alappuzha

3. ONE HEALTH & ENVIRONMENTAL SURVEILLANCE

The One Health method integrates environmental, animal, and human health to enable proactive pandemic preparedness. District-level surveillance needs to be improved to detect and treat zoonotic and environmentally transmitted diseases early. Surveillance is strengthened through systematic assessment of animal populations, veterinary infrastructure, poultry and slaughter facilities, intersectoral coordination, and specialised tools, such as GIS-based avian influenza seasonality mapping from previous outbreaks to enable predictive alerts and ward-specific sampling to support effective pandemic preparedness in high-risk areas.

4.1. Animal & Bird Population

Mapping animal and bird populations at the district level is essential for identifying and prioritising zoonotic disease hazards such as rabies, avian influenza (H5N1), leptospirosis, anthrax, and Nipah-like spillover events. Risk classification, targeted surveillance, vaccination planning, and early epidemic detection made feasible by comprehensive population mapping enhance One Health-based pandemic preparedness.

Category	Subcategory	Population / Status	Source
Large Livestock	Cattle	~1,47,000	BAHS 2025 (District Tables)
	Buffalo	~12,300	BAHS 2025
Small Livestock	Goats	~1,05,000	20th Livestock Census
	Pigs	4,812	District-wise Pig Population (20th LSC)
Pet Animals	Dogs (Pet + Stray)	60,773 (46,639 Male; 14,134 Female)	19th Livestock Census
	Cats	11,420	20th Livestock Census
Stray Animals	Stray Dogs	9,842	District-wise Stray Dog & Cattle (20th LSC)
Bird Population	Poultry Units (Birds)	963,459	Poultry Statistics
	Poultry – Fowl	773,127	Poultry Statistics
Wild / Migratory Birds	Observed Locations	Thanneermukkom Block	Field Observation Reports
		Thrikkunnapuzha Block (Pallana)	
		Muhamma	
Avian Surveillance Indicator	Crow Mortality Events	Yes (Reported)	Field Surveillance Reports

The main risk of zoonotic diseases, Leptospirosis, in Alappuzha is concentrated in almost all LSGs, which is explained by the high density of pig farms, cattle congregation areas, and poultry units. The stray dog population in market areas, fish landing sites, and bus stations remains a substantial challenge for rabies surveillance and bite prevention. There is a considerable risk of avian influenza introduction and amplification during November - December due to the seasonal presence of migratory and resident water birds near ponds/canals/rivers/backwaters/paddy fields. Clusters of pig farms and animal shelters vulnerable to flooding further raise the risk of leptospirosis and other zoonoses mediated by the environment, especially during monsoon floods.

4.2. Veterinary Infrastructure

Veterinary institutions are a core pillar of One Health surveillance, enabling early detection of zoonotic diseases through vaccination, investigation of unusual animal illnesses or deaths, sample collection, and timely outbreak reporting. A well-mapped and responsive veterinary network strengthens coordination with human health and District systems, ensuring rapid response during zoonotic events and pandemics.

Sl. No.	Veterinary Infrastructure Facility	Number
1	Veterinary Dispensaries	55
2	Veterinary Hospitals	18
3	Veterinary Polyclinics	6
4	Private Veterinary Clinics	12
5	Regional Artificial Insemination Centres	2
6	Calf Feed Subsidy Programme Units	4
7	Animal Disease Control Project Units	1
8	District Animal Husbandry Office	1
9	Motorboat Veterinary Hospital	1
10	Mobile Veterinary Hospital	1
11	District Veterinary Centre	1

4.3. Veterinary Doctors & Workforce

Early detection, diagnosis, reporting, and reaction to animal illness epidemics depend on the availability and accessibility of qualified veterinary specialists. By identifying unusual animal morbidity or mortality promptly, collecting samples promptly, and coordinating efficiently with human health and District systems—especially during zoonotic outbreaks and pandemic-prone situations—a clearly defined veterinary workforce enhances One Health surveillance

. **Category**	**Contact number**
Government Veterinary Doctors	Details annexed
Private Veterinary Doctors	Details annexed

4.4. High-Risk Interface Points (Surveillance Sites)

Alappuzha's unique geography—characterised by extensive wetlands and a close-knit human-animal ecosystem—necessitates a robust **"One Health" surveillance strategy**. This section identifies the primary geographic and environmental "hotspots" where the risk of pathogen spillover from animals to humans is significantly elevated.

Regular monitoring of these interfaces enables early detection of zoonotic diseases and facilitates timely public health interventions. Surveillance activities at these sites are carried out in coordination with the health department, veterinary services, local self-government institutions, and other relevant stakeholders under the One Health framework.

4.4.1 Identified High-Risk Surveillance Sites

The following matrix identifies the specific interface points where environmental, animal, and human factors converge, along with the associated public health hazards.

Type of High-Risk Interface	Health Hazard	High-Risk Locations
Wetlands & Backwaters	Avian Influenza (Bird Flu) outbreaks	Kuttanadu, Kavalam, Veliyanadu, Thannermukkam, Muhamma, Kainakary, Chambakkulam, Thakazhy, Thalavady, Cherthala South, Chengannur, Ambalappuzha North, Karuvatta, Kumarapuram, Cheruthana, Veeyapuram
Backyard Poultry Farms	Avian Influenza (Bird Flu) outbreaks	Backyard poultry rearing areas across the district
Cattle Sheds near Water Bodies	West Nile Fever and other vector-borne zoonotic diseases	Thrikkunnappuzha, Pallana, Cheppad, Pallippadu, Thannermukkam
Fish & Meat Markets	Food-borne and zoonotic diseases	Major fish markets and meat markets across the district
Community Slaughter Sites	Zoonotic disease transmission	Arookutty, Muhamma, Chengannur
Migratory Bird Congregation Areas	Avian Influenza (Bird Flu) outbreaks	Wetland and backwater regions across the district
Rodent-Infested Grain Storage Areas	Leptospirosis and Scrub Typhus	Endemic areas of the Kuttanadu region

Strengthening surveillance at these high-risk interface points is essential for early detection of zoonotic diseases and for preventing potential spillover events that may lead to outbreaks affecting both human and animal populations.

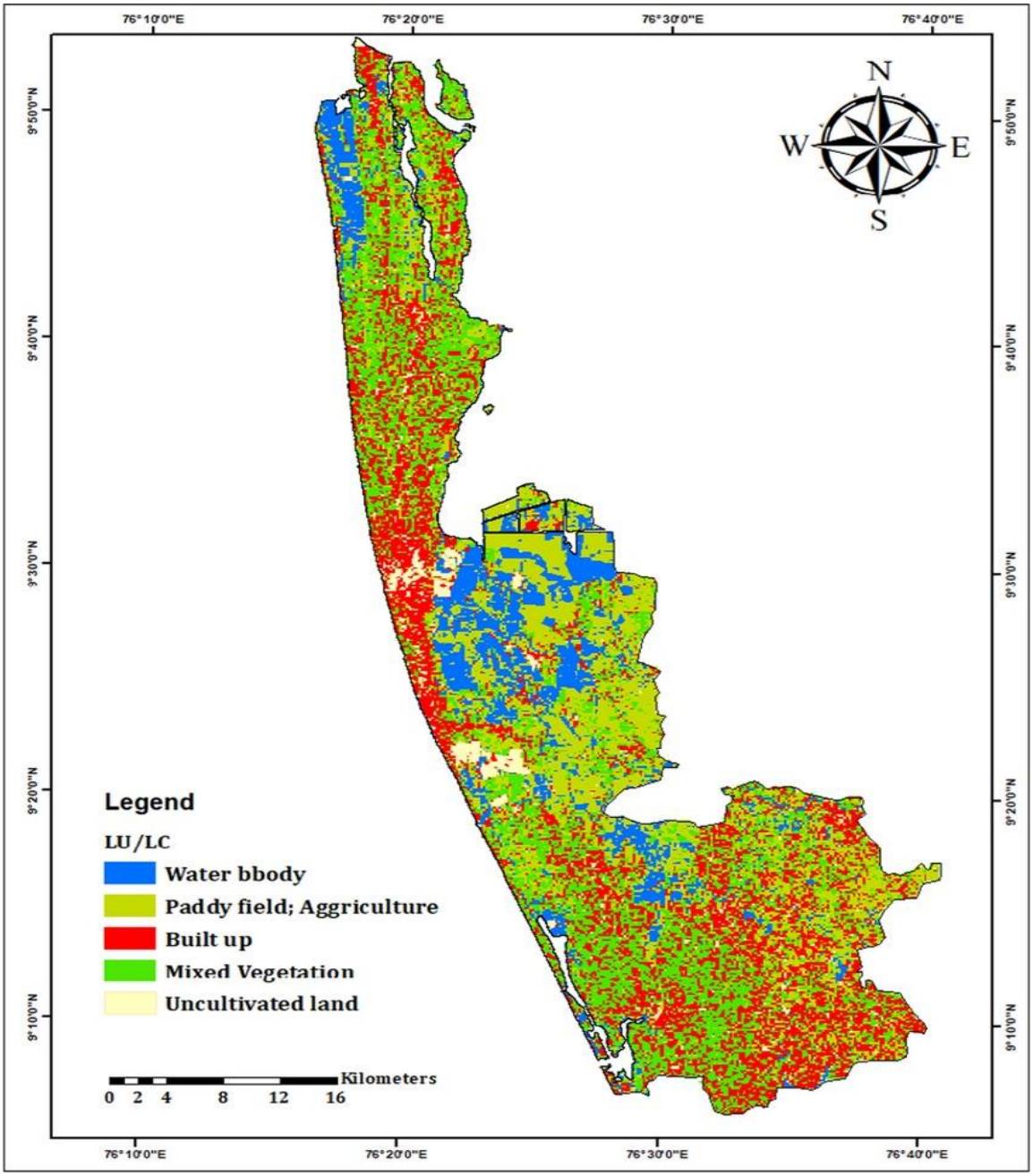


Figure 4.1: *Land Use and Land Cover (LU/LC) Map of Alappuzha District.*

4.5 Vulnerability Mapping

Vulnerability mapping is the cornerstone of risk-based surveillance in Alappuzha. By identifying populations, occupations, and geographic clusters with elevated exposure to environmental and socio-economic hazards, the district can optimise resource allocation and ensure that interventions reach those most in need during a public health emergency.

4.2.1 District Vulnerability Matrix

The following matrix categorises high-risk factors and pinpoints the specific Local Self-Government Institutions (LSGs) and demographic groups that require priority monitoring.

Vulnerability Factor	High-Risk LSGs / Areas	Key Groups / Locations	Risk Level
Flood-prone households	Lower Kuttanadu region	Wetland-adjacent communities, including Kavalam, Neelamperoor, Veliyanadu, Pulinkunnu, Eramallikkara, Chengannur, Cherthala South, Cheruthana, Thakazhy, Thalavady, Kuppappuram	High
Backyard poultry/duck rearing households	Rural wetland and agricultural areas	Households involved in poultry and duck rearing	Moderate–High
Livestock-rearing households	Arookutty, Muhamma, Chengannur, Kayamkulam	Cattle and livestock-rearing households	Moderate
Slaughterhouse & meat market workers	Arookutty, Muhamma, Chengannoor, Kayamkulam	Workers involved in slaughtering, meat processing and trading	High
Fisherfolk & fish market workers	Coastal and fishing belts	Arattupuzha, Alappuzha municipal belt, Thumpoly, Mararikulam, Aroor, Ezhupunna, Kakkazham, Thottappally, Purakkadu, Thrikkunnappuzha	High
Sanitation workers	Urban and municipal areas	Pallippuram and municipal belts	Moderate
Daily wage/migrant workers	Industrial zones	Pallippuram, Thuravoor, Aroor, Ezhupunna industrial hubs	Moderate

Limited access to safe water & sanitation	Kuttanadu belt	Communities dependent on untreated water sources	High

The presence of backyard poultry, duck farming, wetlands, and migratory bird habitats in parts of Alappuzha District highlights the importance of continued surveillance for zoonotic diseases such as Avian Influenza (H5N1). Strengthening coordination between public health, veterinary services, and local governance institutions is essential for early detection and prevention of outbreaks.

4.6 Historical Outbreak Analysis: Avian Influenza (H5N1)

Alappuzha District is a documented hotspot for Highly Pathogenic Avian Influenza (HPAI) H5N1, primarily due to the dense population of domestic ducks in the Kuttanad region and their interface with migratory birds. This section tracks the temporal and spatial distribution of outbreaks from 2023 to 2025.

4.6.1 Longitudinal Outbreak Data (2023–2025)

The recurring nature of these outbreaks indicates that H5N1 has become regionally endemic, requiring permanent vigilance rather than seasonal response.

Year	Total Wards Affected	Top Impacted Areas	Species Affected
2025	15	Cheruthana, Thakazhy, Thottappally, Karthikappally, Chempumpuram, Karuvatta, Ambalappuzha South & North, Punnapra South, Pallippad, Muhamma, Vallethode	Duck, Poultry, Quail, Crow
2024	36	Edathua, Cheruthana, Ambalappuzha North, Thakazhy, Thazhakkara, Thalavady, Champakkulam, Muhamma, Kanjikuzhy, Cherthala Municipality, Kalavoor, Pallippuram, Thannermukkom, Puliyoor, Vayalar, Chettikkad, Kadakkarappally	Duck, Poultry, Quail, Crow, Egret, Pigeon
2023	4	Punnapra South, Alappuzha Municipality, Kayamkulam Municipality, Kavalam	Duck

4.6.2 H5N1 Outbreaks in Alappuzha District – 2025

The following locations reported H5N1 outbreaks during 2025.

Sl. No	Location	Ward	Species Affected
1	Cheruthana	W-1	Duck
2	Thakazhy	W-10	Duck

3	Thottappally	W-6	Duck
4	Karthikappally	W-4	Duck
5	Chempumpuram	W-5	Duck
6	Karuvatta	W-16	Duck
7	Ambalappuzha South	W-8	Duck
8	Punnapra South	W-5	Duck
9	Pallippad	W-1	Duck
10	Ambalappuzha North	W-11	Poultry and Quail
11	Karuvatta	W-1	Duck
12	Karuvatta	W-2	Duck
13	Ambalappuzha South	W-6	Poultry
14	Muhamma	W-13	Crow
15	Vallethode	W-13	Crow

4.6.3 H5N1 Outbreaks in Alappuzha District – 2024

During 2024, multiple H5N1 outbreaks were reported across various locations in the district, affecting poultry, ducks, and wild birds.

Sl No:	Location	Ward	Species Affected
1	Edathua	W-1	Duck
2	Cheruthana	W-3	Duck
3	Ambalappuzha North	W-6	Poultry
4	Thakazhy	W-4	Poultry
5	Edathua	W-10	Duck
6	Ambalappuzha North	W-9	Quail
7	Thazhakkara	W-11	Duck
8	Thalavady	W-13	Duck
9	Champakkulam	W-3	Poultry
10	Muhamma	W-9	Poultry
11	Kanjikuzhy	W-10	Poultry
12	Muhamma	W-4	Crow
13	Cherthala Municipality	W-15	Poultry
14	Cherthala Municipality	W-16	Poultry
15	Muhamma	W-1	Poultry and Quail
16	Cherthala South	W-11	Poultry
17	Kalavoor	W-23	Poultry
18	Punnapra South	W-1	Crow
19	Cherthala Municipality	W-25	Crow
20	Pallippuram	W-15	Poultry
21	Pallippuram	W-11	Poultry

Sl No:	Location	Ward	Species Affected
22	Pallippuram L1	W-3	Poultry
23	Pallippuram L2	W-3	Poultry
24	Kuppappuram	W-13	Egret
25	Thannermukkom	W-5	Poultry
26	Thannermukkom	W-2	Crow
27	Cherthala Municipality	W-4	Poultry
28	Puliyoor	W-5	Poultry
29	Vayalar	W-13	Crow
30	Chettikkad	W-18	Poultry
31	Puliyoor	W-5	Pigeon
32	Pallippuram	W-14	Poultry
33	Pallippuram	W-16	Poultry
34	Kanjikuzhy	W-2	Poultry
35	Kadakkarappally	W-2	Quail
36	Pallippuram	W-12	Poultry

4.6.4 H5N1 Outbreaks in Alappuzha District – 2023

Sl. No	Location	Ward	Species Affected
1	Punnapra South	W-6	Duck
2	Alappuzha Municipality	W-8	Duck
3	Kayamkulam Municipality	W-30	Duck
4	Kavalam	W-11	Duck

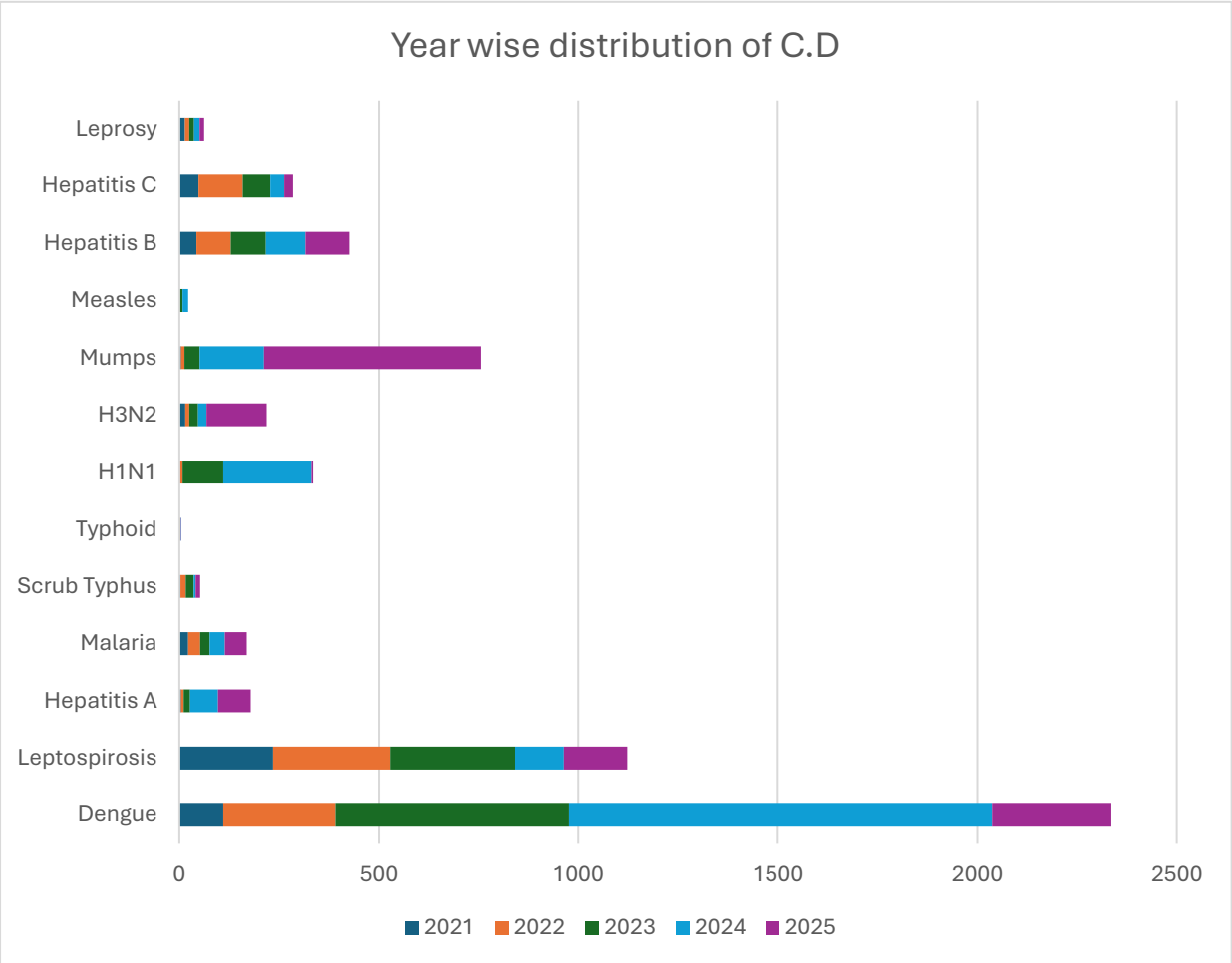
4. EPIDEMIOLOGICAL TRENDS (2021–2025)

Disease surveillance is the systematic collection, analysis, and interpretation of health data for planning, implementation, and evaluation of public health practice. This section presents the disease surveillance profile of the district based on routine reporting systems and outbreak investigations to identify priority diseases, seasonal patterns, and emerging public health threats.

5.1 Disease Burden among human beings (Last 5 Years)

Analysis of disease-wise data for the last five years helps identify persistent public health problems, emerging diseases, and changes in disease burden. This information supports prioritisation of prevention, preparedness, and response activities at the district level.

Disease	2021	2022	2023	2024	2025	Trend
Dengue	110	281	586	1060	1299	Increasing
Leptospirosis	235	293	314	272	271	Decreasing
Hepatitis A	4	7	16	70	82	Increasing
Malaria	22	30	24	38	55	Increasing
Scrub Typhus	3	13	20	5	11	Decreasing
Typhoid	1	1	1	1	1	Stable
H1N1	1	7	102	221	4	Decreasing
H3N2	15	10	22	21	151	Increasing
ADD	9338	19414	21811	24415	25298	Increasing
Mumps	4	9	38	161	545	Increasing
Measles	0	1	7	14	0	Decreasing
Hepatitis B	43	86	88	99	110	Increasing
Hepatitis C	48	111	69	35	22	Decreasing
Tuberculosis	1246	1316	1151	1172	1079	Decreasing
Leprosy	14	11	12	14	11	Decreasing
COVID-19	268927	78637	3824	333	616	Decreasing



5.2 Seasonal Trend Analysis

Seasonal analysis helps anticipate surges (e.g. dengue in monsoon, leptospirosis after floods, influenza in cooler months) and plan pre-emptive vector control, stockpiling of IV fluids, and awareness campaigns at the district level.

5.2.1 Dengue

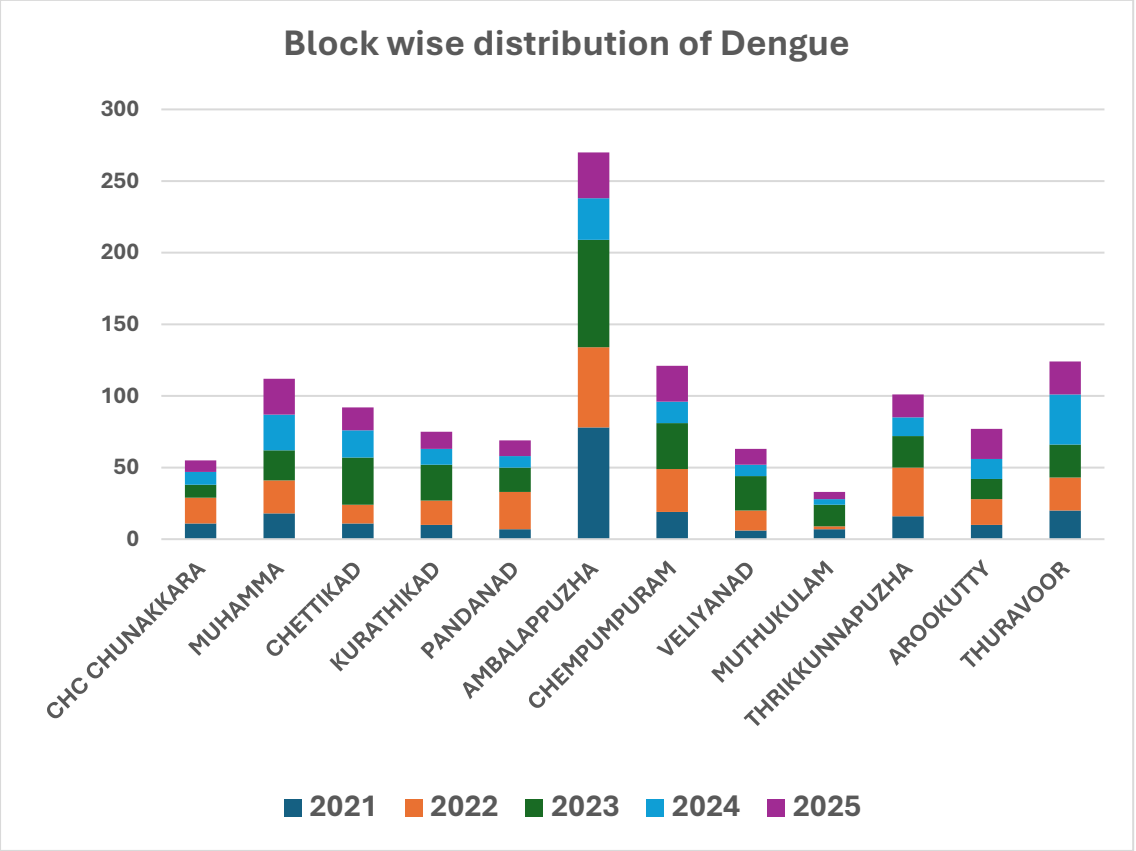
Dengue is a major seasonal vector-borne disease strongly associated with rainfall, water stagnation, and increased mosquito breeding during the monsoon period.

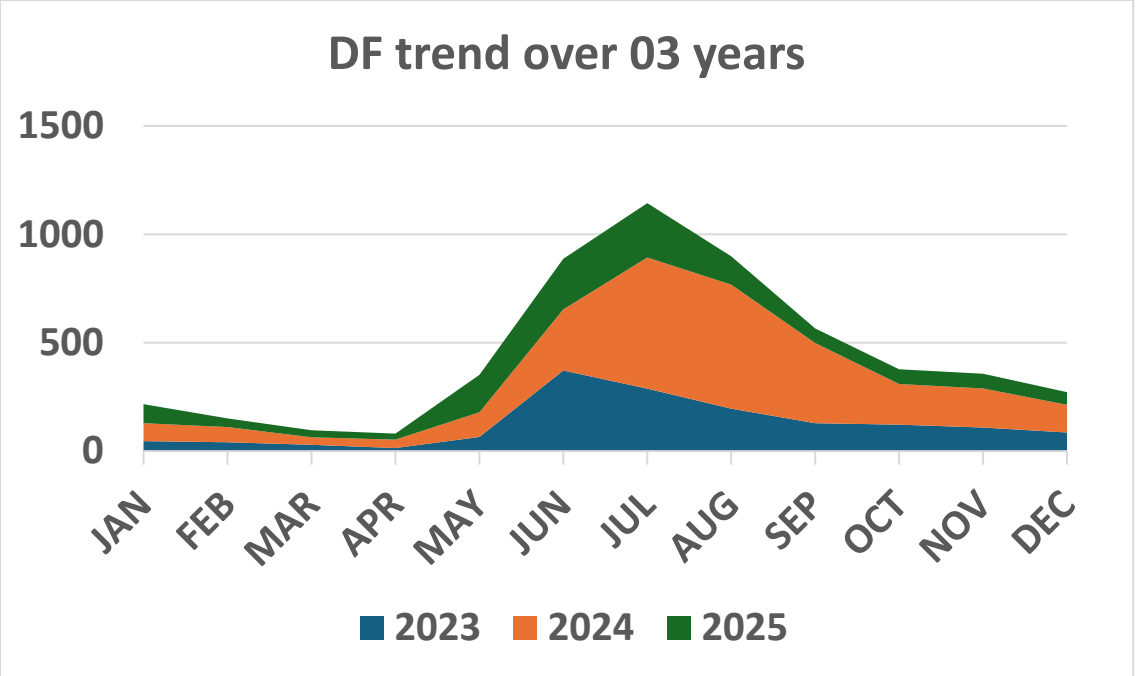
Peak: July–November

Dengue – Block-wise Yearly Distribution (2021–2025)

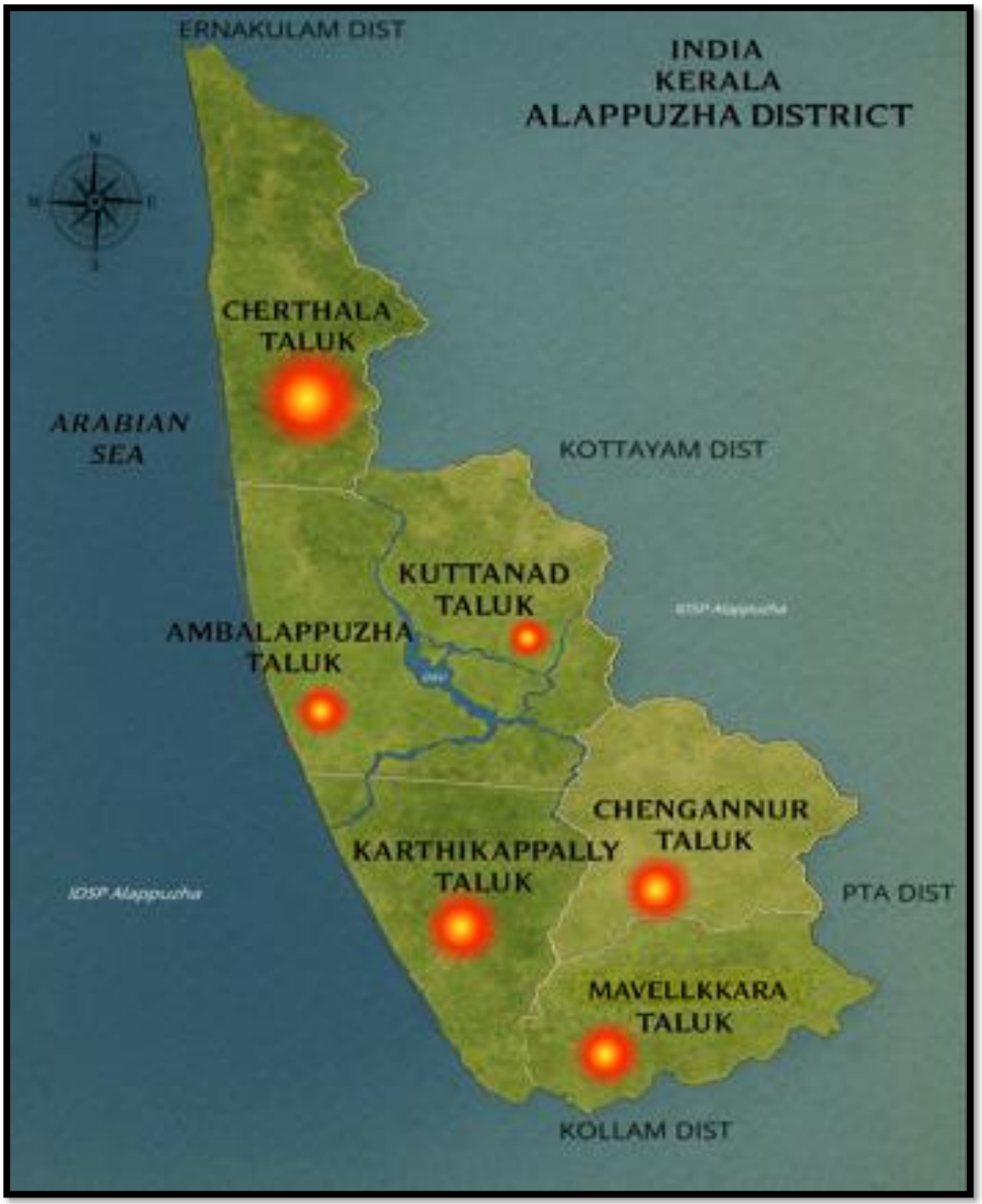
BLOCK	Dengue – Yearly Distribution					
	2021	2022	2023	2024	2025	Total
CHUNAKKARA	9	52	173	257	73	564
MUHAMMA	98	73	130	393	63	757
CHETTIKAD	76	86	100	89	30	381
KURATHIKAD	24	58	77	138	47	344
PANDANAD	28	44	49	59	56	236
AMBALAPPUZHA	53	64	228	111	54	510
CHEMPUMPURAM	3	23	26	15	11	78
VELIYANAD	8	10	36	50	28	132
MUTHUKULAM	18	30	39	125	54	266
THRIKUNNAPUZHA	11	31	63	109	48	262
AROOKUTTY	31	73	62	231	106	503
THURAVOOR	32	109	209	365	143	858

The data indicates a noticeable increase in dengue cases across most blocks over the past five years, with a marked surge during 2023 and 2024. Blocks such as Thuravoor, Muhamma, and Chunakkara reported comparatively higher case burdens, reflecting localised transmission and possible environmental risk factors such as water stagnation and dense population clusters. Although a decline is observed in some blocks in 2025, dengue continues to remain a significant seasonal public health concern in the district. These trends highlight the need for intensified vector control activities, community awareness programs, source reduction measures, and strengthened surveillance, particularly during the pre-monsoon and monsoon months.


Block wise distribution of Dengue
300
250
200
150
100
50
0
CHC CHUNAKKARA
MUHAMMA
CHETTIKAD
KURATHIKAD
PANDANAD
AMBALAPPUZHA
CHEMPUMPURAM
VELIYANAD
MUTHUKULAM
THRIKKUNNAPUZHA
AROOKUTTY
THURAVOOR
2021
2022
2023
2024
2025


DF trend over 03 years
1500
1000
500
0
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
2023
2024
2025

Hot Spots of Dengue of Alappuzha District



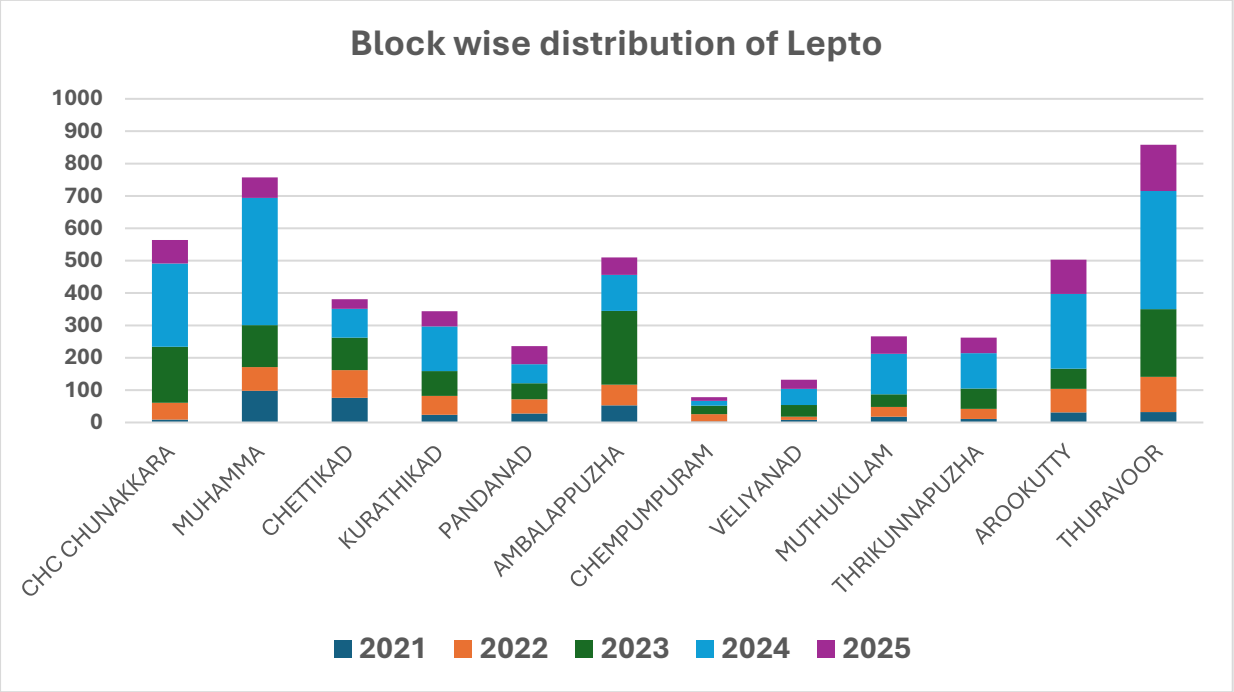
5.2.2 Leptospirosis

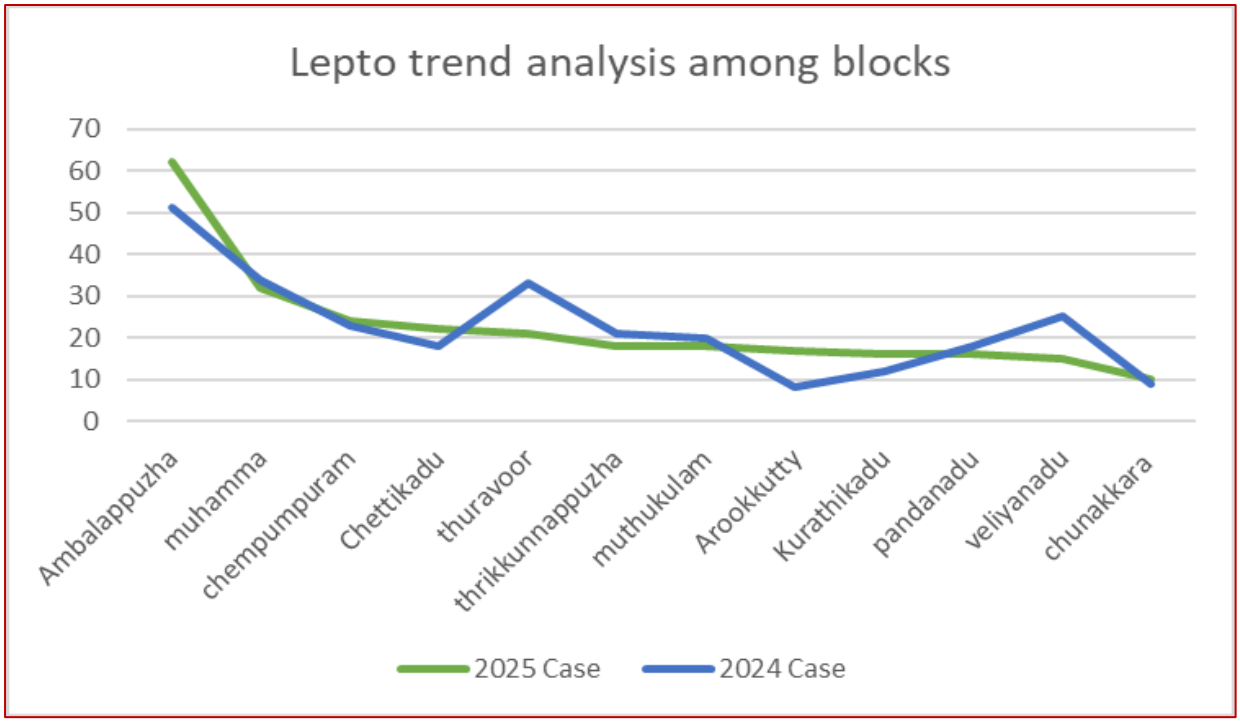
Leptospirosis cases are closely linked to monsoon rains, flooding, and occupational exposure, particularly in low-lying and waterlogged areas.

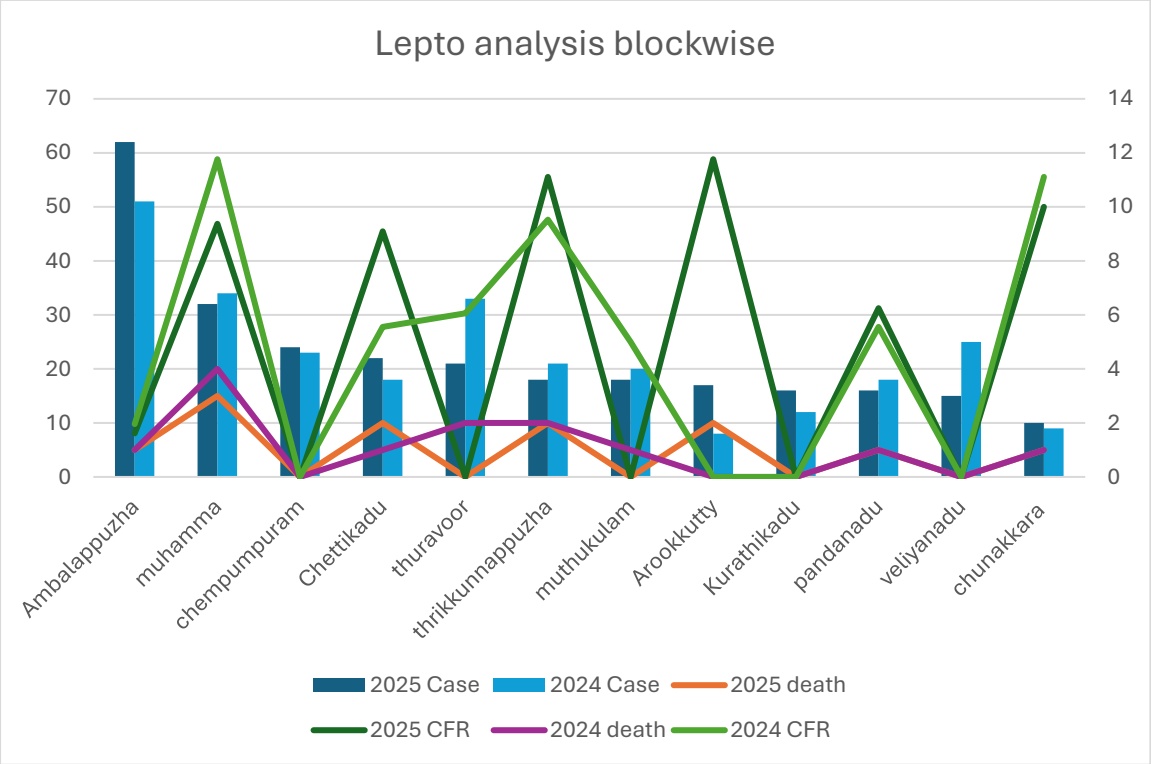
Peak: June - August

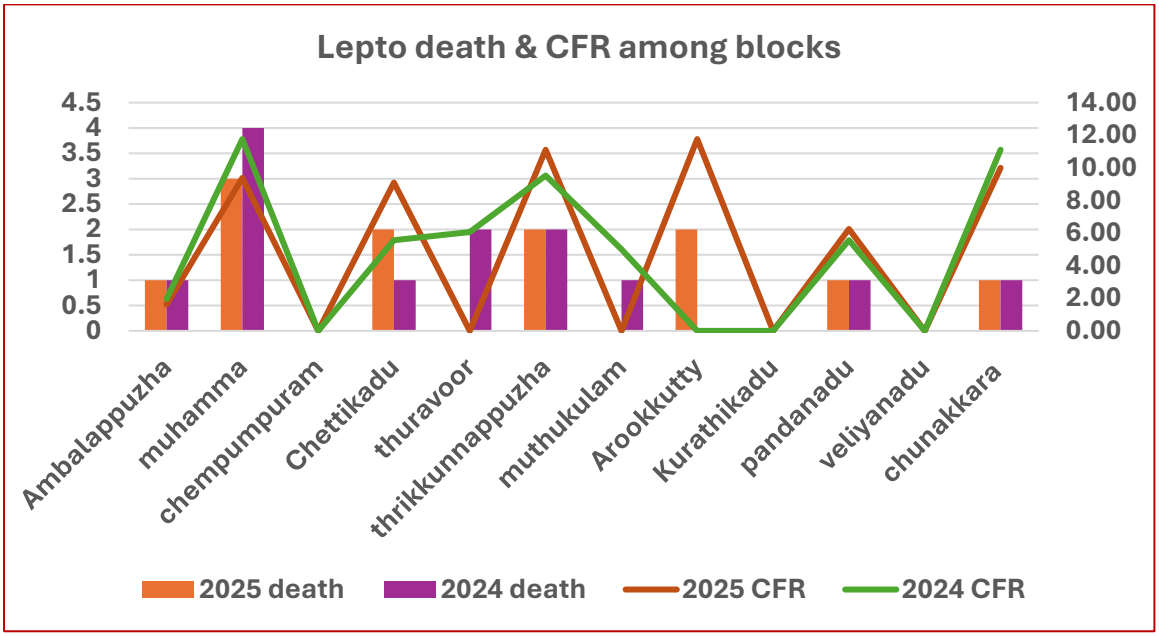
Leptospirosis – LSG-wise Yearly Distribution (2021–2025)

Block	Leptospirosis – Yearly Distribution					
	2021	2022	2023	2024	2025	Total
CHC CHUNAKKARA	11	18	9	9	8	55
MUHAMMA	18	23	21	25	25	71
CHETTIKAD	11	13	33	19	16	68
KURATHIKAD	10	17	25	11	12	75
PANDANAD	7	26	17	8	11	69
AMBALAPPUZHA	78	56	75	29	32	270
CHEMPUMPURAM	19	30	32	15	25	121
VELIYANAD	6	14	24	8	11	63
MUTHUKULAM	7	2	15	4	5	33
THRIKKUNNAPUZHA	16	34	22	13	16	101
AROOKUTTY	10	18	14	14	21	77
THURAVOOR	20	23	23	35	23	124


Block wise distribution of Lepto
1000
900
800
700
600
500
400
300
200
100
0
CHC CHUNAKKARA
MUHAMMA
CHETTIKAD
KURATHIKAD
PANDANAD
AMBALAPPUZHA
CHEMPUMPURAM
VELIYANAD
MUTHUKULAM
THRIKUNNAPUZHA
AROOKUTTY
THURAVOOR
2021
2022
2023
2024
2025


Lepto trend analysis among blocks
70
60
50
40
30
20
10
0
Ambalappuzha
muhamma
chempumpuram
Chettikadu
thuravoor
thrikkunnappuzha
muthukulam
Arookkutty
Kurathikadu
pandanadu
veliyanadu
chunakkara
2025 Case
2024 Case





Lepto death & CFR among blocks

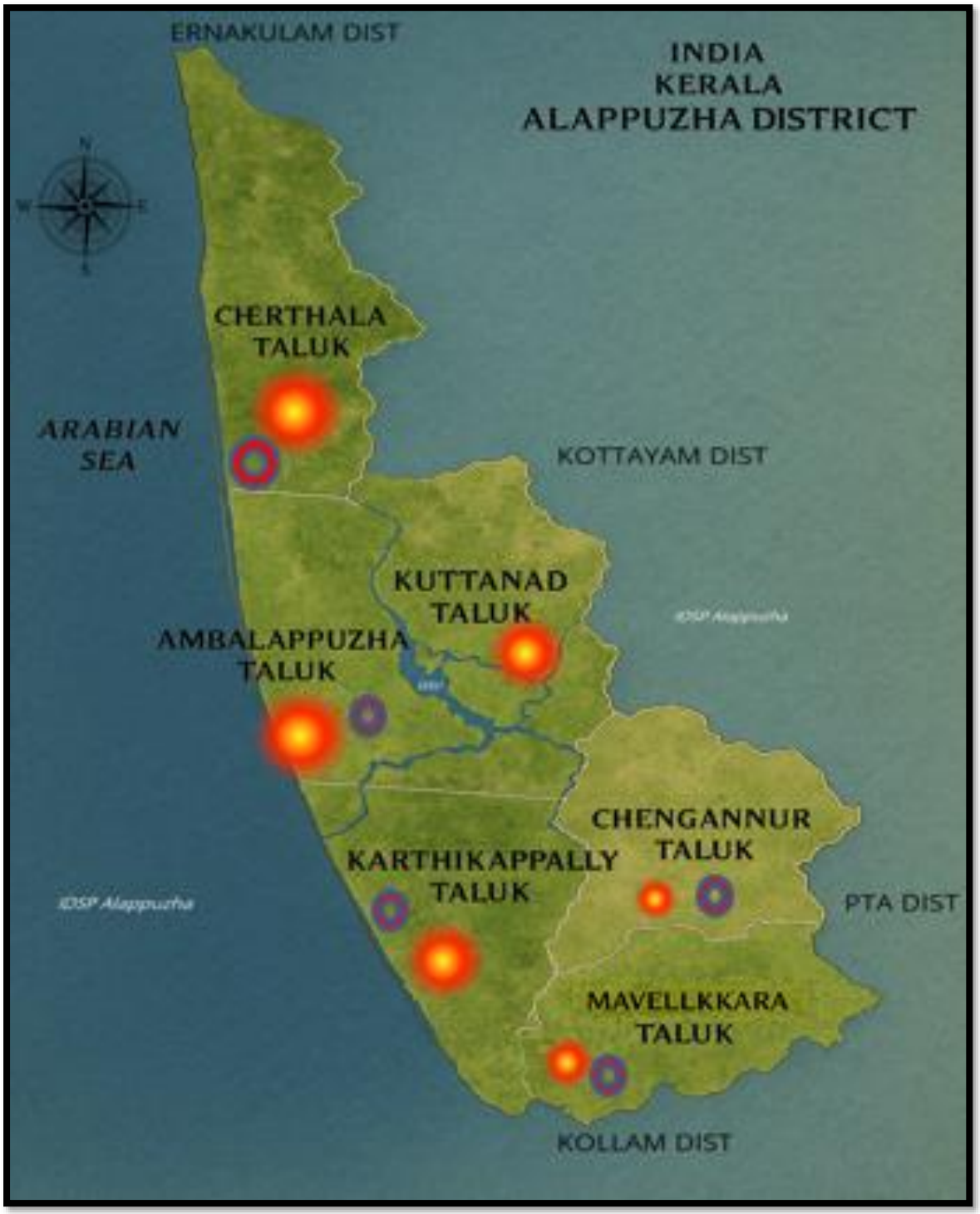
Block	2025		2024	
	Death	CFR	Death	CFR
Arookutty	2	11.76	0	0.00
Thuravur	0	0.00	0	0.00

Muhamma	3	9.38	4	11.76
Chettikad	2	9.09	1	5.56
Ambalappuzha	1	1.61	1	1.96
Thrikunnapuzha	2	11.11	2	9.52
Muthukulam	0	0.00	1	5.00
Chunakkara	1	10.00	1	11.11
Kurathikad	0	0.00	0	0.00
Veliyanad	0	0.00	0	0.00
Chembumpuram	0	0.00	0	0.00
Pandanad	1	6.25	1	5.56
Total	**12**	**4.43**	**13**	**4.78**

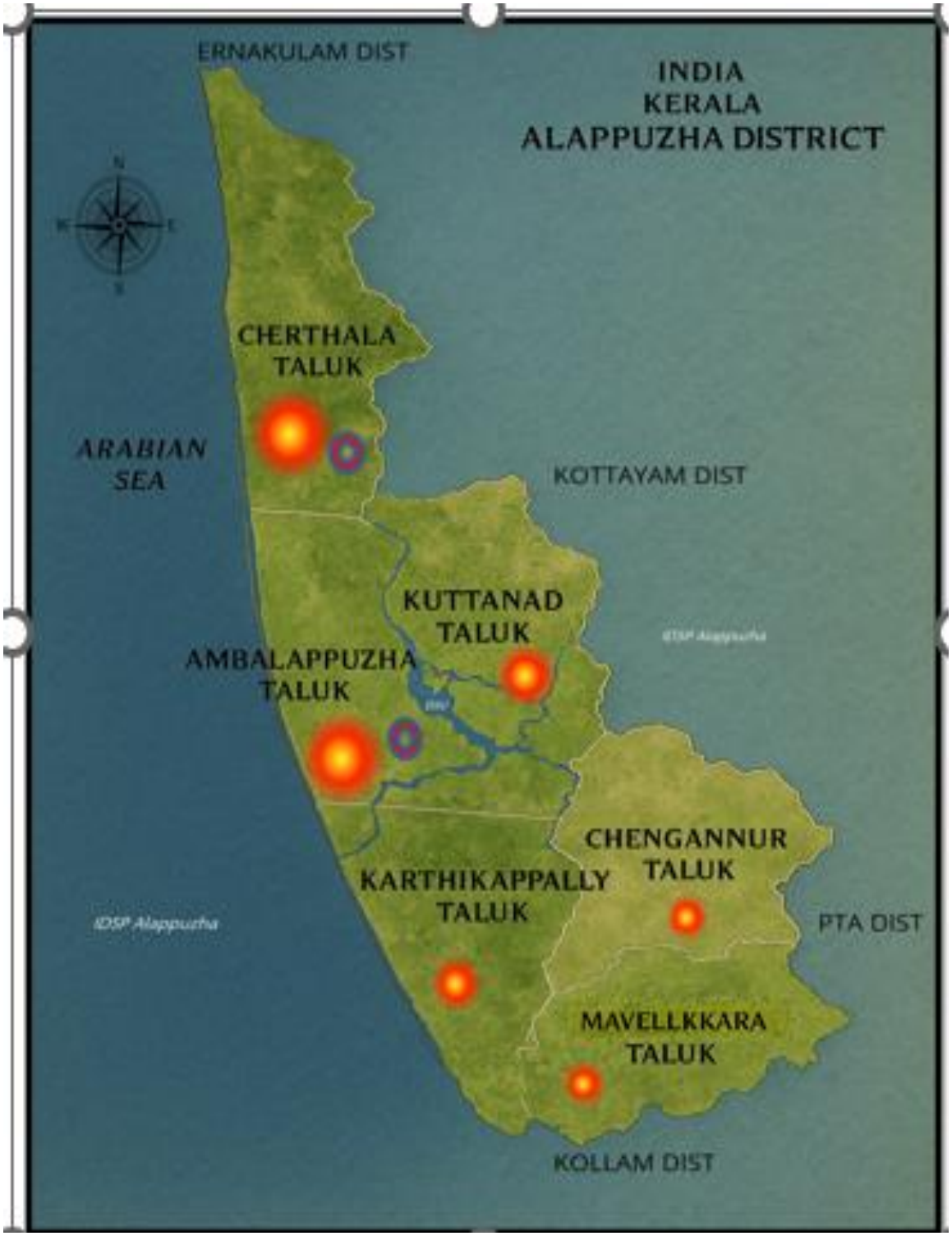
Leptospirosis cases from 2021 to 2025 show consistent occurrence across multiple blocks, with a clear seasonal rise during the monsoon months. Higher case burdens were noted in Ambalappuzha, Thuravoor, Chempumpuram, and Thrikunnapuzha, likely due to low-lying terrain, waterlogging, and occupational exposure.

Block-wise analysis of deaths and case fatality rate (CFR) for 2024–2025 shows continued mortality across several blocks with varying CFR levels. In 2025, 12 deaths were reported with a CFR of 4.43%, a slight decline from 2024 (13 deaths; CFR 4.78%). Higher CFRs in Arookutty, Thrikunnapuzha, Muhamma, and Chettikad highlight the need for strengthened early diagnosis, prompt treatment, and effective referral systems. Continuous surveillance, timely chemoprophylaxis during monsoon, and improved peripheral clinical management remain essential to reduce mortality.

Leptospirosis Hotspots in Alappuzha District 2024



Leptospirosis Hotspots in Alappuzha District 2025



5.2.3 Viral Hepatitis - A

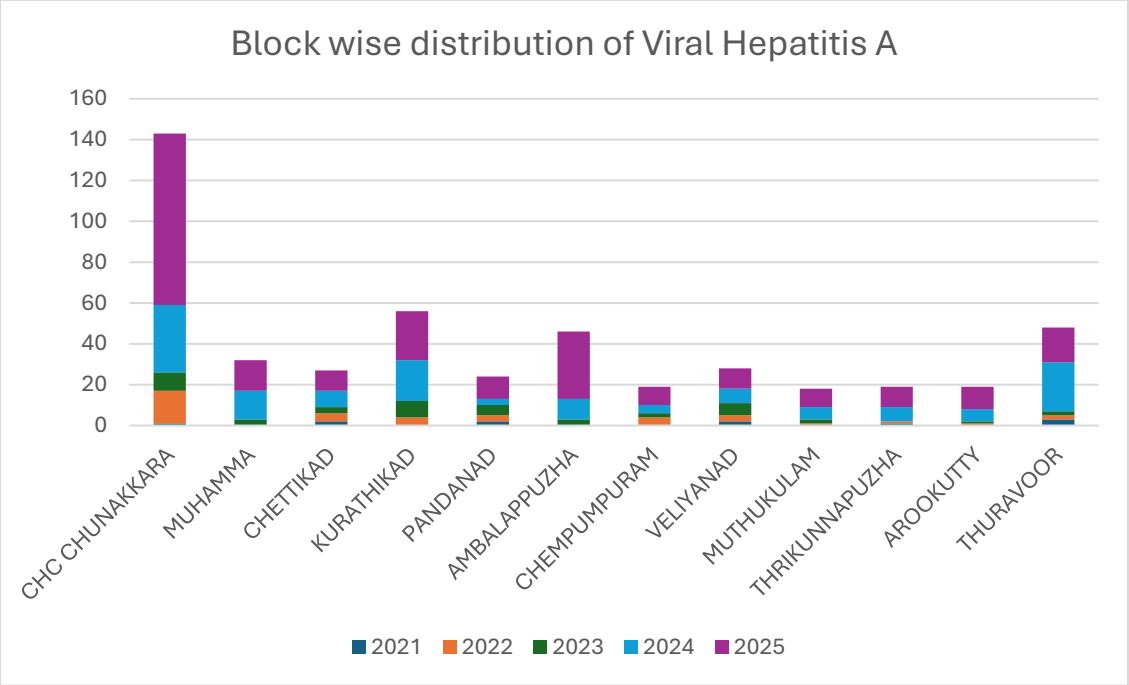
Hepatitis A cases are commonly associated with unsafe drinking water, food contamination, and breakdowns in sanitation, often presenting as clusters or outbreaks.

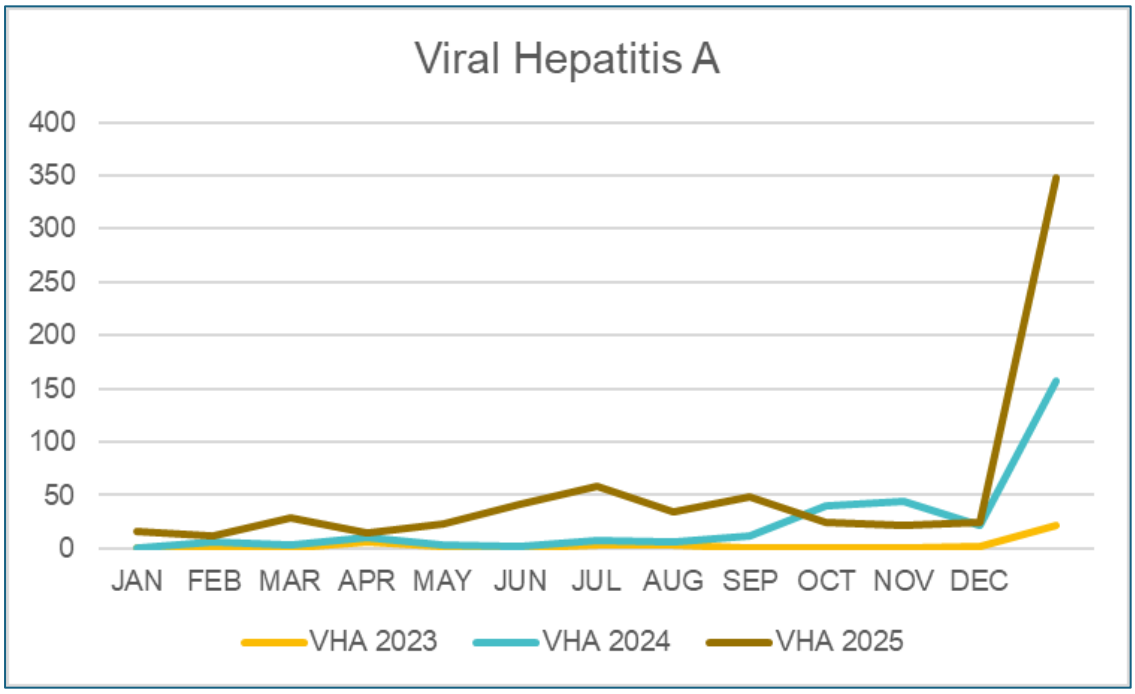
Peak: October - December

Hepatitis A – LSG-wise Yearly Distribution (2021–2025)

BLOCK	Hep A – Yearly Distribution					
	2021	2022	2023	2024	2025	Total
CHUNAKKARA	1	16	9	33	84	143
MUHAMMA	2	2	3	14	15	35
CHETTIKAD	2	4	3	8	10	20
KURATHIKAD	0	4	8	20	24	56
PANDANAD	2	3	5	3	11	24
AMBALAPPUZHA	0	0	3	10	33	46
CHEMPUMPURAM	0	4	2	4	9	19
VELIYANAD	2	3	6	7	10	28
MUTHUKULAM	0	1	2	6	9	18
THRIKUNNAPUZHA	1	1	0	7	10	19
AROOKUTTY	0	1	1	6	11	19
THURAVOOR	3	2	2	24	17	48

The analysis of Hepatitis A cases from 2021 to 2025 shows a gradual increase in reported cases across several blocks, with a notable rise in 2024 and 2025. Blocks such as Chunakkara, Ambalappuzha, Thuravoor, and Kurathikad reported comparatively higher case numbers, indicating possible localised outbreaks linked to contamination of drinking water sources or lapses in sanitation. The seasonal peak observed during October to December further suggests the influence of post-monsoon environmental conditions on disease transmission. These trends highlight the need for strengthened water quality surveillance, improved sanitation practices, prompt outbreak investigation, and community awareness on safe drinking water and food hygiene. Early detection of clusters and timely public health interventions remain essential to prevent larger outbreaks.


Block wise distribution of Viral Hepatitis A
160
140
120
100
80
60
40
20
0
CHC CHUNAKKARA
MUHAMMA
CHETTIKAD
KURATHIKAD
PANDANAD
AMBALAPPUZHA
CHEMPUMPURAM
VELIYANAD
MUTHUKULAM
THRIKUNNAPUZHA
AROOKUTTY
THURAVOOR
2021
2022
2023
2024
2025

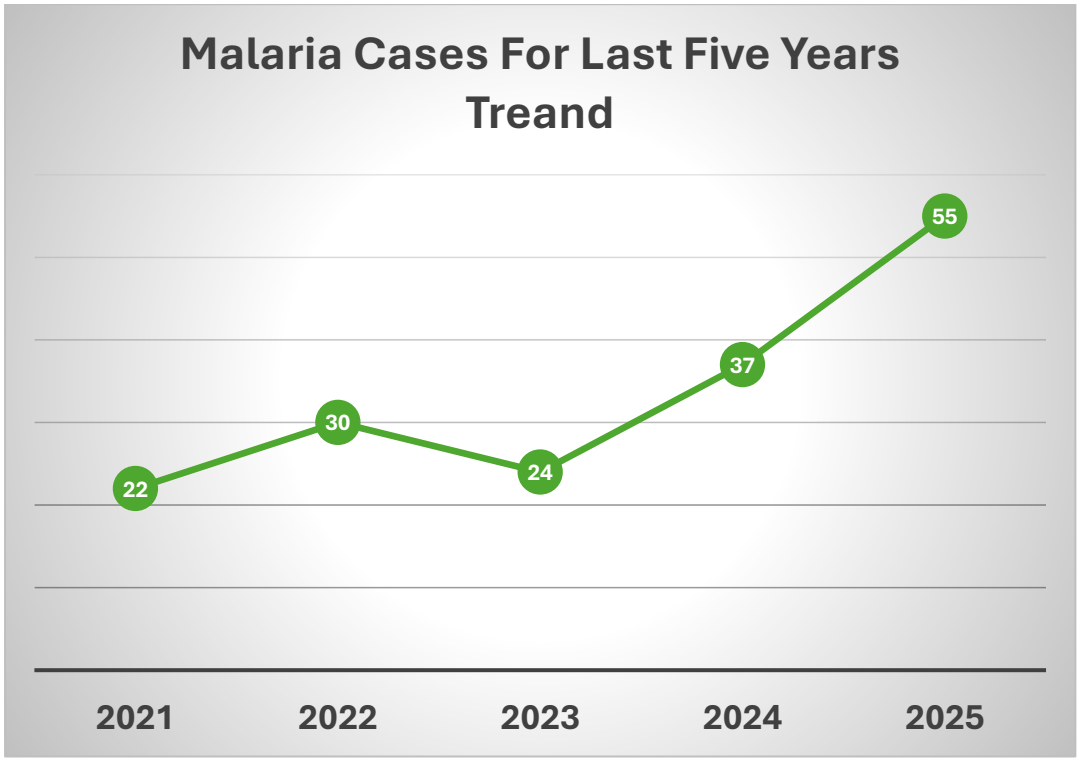

Viral Hepatitis A
400
350
300
250
200
150
100
50
0
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
VHA 2023
VHA 2024
VHA 2025

5.3 Trend of Tb Indicators: Alappuzha

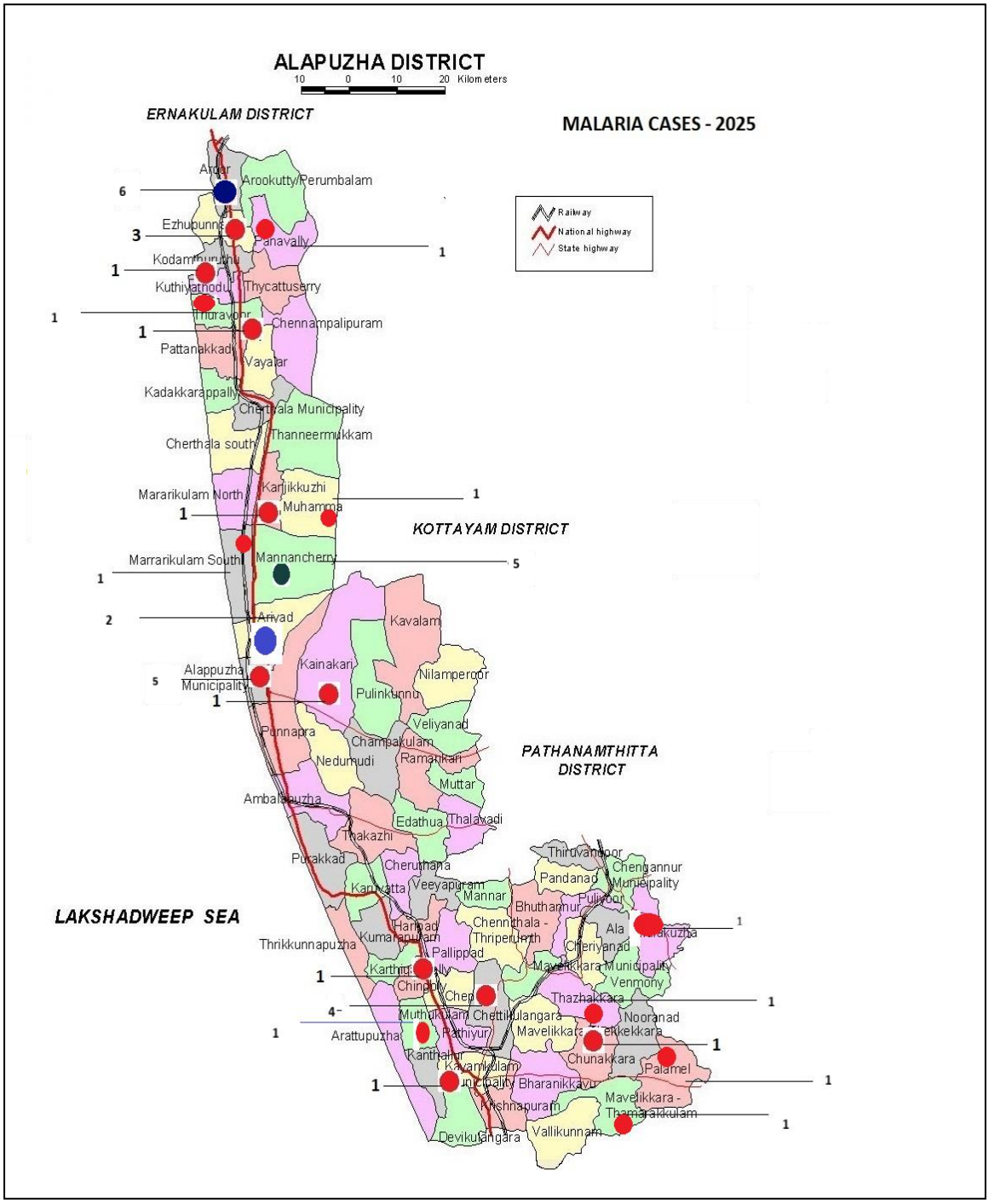
Year	Notified cases	Current Cases	Total tests	Test per lakh pop	NAAT %	UDST %	DBT %	HIV screen %	DM screen %
2021	945	1246	10192	481	90.8	70.2	76	93.2	93.2
2022	969	1316	19647	893	87.3	83.2	78	93.5	94.5
2023	826	1151	29831	1355	47.7	84.8	84.2	90.5	95.2
2024	852	1172	33867	1539	72.7	94	84	95	94.5
2025	774	1079	46351	2106	91	96	48	94	93

The trend of TB indicators in Alappuzha from 2021 to 2025 shows a steady improvement in diagnostic efforts and surveillance activities. The total number of tests conducted has increased significantly over the years, this reflects strengthened case detection strategies and expanded diagnostic coverage, including increased utilisation of NAAT testing. Continued focus on early diagnosis, treatment adherence, and targeted screening in high-risk populations remains essential to further strengthen TB control efforts in the district.

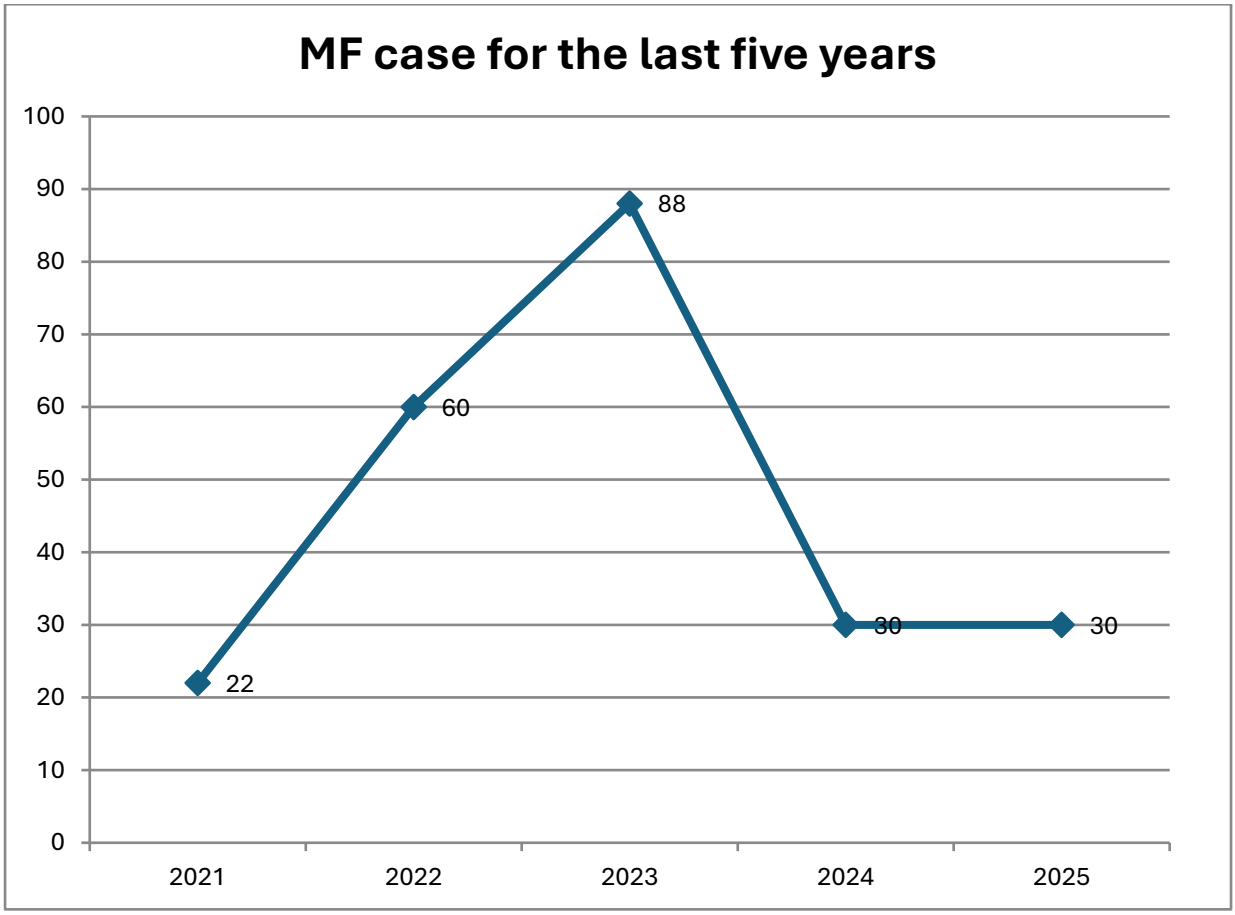
5.4 Malaria


Malaria Cases For Last Five Years
Treand
22
30
24
37
55
2021
2022
2023
2024
2025

5.5 Malaria Hotspots

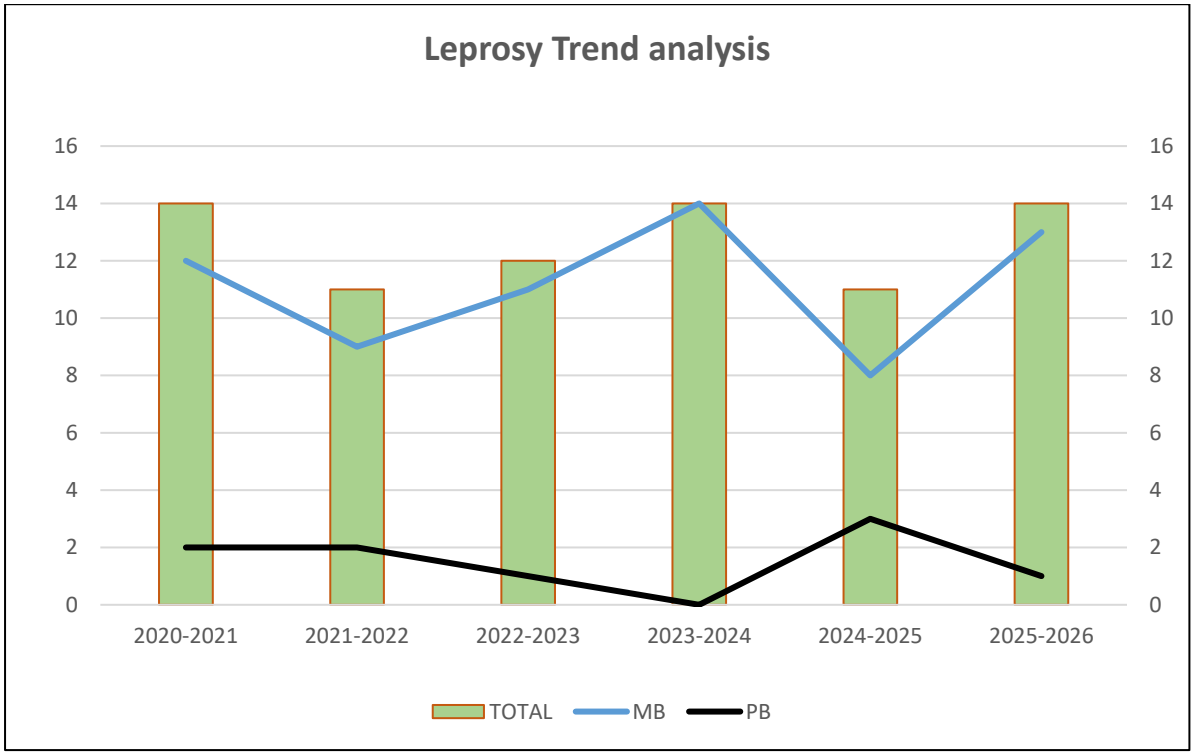


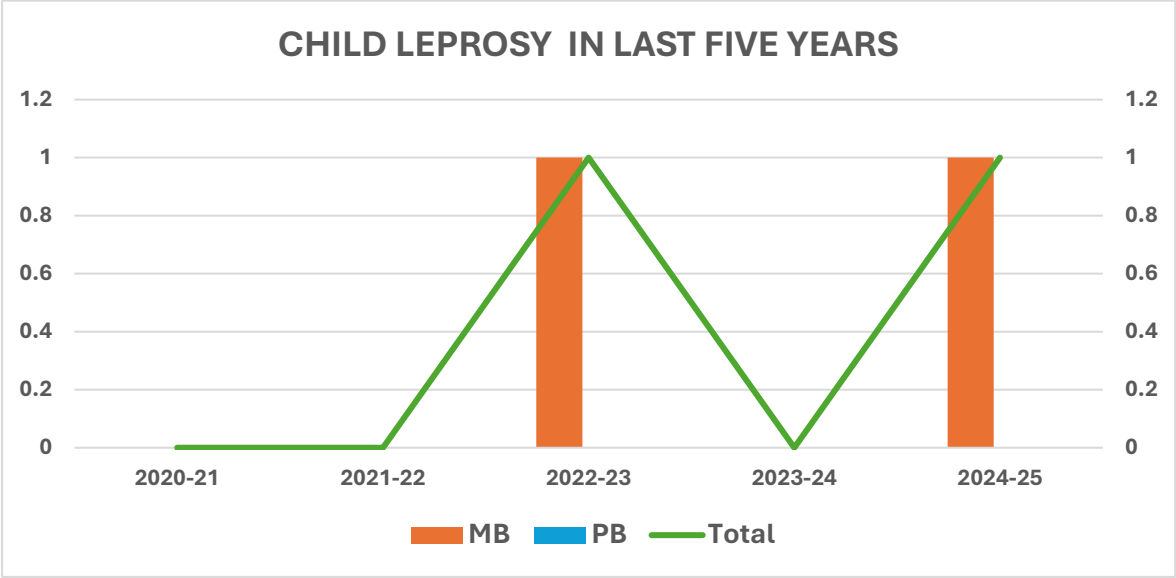
5.6 Micro-Filaria



The trend of MF cases over the last five years shows a sharp increase from 22 cases in 2021 to a peak of 88 cases in 2023. This rise may reflect intensified surveillance, active case detection, or localised transmission during that period. However, a significant decline was observed in 2024, with cases reducing to 30 and remaining stable in 2025. The reduction in recent years suggests improved control measures, early detection, and effective treatment interventions. Continuous surveillance and sustained vector control activities remain essential to maintain this declining trend and prevent resurgence.

5.7 Leprosy


Leprosy Trend analysis
16
14
12
10
8
6
4
2
0
2020-2021
2021-2022
2022-2023
2023-2024
2024-2025
2025-2026
TOTAL
MB
PB


CHILD LEPROSY IN LAST FIVE YEARS
1.2
1
0.8
0.6
0.4
0.2
0
2020-21
2021-22
2022-23
2023-24
2024-25
MB
PB
Total

5.8 Transmission Trend- 2025

For effective management of public health issues, it is important to track the trend of disease transmission modes. It helps identify the population or place at high risk that can be used to predict outbreaks and implement targeted interventions as quickly as possible. Understanding these kinds of trends enables authorities to allocate resources efficiently and change their strategies adequately based on the trend that follows.

Vector-Borne Disease

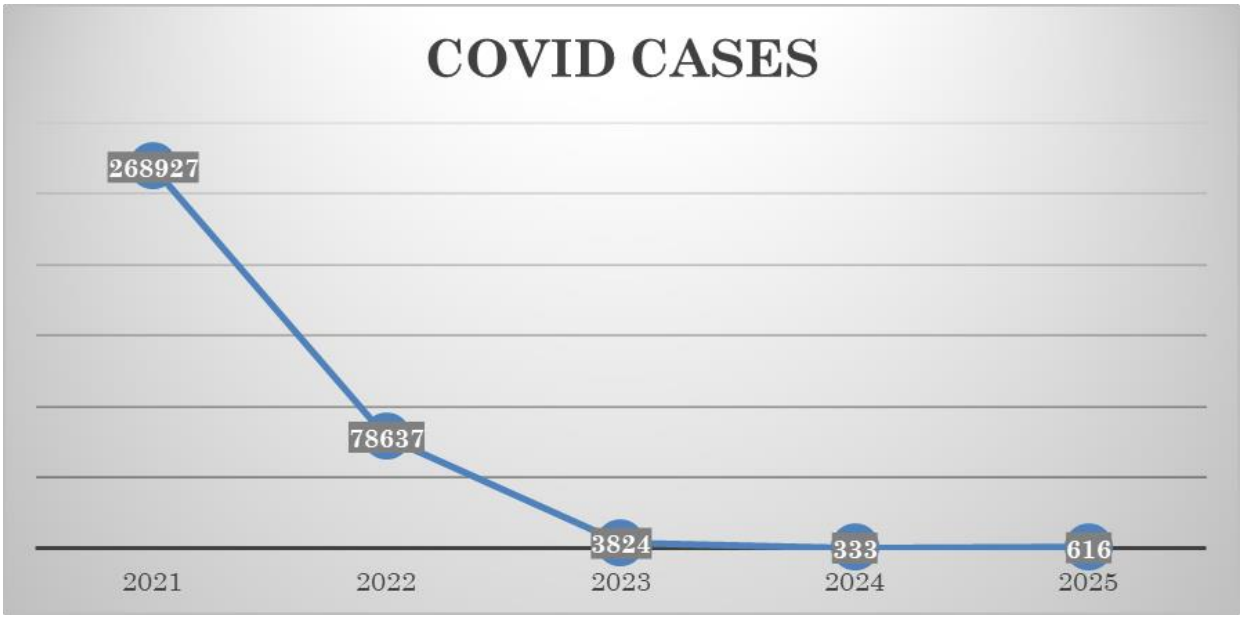
Disease	No. of Cases	No. of Deaths
Dengue	299	0
Malaria	55	0
Chikungunya	0	0

Water Borne Disease

Disease	No. of Cases	No. of Deaths
Cholera	0	0
Typhoid	1	0
Hep- A	82	0
Amoebiasis	3	0

Airborne Disease 2025

Disease	No. of Cases	No. of Deaths
Influenza	20	0
H1N1	4	0
TB	1132	85
Chickenpox	962	0
Measles	5	0
Covid-19	616	2
Pertussis	0	0
Mumps	545	0



Blood-Borne Disease

Disease	No. of Cases		No. of Deaths
AIDS	37		06
Hep- B	Screened 35714	254 positives	02
Hep- C	Screened 32726	188 positives	nil

Zoonotic Disease

Disease	No. of Cases	No. of Deaths
Rabies	5	5
Leptospirosis	159	10
Avian influenza human cases	0	0
West Nile	2	0
Anthrax	0	0
Nipah	0	0
Scrub Typhus	11	0

Among vector-borne diseases, dengue (299 cases) and malaria (55 cases) were reported, with no associated deaths. Water-borne diseases were relatively low, with Hepatitis A accounting for 82 cases and only sporadic cases of typhoid and amoebiasis. Air-borne diseases constituted a significant proportion of the disease burden, particularly tuberculosis (1132 cases with 85 deaths), chickenpox (962 cases), mumps (545 cases), and COVID-19 (616 cases with 2 deaths). Blood-borne infections included 37 AIDS cases with 6 deaths, while screening identified 254 Hepatitis B positives and 188 Hepatitis C positives. Among zoonotic diseases, leptospirosis (159 cases, 10 deaths) and rabies (5 deaths) were the major contributors to mortality, while sporadic cases of West Nile and scrub typhus were also reported. These trends highlight the need for continued surveillance, targeted preventive measures, and strengthened intersectoral coordination to effectively control communicable diseases in the district.

5. INSTITUTIONAL FRAMEWORK & RESPONSE COORDINATION

6.1 Mapping of existing plans and committees

Effective pandemic preparedness requires strong coordination mechanisms and clearly defined institutional structures. Mapping existing plans, committees, and coordination platforms helps ensure that roles and responsibilities are well defined and that response actions can be implemented efficiently during public health emergencies.

As part of strengthening district preparedness, existing disaster management and health response committees can be harmonised and integrated under a unified **District Pandemic Emergency Operations Centre (**EOC) structure.

6.2 Committee Harmonisation

a. Establishing District Pandemic Emergency Operations Centre (EOC) Structure

The **District Emergency Operations Centre (EOC)** serves as the central coordination hub for planning, monitoring, and responding to pandemic and public health emergencies. The EOC facilitates coordination between various departments, ensures efficient information flow, and supports timely decision-making during outbreak situations.

Key Functions of the District EOC

- 24×7 monitoring of the pandemic situation
- Coordination between government departments and field-level response units
- Information management and reporting to the State Emergency Operations Centre
- Resource mobilisation and logistical support for response activities
- Coordination of surveillance, containment, and public health interventions

Structure of the District Emergency Operations Centre (EOC)

Sl. No	EOC Position	Designated Officer	Key Functions
1	EOC Director	District Collector / District Magistrate	Overall command and supervision of pandemic response
2	EOC Operations Coordinator	District Disaster Management Officer	Coordination of field operations and response teams
3	Health Operations Lead	District Medical Officer	Surveillance, case reporting, treatment coordination
4	Surveillance & Data Management Officer	District Surveillance Officer along with District Surveillance Unit, District Programme Management Support unit (NHM) & PIED cells of the Medical Colleges under the Health Department	Data collection, case tracking, situation reports
5	Logistics & Supply Coordinator	Deputy Collector / RTO and District Supply officer/ Store Verification officer of the District under the District Medical Office, with representation from the Drug controller	Procurement and distribution of PPE, medicines, and equipment
6	Communication & Media Officer	District Information Officer & District Education & Media Officer	Public information, media briefing, risk communication
7	Law & Order Coordinator	Superintendent of Police Representative	Enforcement of containment zones and movement restrictions
8	Volunteer & Community Support Coordinator	Kudumbashree / NGO Representative	Volunteer mobilisation and community assistance
9	Essential Services Coordinator	Civil Supplies Department	Food distribution, essential commodity supply
10	Documentation & Reporting Officer	Planning Officer	Preparation of daily situation reports and documentation

b. Establishing District Pandemic Incident Command Structure (ICS)

The **Incident Command System (ICS)** provides a standardised management structure for coordinating multi-sectoral response during public health emergencies. It enables clear lines of authority, rapid decision-making, and efficient deployment of resources during pandemic situations.

At the district level, the ICS framework ensures effective coordination between administrative authorities, the health sector, disaster management agencies, law enforcement, and other essential service providers.

Operational Objectives of the Incident Command System

- Early detection and disease surveillance
- Rapid response and containment of outbreaks
- Continuity of essential public services
- Protection of vulnerable populations

District Pandemic Incident Command Structure

Level	Position / Authority	Designation in Pandemic ICS	Key Responsibilities
1	District Collector / District Magistrate	**Incident Commander**	Overall command, decision-making, coordination with the state government
2	District Medical Officer (DMO)	**Technical Advisor – Health**	Epidemiological guidance, surveillance strategy, clinical protocols
3	Additional District Magistrate / RDO	**Deputy Incident Commander**	Assists Incident Commander, coordinates interdepartmental operations
4	District Information Officer	**Public Information Officer**	Risk communication, media briefing, public advisories
5	District Police Chief / Superintendent of Police	**Safety & Security Officer**	Enforcement of containment measures, movement control
6	District Disaster Management Officer/Deputy Collector DM	**Liaison Officer**	Coordination with DDMA, NGOs, and external agencies

Functional Sections under the Incident Command System

Section	Section Chief	Major Functions
Operations Section	District Medical Officer / Health Department	Surveillance, case investigation, treatment, isolation facilities
Planning Section	District Planning Officer / Disaster Management Officer	Situation reports, forecasting, and resource planning
Logistics Section	Deputy Collector / Supply Officer	Medical supplies, PPE, equipment, transportation
Finance & Administration Section	District Treasury Officer / Finance Officer	Budget management, compensation, and expenditure tracking

c. Establishing Local Self-Government Disaster Management Committee (LDMC)

The Local Self-Government Disaster Management Committee (LDMC) plays a crucial role in implementing pandemic preparedness and response measures at the grassroots level. The committee functions as the local operational unit for coordinating surveillance, community engagement, and essential services during public health emergencies.

The LDMC ensures effective coordination between Local Self-Government Institutions (LSGs), the Health Department, district administration, and community organisations. It supports early detection, reporting of cases, implementation of containment measures, and provision of essential services to the community.

Structure of the LSG Disaster Management Committee (LDMC)

Sl. No	Position in LSG Disaster Management Committee (LDMC)	Designated Role in Pandemic Task Force	Functional Responsibility During Pandemic
1	LSG President / Municipal Chairperson / Panchayat President	Chairperson – Pandemic Task Force	Overall leadership, activation of local response mechanisms, and coordination with the District Disaster Management Authority (DDMA)
2	Vice President / Standing Committee Chair (Health)	Vice Chairperson	Oversight of response implementation, support to the Chairperson
3	Secretary, Local Self-Government Institution	Incident Coordinator	Administrative coordination, reporting to the District Administration and Health Department
4	Medical Officer (PHC/CHC/Taluk Hospital)	Technical Lead – Public Health	Clinical management, epidemiological surveillance, outbreak investigation
5	Health Inspector / Public Health Officer	Surveillance & Field Operations Lead	Disease surveillance, contact tracing, quarantine monitoring
6	Junior Health Inspector / Junior Public Health Nurse	Field Surveillance & Community Monitoring	Household surveillance, health education, and reporting suspected cases
7	ICDS Supervisor	Vulnerable Population Coordinator	Monitoring of pregnant women, children, and nutrition programs
8	Kudumbashree CDS Chairperson	Community Mobilisation Lead	Mobilisation of volunteers, support for home isolation families
9	Ward Members / Councillors	Ward-Level Pandemic Response Coordinators	Local monitoring, awareness generation, and community reporting
10	Police Station Representative	Enforcement & Security Coordinator	Enforcement of containment measures, crowd control

Sl. No	Position in LSG Disaster Management Committee (LDMC)	Designated Role in Pandemic Task Force	Functional Responsibility During Pandemic
11	Education Department Representative	Institutional Surveillance Coordinator	Monitoring schools and educational institutions
12	Veterinary Officer	Zoonotic Disease Monitoring Lead	Monitoring animal-related disease threats
13	Civil Supplies / Supply Officer	Essential Supply Chain Coordinator	Ensuring an uninterrupted supply of food and essential commodities
14	Water Authority / Sanitation Officer	WASH (Water, Sanitation & Hygiene) Coordinator	Ensuring safe water supply and sanitation measures
15	Social Welfare Officer	Social Protection Coordinator	Support for elderly, disabled, and vulnerable populations
16	NGO / Voluntary Organisation Representative	Volunteer Coordination Lead	Coordination of relief volunteers and community support services
17	Red Cross / NSS / NCC Representative	Emergency Support & Logistics	Assistance in awareness campaigns, relief distribution, and logistics

d. Sector-wise Roles and Responsibilities During Pandemic

Departmental Coordination Framework

Effective pandemic management requires multi-sectoral coordination across departments. The following framework outlines the major departments involved and their key responsibilities.

Sector	Lead Department	Key Roles & Responsibilities
Public Health & Medical Care	Health Department	Surveillance, testing, treatment, vaccination, outbreak investigation
Law Enforcement	Police Department	Enforcement of quarantine, lockdown measures, and crowd control
Local Self-Government	Panchayats / Municipalities	Community surveillance, sanitation, and awareness campaigns
Food & Essential Supplies	Civil Supplies Department	Ensure the supply of food, ration distribution, and price control
Water & Sanitation (WASH)	Water Authority / LSG	Safe drinking water, sanitation, and waste management
Education	Education Department	School closure protocols, health awareness among students

Social Welfare	Social Justice Department	Support for elderly, disabled, and vulnerable populations
Women & Child Welfare	ICDS Department	Monitoring pregnant women, child nutrition programs
Animal Husbandry	Veterinary Department	Surveillance of zoonotic diseases
Transport & Mobility	Transport Department	Regulation of public transport, movement restrictions
Information & Communication	Information & Public Relations Department	Public awareness campaigns, media communication
Volunteer & Community Support	NGOs / Red Cross / NSS / NCC	Volunteer mobilisation, relief support, and awareness activities
Disaster Management	District Disaster Management Authority	Overall coordination and monitoring of pandemic response

6.3 HEOC Integration and Health Signal Communication Flow

An effective Health Emergency Operations Centre (HEOC) requires a well-defined reporting and communication system to ensure that early warning signals from the community level are rapidly detected and escalated to district authorities.

The health signal communication flow establishes a structured pathway for reporting unusual health events, such as clusters of illness, unexplained deaths, or emerging zoonotic threats. This system links community-level surveillance with district-level emergency response mechanisms, ensuring timely detection and coordinated response to potential outbreaks.

The reporting mechanism begins at the community level, where residents, schools, institutions, and community-based surveillance volunteers identify unusual health events. These signals are transmitted through frontline health workers—such as ASHAs, JPHNs, and field staff—and local health institutions, eventually reaching the District Surveillance Unit (IDSP) and the District HEOC, where response actions are activated.

At each level, verification and preliminary assessment of the reported signal are carried out to filter true events from false alerts. Once validated, the HEOC coordinates interdepartmental response involving health services, local self-governments, animal husbandry, and other relevant sectors, depending on the nature of the threat.

The integration of HEOC with the existing Integrated Disease Surveillance Programme (IDSP) strengthens situational awareness, enables rapid risk assessment, and supports evidence-based decision-making. This structured communication flow ensures timely outbreak detection, efficient resource mobilisation, and effective implementation of control measures, thereby enhancing the district’s overall emergency preparedness and response capacity.

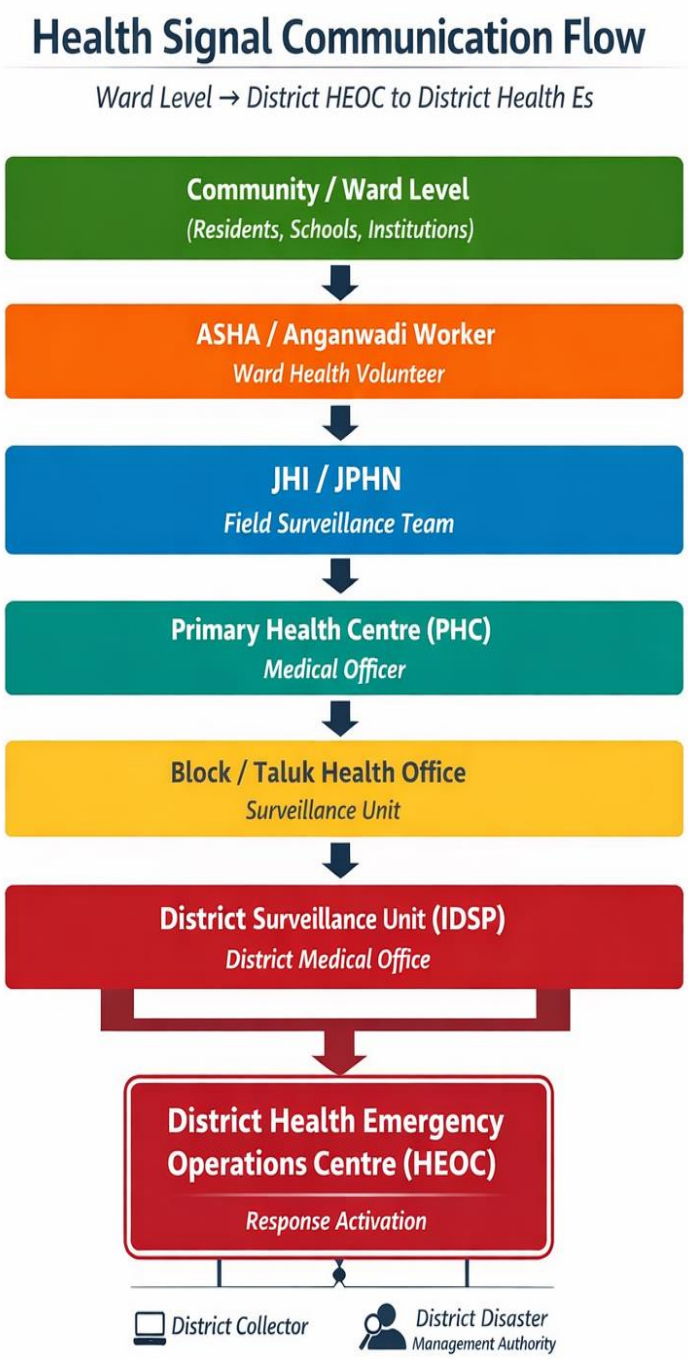


Figure 6.1: Health Signal Communication Flow from Ward Level to District Health Emergency Operations Centre (HEOC).

Health Signal Reporting and Escalation Mechanism

The health signal reporting and escalation mechanism ensures timely detection, verification, and response to potential public health threats within the district. By establishing clear roles and responsibilities at each level—from community volunteers and frontline health workers to block and district surveillance units—the system enables early identification of unusual health events and rapid information flow.

Level	Responsible Unit	Action
1. Signal Detection	Community members, schools, institutions/CBS volunteers	Report unusual illness clusters or deaths
2. Initial Field Reporting	ASHA / Anganwadi / Ward Health Volunteers	Notify JHI /JPHN/at JAK
3. Field Verification	Junior Health Inspector / Health staff	Conduct a preliminary investigation
4. Medical Reporting	PHC Medical Officer	Record cases and alert the block health authorities
5.Surveillance Reporting	Block Public Health Unit	Send report to District Surveillance Unit
6. District Analysis	District Surveillance Unit	Analyse trends and confirm alerts
7.Emergency Activation	District HEOC	Initiate Rapid Response Teams and containment

This structured reporting pathway strengthens disease surveillance, facilitates prompt field investigation, and supports evidence-based decision-making. In the event of confirmed alerts, the District Health Emergency Operations Centre (HEOC) coordinates response activities, including activation of Rapid Response Teams, resource mobilisation, and interdepartmental coordination to effectively contain and manage public health emergencies.

Key Principles of the Reporting System

1. Rapid Detection

Early signals from community-level workers such as ASHA, Anganwadi workers, and ward volunteers ensure quicker identification of potential outbreaks.

2. Structured Escalation

Information flows systematically from Community → PHC → Block / Taluk Health Office → District Surveillance Unit → HEOC, enabling efficient monitoring and decision-making.

3. Centralised Coordination

The District Health Emergency Operations Centre (HEOC) functions as the central coordination hub for analysing surveillance data and initiating response measures.

4. Integration with Disaster Management

The HEOC operates in close coordination with the District Disaster Management Authority (DDMA) during large outbreaks or public health emergencies.

As defined above, the reporting officers at each level for daily reporting to IDSP will be established and a list of COVID-19 protocols (e.g., dead body management, quarantine rules) that have been formally adopted and simplified for local language use. Wherever needed, Resource Sharing Agreements- Signed MOUs or documented protocols for sharing ambulances or equipment with neighbouring LSGs during a surge will also be explored.

Resource Sharing and Surge Preparedness

During large outbreaks or health emergencies, resource-sharing mechanisms will be activated to optimise available healthcare resources. These include:

- Resource Sharing Agreements (MoUs) with neighbouring Local Self-Government Institutions (LSGs)
- Sharing of ambulances, medical equipment, isolation facilities, and healthcare personnel
- Coordinated logistics support through district administration

Clinical Triage and Patient Referral Pathway

A structured clinical triage system ensures that patients receive appropriate care while preventing unnecessary burden on higher-level hospitals.

Patient Care Pathway

1. **Home Isolation**

   Mild cases are managed at home under monitoring by local health workers.

2. **Isolation / Intermediate Care Facilities**

   Establishment of Local Treatment Centres (LTC) or Step-Down LTCs (SLTC) for mild to moderate cases requiring monitoring.

3. **Referral-Based Escalation**

   Patients are referred to higher-level facilities only when symptoms worsen.

4. **Hospital-Based Care**

   Severe cases are referred to Taluk Hospitals, District Hospitals, or Medical Colleges for specialised treatment.

6.4 Patient Care Pathway During Pandemic

An organised patient care pathway is essential during a pandemic to ensure appropriate clinical management while preventing overcrowding of higher-level health facilities. The district adopts a tiered system of care, where patients are managed according to the severity of illness. Mild cases are managed through home isolation with community-level monitoring, while moderate and severe cases are referred to progressively higher levels of care, such as Local Treatment Centres (LTC), Step-Down LTCs (SLTC), secondary care facilities, and tertiary care hospitals.

This structured referral system ensures optimal use of healthcare resources, early detection of disease progression, and timely referral of critical patients to facilities equipped with advanced medical care.

a. Home Isolation (Mild Cases)

Home isolation is recommended for patients with mild symptoms who do not require hospitalisation. This strategy helps reduce the burden on healthcare facilities while ensuring that patients receive adequate monitoring and guidance.

Criteria	Description
Clinical condition	Mild symptoms such as fever, cough, or mild respiratory symptoms
Oxygen saturation	≥ 94% on room air
Comorbidities	No high-risk comorbid conditions
Home environment	An adequate isolation facility is available at home

Monitoring Mechanism

Patients under home isolation are monitored through community health workers and teleconsultation systems.

Monitoring Component	Details
Teleconsultation	Daily follow-up through phone or telemedicine consultation
Field supervision	Monitoring by ASHA workers, Junior Health Inspectors (JHI), or Junior Public Health Nurses (JPHN)
Self-monitoring	Patients track temperature, oxygen saturation, and symptoms.

Escalation Criteria

Patients under home isolation must be referred to the next level of care if any of the following symptoms develop:

- Persistent fever
- Oxygen saturation below 94%
- Breathlessness or respiratory difficulty
- Progressive worsening of symptoms

If symptoms worsen, the patient will be **referred to an isolation facility or Local Treatment Centre (LTC)** for further evaluation and management.

b. Isolation Facility / Local Treatment Centre (LTC) / Step-Down LTC (SLTC)

Isolation facilities such as LTCs and SLTCs function as intermediate care centres for patients who require clinical observation, testing, and supportive care but do not require intensive hospital treatment. These facilities help decongest hospitals while ensuring continuous clinical monitoring.

Functions of Isolation Facilities

Function	**Activity**
Clinical evaluation	Physical examination and triage of patients
Testing	Sample collection and diagnostic confirmation
Initial treatment	Symptomatic treatment and observation
Oxygen support	Basic oxygen therapy if required
Monitoring	Short-term observation of moderate cases

Possible Outcomes

Patients admitted to these facilities may follow one of the following pathways:

1. **Clinical improvement** – Patient may return to home isolation for continued recovery.
2. **Moderate illness** – Patient may continue admission and management in LTC/SLTC.
3. **Severe symptoms** – Patient will be referred to a **dedicated tertiary care facility** for advanced treatment.

c. LTC / SLTC / Secondary Care Facility

Secondary care facilities are responsible for the management of moderate cases requiring oxygen support and close medical supervision. These facilities provide enhanced clinical care compared to isolation centres and play an important role in stabilising patients before referral if necessary.

Role of Secondary Care Facilities

- Admission and management of moderate cases
- Administration of oxygen therapy
- Continuous clinical monitoring
- Conducting laboratory investigations
- Early detection of complications

Referral Criteria

Patients are referred to tertiary care hospitals if they develop severe clinical conditions such as:

- Severe respiratory distress
- Oxygen saturation below 90%
- Evidence of organ complications
- Requirement of intensive care or ventilatory support

Secondary care facilities function as an important intermediate level of care, ensuring timely management of moderate cases and facilitating appropriate referral to higher centres when required.

d. District Hospital (Tertiary Care)

The District Hospital serves as the primary tertiary care referral centre in Alappuzha District during a pandemic. It is equipped to manage severe and critical cases requiring specialised treatment and advanced life support.

Available Facilities

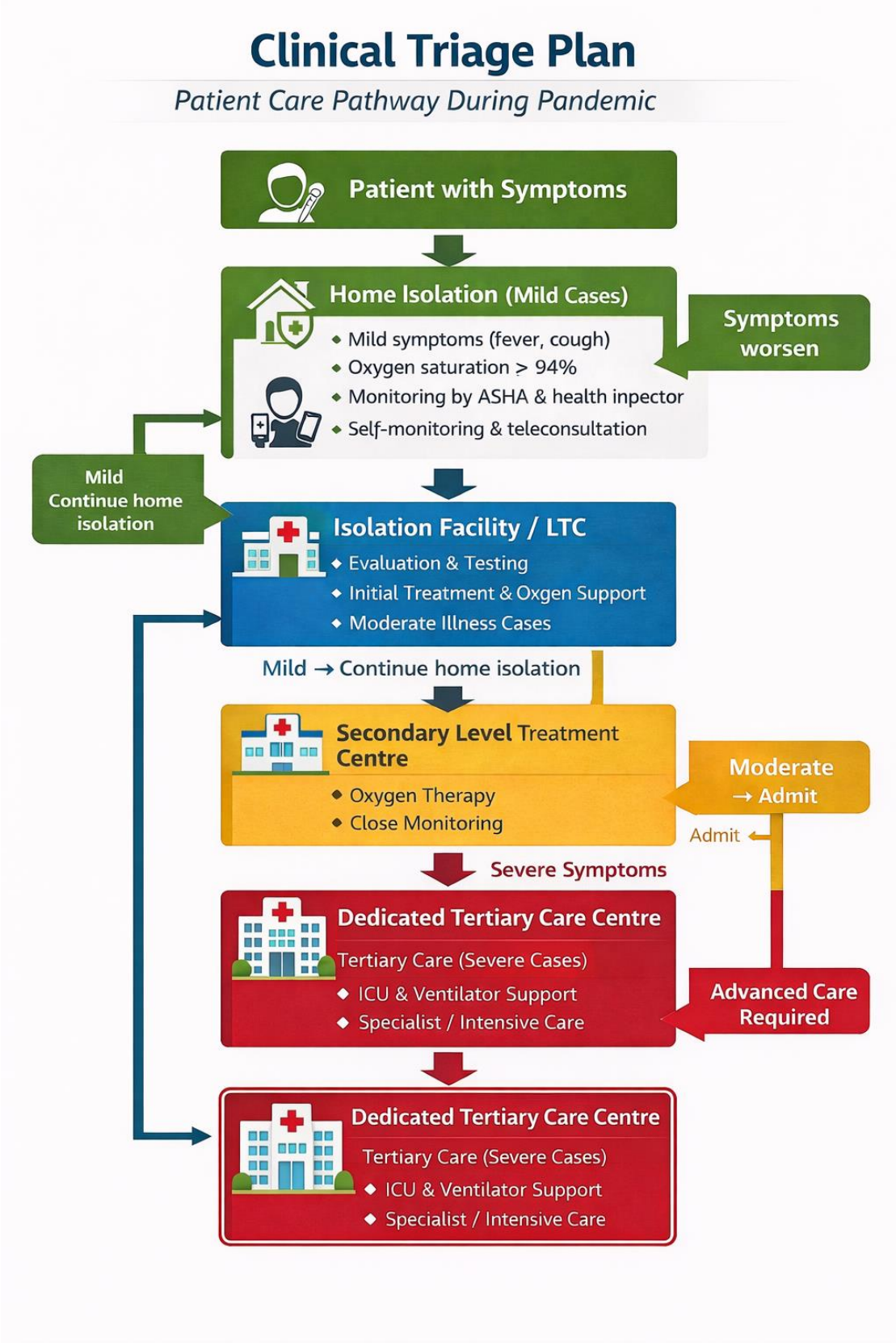
Facility	Description
Intensive Care Units (ICU)	Critical care management for severely ill patients

Facility	Description
Advanced oxygen therapy	High-flow oxygen systems and respiratory support
Ventilator support	Mechanical ventilation for critical respiratory failure
Specialist care	Multidisciplinary medical specialists

Functions of a Tertiary Care Facility

- Management of severe and critical cases
- Provision of advanced life-saving treatment
- Specialist consultation and multidisciplinary care
- Intensive monitoring and management of complications
- Coordination of referrals from secondary care facilities
- Referral to medical colleges or higher-level institutions when required

Thus, the district hospital plays a central role in providing advanced clinical care and ensuring effective management of critically ill patients during pandemic situations.


Clinical Triage Plan
Patient Care Pathway During Pandemic
Patient with Symptoms
Home Isolation (Mild Cases)
Mild symptoms (fever, cough)
Oxygen saturation > 94%
Monitoring by ASHA & health inpector
Self-monitoring & teleconsultation
Symptoms worsen
Mild
Continue home isolation
Isolation Facility / LTC
Evaluation & Testing
Initial Treatment & Oxgen Support
Moderate Illness Cases
Mild → Continue home isolation
Secondary Level Treatment Centre
Oxygen Therapy
Close Monitoring
Moderate → Admit
Admit
Severe Symptoms
Dedicated Tertiary Care Centre
Tertiary Care (Severe Cases)
ICU & Ventilator Support
Specialist / Intensive Care
Advanced Care Required
Dedicated Tertiary Care Centre
Tertiary Care (Severe Cases)
ICU & Ventilator Support
Specialist / Intensive Care

6.5 Oxygen and Life Support Preparedness

Adequate oxygen supply and life-support infrastructure are critical components of pandemic preparedness, particularly during respiratory disease outbreaks. The district maintains an Oxygen and Life Support Log, which includes a verified list of oxygen suppliers, refilling stations, and healthcare facilities with oxygen-supported beds within an operational radius of approximately 10 km. This system ensures rapid access to life-saving respiratory support during sudden increases in patient load.

The log is regularly updated and integrated into the District Health Emergency Operations Centre (HEOC) to facilitate efficient resource allocation, emergency logistics planning, and uninterrupted oxygen supply to healthcare facilities.

Operational Use in Pandemic Response Plan

To ensure uninterrupted oxygen availability during health emergencies, the following operational measures will be implemented:

- Maintain a daily oxygen stock register in all major hospitals.
- Ensure a buffer stock of oxygen sufficient for at least 48 hours of operation.
- Maintain an updated supplier and distributor contact list at the District Health Emergency Operations Centre (HEOC).
- Map and monitor transport routes for emergency oxygen delivery.
- Establish rapid communication mechanisms between hospitals, suppliers, and district administration for supply escalation.

a. Oxygen-Supported Bed Capacity (Major Facilities within ~10 km)

Sl. No	Hospital / Facility	Category	Oxygen-Supported Beds	ICU Beds with Oxygen	Ventilators	Remarks
1	Government Medical College Alappuzha	Tertiary Care Centre	~250+	~60+	~40+	Major referral hospital for the district
2	General Hospital Alappuzha	Secondary Care Hospital	~120+	~20	~10	Urban emergency facility
3	Isolation Ward Kalavoor	Isolation	10	Nil	Nil	LTC
4	Local Isolation / LTC Facilities	Pandemic isolation centres	~100+	Limited	Nil	Used for mild-moderate cases

These facilities collectively form the core oxygen-supported treatment network for pandemic management in the district. The identified facilities collectively ensure a functional and responsive oxygen-supported care network capable of managing both routine and surge requirements during public health emergencies. The presence of a tertiary care centre supported by secondary and isolation facilities enables a tiered approach to case management, ensuring optimal utilisation of resources and reducing the burden on higher-level institutions.

Continuous monitoring of bed occupancy, oxygen consumption, and equipment functionality is essential to maintain system readiness. Strengthening coordination between facilities and ensuring timely referral of severe cases further enhances the efficiency of the life-support system.

b. Rapid Oxygen Escalation Protocol

During periods of increased demand or supply disruption, the district will implement a Rapid Oxygen Escalation Protocol to ensure continuity of oxygen availability for patient care.

Situation	Action	Responsible Authority
Oxygen demand surge	Immediate refill request to suppliers	Hospital Superintendent
Cylinder shortage	District stock redistribution Converting Industrial cylinders Enforcement for preventing artificial stockout	District Administration/ District Medical Officer
PSA activation	Oxygen generation systems functionality	Hospital Superintendent
Liquid oxygen shortage	Emergency requisition	District Collector
Severe supply disruption	State-level oxygen allocation	Government of Kerala

The Rapid Oxygen Escalation Protocol provides a structured and time-sensitive response framework to manage sudden increases in oxygen demand and potential supply disruptions. By clearly defining roles and responsibilities at each level, the protocol enables swift decision-making and minimizes delays in critical situations. Effective implementation of this protocol relies on real-time monitoring of oxygen consumption, proactive communication between stakeholders, and regular updating of supply chain information. Strengthening coordination between district and state authorities further ensures that additional resources can be mobilised promptly during severe shortages.

Periodic review and simulation exercises of the escalation protocol are essential to identify gaps and enhance system readiness, thereby ensuring uninterrupted oxygen availability and improved patient outcomes during public health emergencies.

c. Oxygen & Life Support Log

(Within ~10 km operational radius for pandemic response)

To ensure an uninterrupted oxygen supply during pandemic emergencies, the district maintains an updated log of nearby oxygen suppliers, equipment dealers, and emergency support services.

Sl. No	Facility / Supplier Name	Type	Location	Distance (Approx.)	Key Resources Available
1	Karimpanackal Enterprises	Medical Oxygen Supplier	Central Travancore supply network	~20–30 km supply network	Liquid medical oxygen, oxygen cylinders, nitrous oxide
2	Southern Surgical / Medical Gas Dealers	Oxygen cylinder distributor	Alappuzha town	~5–8 km	Cylinder supply and refill services
3	Trauma Care Oxygen & Ambulance	Oxygen cylinder service	Alappuzha	~5–7 km	Oxygen cylinders, emergency ambulance support
4	Imperial Medex / Medical Equipment Dealers	Oxygen concentrator supplier	Alappuzha	~6–9 km	Oxygen concentrators, hospital equipment
5	AALA Chengannur Medical Supplier	Medical equipment supplier	Chengannur	~10 km	Oxygen concentrators, BiPAP, CPAP, hospital equipment

These suppliers form an important part of the district's emergency oxygen logistics network, ensuring continuous availability of oxygen cylinders, concentrators, and respiratory support equipment.

Map: Oxygen Suppliers and Refilling Units – Alappuzha District

An operational logistics map has been prepared to visualise the geographical distribution of oxygen suppliers and medical gas distributors supporting healthcare facilities in the district.

Key Locations Included in the Map

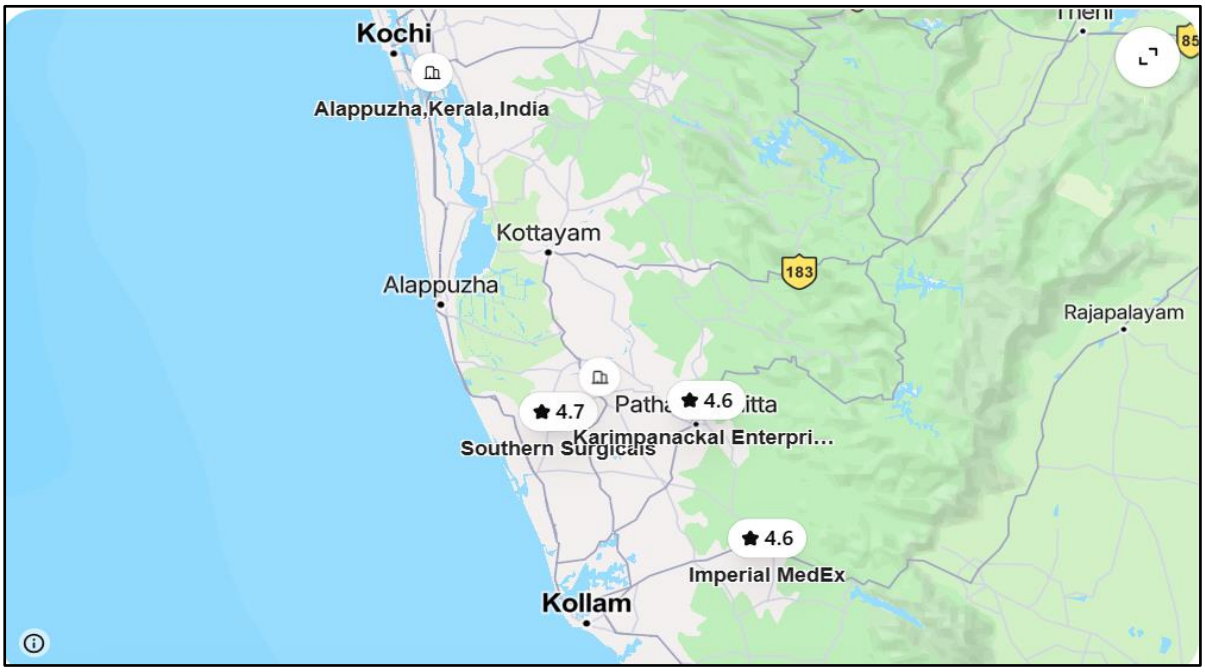
Southern Surgical – Medical equipment and oxygen cylinder supply service located in Alappuzha town.

Trauma Care Oxygen & Ambulance Service – Provides oxygen cylinders and emergency transport support.

Imperial Medex – Supplier of oxygen concentrators and medical equipment.

AALA Chengannur Medical Supplier – Distributor of oxygen concentrators and respiratory support equipment.

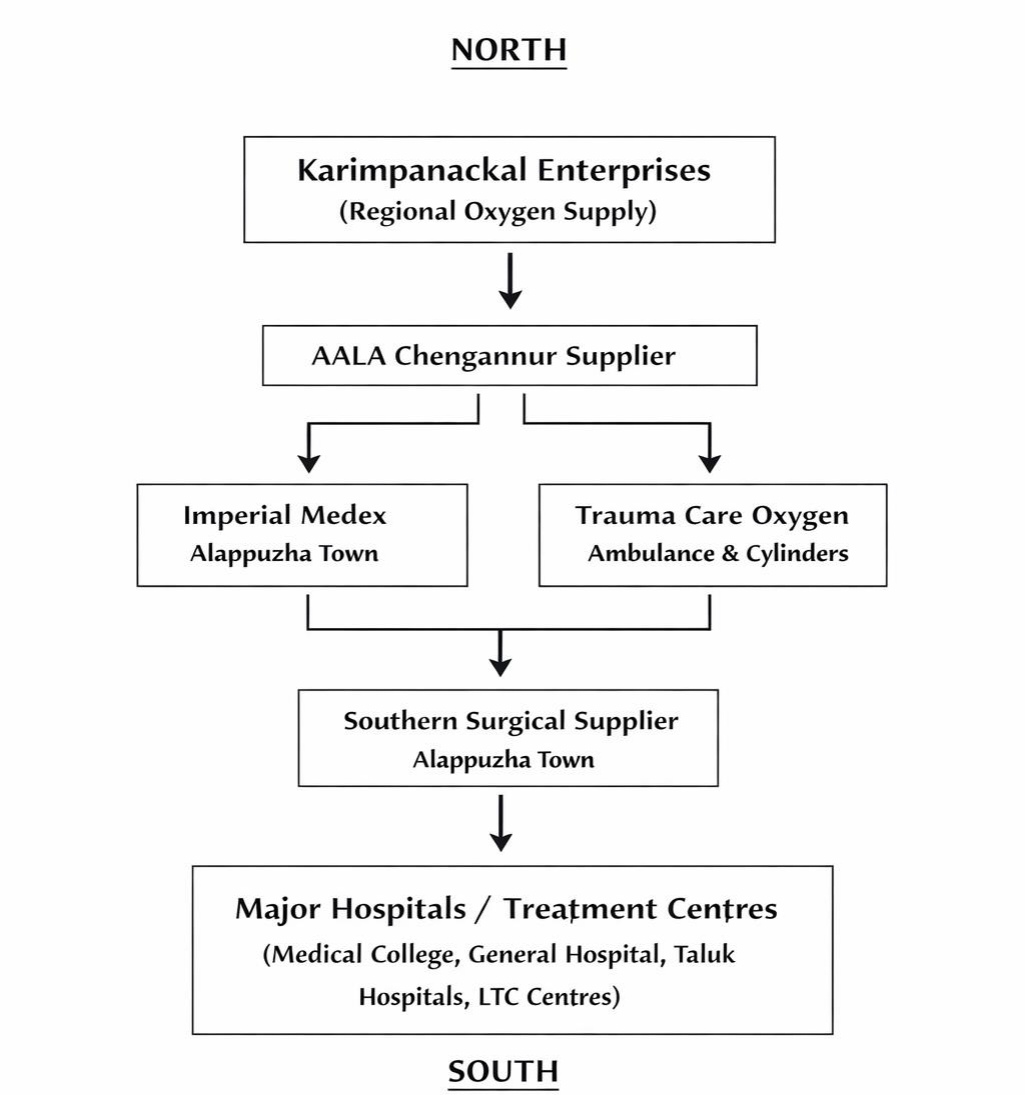
Karimpanackal Enterprises – Major regional distributor supplying medical oxygen to hospitals in Alappuzha and neighbouring districts.



d. Conceptual Logistics Map for Oxygen Supply During Pandemic

The conceptual logistics network illustrates the supply flow of oxygen resources from regional distributors to district hospitals and treatment centres.

Conceptual Logistics Map (Pandemic Plan)



6.6 Laboratory Logistics and Sample Transport System

An efficient laboratory logistics system is essential for timely diagnosis, disease surveillance, and outbreak response during a pandemic. The district laboratory logistics plan establishes a structured mechanism for sample collection, transportation, testing, and reporting through coordination between health facilities, laboratories, and the Integrated Disease Surveillance Programme (IDSP).

The system ensures daily sample collection schedules, cold-chain maintenance, and clear communication channels between collection centres and designated laboratories. This integrated approach helps reduce testing delays and supports rapid public health decision-making.

Key objectives of the laboratory logistics system include:

1. Ensuring daily sample collection and transport schedules
2. Maintaining cold-chain integrity for biological samples
3. Establishing clear contact points for laboratories and courier services
4. Integrating laboratory reporting with the Integrated Disease Surveillance Programme (IDSP)

Laboratory Logistics Plan

A robust laboratory logistics system is essential for the timely detection, diagnosis, and surveillance of infectious diseases during a pandemic. Efficient coordination between sample collection centres, transport systems, and designated laboratories ensures that suspected cases are identified quickly and that public health responses can be implemented without delay.

In Alappuzha district, the laboratory logistics framework integrates Primary Health Centres, Taluk Hospitals, private healthcare facilities, and community testing units with designated district and national reference laboratories. The system also ensures safe sample handling, cold-chain maintenance, and structured reporting through the Integrated Disease Surveillance Programme (IDSP).

Sample Collection and Transport System

The district has established a structured system for sample collection and transportation from various health facilities to designated laboratories. The following table outlines the key collection points, responsible personnel, and transport arrangements.

Sl. No	Collection Point	Responsible Officer	Sample Collection Time	Transport Mode	Destination Laboratory	Courier / Transport Contact

1	Primary Health Centres (PHCs)	Medical Officer / JHI	9:00 AM – 11:00 AM	Cold-chain sample transport box	District Public Health Laboratory, Alappuzha	District Surveillance Vehicle
2	Taluk Hospitals	Microbiologist / Lab Technician	9:00 AM – 12:00 PM	Dedicated medical courier	Government Medical College Laboratory	District Health Courier
3	Private Hospitals	Hospital Lab Technician	10:00 AM – 12:00 PM	Approved courier service	District Public Health Laboratory	Authorised diagnostic courier
4	Fever Clinics / Mobile Units	Rapid Response Team	8:00 AM – 10:00 AM	Ambulance / Health Department vehicle	Medical College Laboratory	Emergency transport service
5	Community Testing Camps	Field Health Staff	8:00 AM – 11:00 AM	Insulated sample transport kit	Designated testing laboratory	District Health Logistics Unit

Designated Testing Laboratories

To ensure adequate diagnostic capacity during pandemic situations, the district utilises a network of government laboratories and national reference laboratories for confirmatory testing.

Laboratory Name	Category	Location	Contact	Remarks
Government Medical College Laboratory	RT-PCR / Molecular testing	Vandanam, Alappuzha	District Lab Control Room	Major district testing facility
District Public Health Laboratory	Public health surveillance lab	Alappuzha	District Medical Office	Handles surveillance samples

National Institute of Virology	National reference laboratory	Pune	Central referral contact	Used for confirmatory testing if required

Sample Transport Protocol

Standard biosafety procedures are followed for the safe handling, packaging, and transport of clinical specimens. The following protocol ensures sample integrity and the safety of health personnel during transportation.

Step	Action	Responsible Authority
1	Sample collection using PPE and viral transport medium	Health staff/lab technician
2	Proper labelling and barcode registration	Sample collection centre
3	Packing in a triple-layer biohazard transport system	Laboratory technician
4	Transport in a cold-chain box (2–8°C)	District courier vehicle
5	Receipt and logging at the testing laboratory	Laboratory supervisor

Emergency Sample Transport Arrangement

During surge situations or unexpected increases in testing demand, additional transport mechanisms may be activated to ensure the timely delivery of samples to testing laboratories.

The district health system maintains contingency arrangements to ensure that samples collected from different health facilities reach designated laboratories without interruption. These arrangements include the deployment of additional transport vehicles, emergency courier services, and coordination with nearby laboratories when testing capacity is exceeded.

The following mechanisms are activated during emergencies to maintain uninterrupted laboratory logistics:

Scenario	Action	Responsible Unit
High sample volume	Deploy additional district vehicles	District Health Office
Urgent testing required	Direct transport to the Medical College lab	Rapid Response Team

Night sample collection	Use an emergency ambulance courier	District Control Room
Lab overload	Divert samples to nearby district labs	State Health Department

Cold Chain & Specimen Transport Equipment Inventory

The district maintains an inventory of equipment required for safe packaging, storage, and transportation of samples. These resources are distributed across health facilities and laboratories to support routine surveillance as well as large-scale testing during public health emergencies. Proper management of these resources also ensures compliance with biosafety standards and supports efficient laboratory operations.

Sl. No	Equipment	Quantity Available	Location	Responsible Officer	Purpose
1	Viral Transport Medium (VTM) Kits	5,000 kits	District Medical Store	District Medical Officer	Safe collection and preservation of clinical samples
2	Triple-layer Biohazard Transport Boxes	120	PHCs & Taluk Hospitals	Lab Technician / JHI	Secure specimen packaging
3	Ice-pack Cold Boxes	150	District Health Office	Cold Chain Technician	Maintaining 2–8°C during transport
4	Vaccine / Specimen Carriers	90	Primary Health Centres	Medical Officer	Sample transport from field units
5	Deep Freezers (−20°C)	2	District Public Health Laboratory	Microbiologist	Storage of specimens
6	Ultra-Low Freezers (−80°C)	2	Government Medical College Laboratory	Lab In-charge	Long-term specimen storage
7	Temperature Monitoring Devices	60	All testing facilities	Lab Supervisor	Cold chain monitoring

8	Dedicated Sample Transport Vehicles	1	District Surveillance Unit	Transport Officer	Daily sample transport

District Laboratory Testing Capacity

Laboratory testing capacity in the district is supported by government laboratories as well as approved private diagnostic centres, ensuring adequate testing coverage during routine surveillance and outbreak situations.

Sl. No	Laboratory	Type of Testing	Number of PCR Machines	Maximum Daily Testing Capacity	Technical Staff	Remarks
1	Government Medical College Laboratory	RAT	NIL	~1,500 samples/day	Microbiologists, Lab Technicians	Major district referral laboratory
2	District Public Health Laboratory	RAT	NIL	~500 samples/day	Public health lab staff	Used for routine surveillance
3	Private Diagnostic Labs (District-approved)	RT-PCR / Antigen testing	3–4	~600 samples/day	Private lab technicians	Surge testing capacity
4	Referral Laboratory	NIV	High-capacity PCR	Variable	Scientists	Used for confirmatory testing

The district's laboratory network provides a balanced mix of rapid screening and confirmatory testing capacity, enabling timely detection and response to infectious disease outbreaks. Government laboratories serve as the backbone for routine surveillance and public health investigations, while private laboratories augment testing capacity during surge situations.

Key Operational Guidelines

To maintain efficiency in the laboratory logistics system, certain operational procedures are followed regularly by responsible units.

Activity	Responsible Unit	Frequency
Sample transport monitoring	District Surveillance Unit	Daily
Cold chain temperature logging	Laboratory staff	Every transport cycle
Testing capacity review	District Medical Office	Weekly
Surge testing activation	District Health Emergency Operations Centre	During outbreak

Mapping of Private Diagnostic Laboratories

Private diagnostic laboratories play an important role in strengthening the district's laboratory testing capacity during pandemic situations. In addition to government laboratories, these facilities support sample collection, diagnostic testing, and surge capacity when the number of suspected cases increases.

The following laboratories across Alappuzha district provide diagnostic services that can support pandemic surveillance and laboratory testing.

Sl. No	Laboratory Name	Location	Key Services	Emergency Role	Contact / Remarks
1	DDRC Agilus Diagnostics	Across district	Pathology tests, molecular diagnostics, and imaging services	Sample collection and laboratory testing support	24-hour service with home sample collection options
2	Health Park Diagnostic Centre	Alappuzha town	Clinical laboratory testing, imaging	Surge diagnostic capacity	Supports RT-PCR / molecular testing referrals
3	Medivision Diagnostic Centre	Regional network (nearby districts)	RT-PCR and advanced diagnostic testing	Referral testing during the surge	Used for specialised molecular tests
4	Neuberg Diagnostics	Regional laboratory network	Molecular and infectious disease testing	Confirmatory testing support	Regional referral laboratory
5	Private hospital laboratories	Across district	Routine pathology and antigen testing	Community-level screening support	Used for decentralised testing
6	Sankar's lab	Across district	RT PCR/RAT	Surge diagnostic capacity	Supports RT-PCR / molecular testing referrals

Key Private Diagnostic Labs

The facilities listed below are strategically located across the district to ensure that sample collection and diagnostic testing remain accessible even in remote coastal or waterlogged areas of Alappuzha.

1. **Metropolis Healthcare Laboratory – Vandanam**

   Location: Near Government Medical College Hospital, Vandanam

   Services: Clinical pathology, microbiology, molecular diagnostics

   Role in pandemic: RT-PCR testing support, confirmatory diagnostics.

2. **DDRC SRL Diagnostics – Kayamkulam**

   National diagnostic network

   Supports molecular and biochemical testing

   Previously included in the Kerala private COVID testing lab list.

3. **Aster Labs – Kayamkulam**

   Offers advanced laboratory services, including microbiology and pathology testing.

4. **Care Labs & Diagnostic Centre – Thuravoor**

   Address: Ponpuram Juma Masjid Building, Parayakadu PO

   Phone: +91 95445 87779

   Role: Routine diagnostics and sample collection centre.

5. **Care Labs & Diagnostic Centre – Perumbalam**

   Address: Market Jetty, Perumbalam PO

   Provides pathology testing and blood sample processing.

6. **Pelican Biotech & Chemical Labs**

   Location: Mc John Estate, Kuthia Road

   Speciality: Laboratory testing and chemical analysis.

Suppliers for Laboratory Consumables (Regional Supply Network)

Reliable supply of laboratory reagents, diagnostic kits, and consumables is essential for maintaining testing capacity during pandemics. The district may procure these materials through national and regional laboratory supply companies.

Major Suppliers (Kerala Region)

- **HiMedia Laboratories Pvt. Ltd.**

  Supplies culture media, RT-PCR reagents, and diagnostic kits.

- **Merck Life Science**

  Supplies molecular biology reagents, chemicals, and laboratory consumables.

- **Thermo Fisher Scientific**

  Supplies PCR kits, RNA extraction kits, and testing equipment.

- **Tarsons Products Limited**

  Supplies laboratory plastics such as centrifuge tubes, pipette tips, and cryovials.

- **Transasia Bio-Medical Ltd.**

  Supplies haematology analysers and diagnostic reagents.

Typical Laboratory Consumables Required During a Pandemic

The following consumables are commonly required for large-scale diagnostic testing and infection control during pandemic situations.

Category	Examples
Sample collection	Viral transport media (VTM), swabs
Molecular testing	PCR kits, RNA extraction kits
Lab plastics	Pipette tips, microcentrifuge tubes
PPE	N95 masks, gloves, gowns
Disinfection	Alcohol swabs, disinfectant solutions

Supply Chain Buffer: 30-Day Minimum Stock Level (MSL)

Maintaining adequate stocks of essential medicines, personal protective equipment (PPE), and infection-control supplies is critical for ensuring uninterrupted healthcare services during pandemic situations. Sudden increases in patient load can place significant pressure on health facility inventories, making advance planning of medical supplies essential.

To address this, a 30-day Minimum Stock Level (MSL) will be maintained at district health facilities. This buffer stock will support continuous treatment of patients, protect healthcare

workers, and ensure that essential medical supplies remain available during periods of increased demand or supply chain disruptions.

Objectives

The key objectives of maintaining a 30-day buffer stock include:

- Prevent stock-outs during a sudden surge in cases.
- Maintain continuous treatment capacity at hospitals and primary health centres.
- Allow sufficient time for procurement and resupply.

Recommended 30-Day Minimum Stock List

Category	Item	Minimum Stock Level (30 days)	Storage Point
Essential Medicines	Paracetamol tablets	10,000 tablets	District Medical Store
	Antibiotics (Amoxicillin/Azithromycin)	5,000 courses	District Store & Hospitals
	IV Fluids (Normal saline / RL)	2,000 units	District Hospital
	Antipyretic syrups	500 bottles	PHCs
PPE	N95 masks	5,000 units	Central PPE Store
	Surgical masks	20,000 units	Hospitals & PHCs
	Disposable gloves	50,000 pairs	All facilities
	PPE kits	1,500 units	Isolation wards
Infection Control	Hand sanitizers	1,000 bottles	Hospitals
	Surface disinfectant (1% sodium hypochlorite)	500 litres	Hospitals
	Alcohol swabs	20,000 units	Labs & Wards

Supply Monitoring Mechanism

Regular monitoring of stock levels is necessary to ensure that the minimum stock level is maintained across all healthcare facilities. The district health administration will implement a structured monitoring system to track inventory and identify potential shortages in advance.

The monitoring system will include the following measures:

1. Monthly stock audit at all health facilities.
2. Weekly reporting during outbreaks.

3. Buffer stock stored at:
    - District Medical Store
    - District Hospital pharmacy
    - Selected block PHCs.

Replenishment Strategy

A structured replenishment mechanism is necessary to ensure that stock levels remain above the minimum threshold. Procurement and resupply will be coordinated through established government supply chains.

- Procurement will primarily be carried out through the **Kerala Medical Services Corporation Limited (KMSCL)** centralised supply system.
- Emergency procurement may be authorised by the **District Medical Officer (DMO)** if stock levels fall below the 15-day threshold.
- In case of a sudden surge in demand, additional supplies may be sourced from approved private suppliers.

Stock Monitoring Dashboard (Recommended)

To improve supply chain efficiency, the district may utilise a digital inventory monitoring system for tracking medical supplies. A digital platform will help health authorities monitor stock levels in real time and facilitate the timely replenishment of essential items.

Recommended features include:

- Real-time monitoring of stock levels at health facilities
- Automatic alerts when stock levels fall below the Minimum Stock Level
- Facility-wise reporting and centralised monitoring

Possible platforms include:

- eHealth Kerala Hospital Information System
- District supply chain monitoring dashboard

Integrated Supply Chain Management Mechanism

An integrated supply chain management mechanism will be established to ensure real-time tracking and efficient distribution of essential supplies across all health facilities. Digital inventory systems and standardized reporting formats will be used to monitor stock levels, consumption patterns, and expiry dates at regular intervals.

30-Day Minimum Stock Buffer System

Preparedness for Pandemic Surge

- **Minimum Stock Levels** (MSL) maintained at:
  - District Medical Store
  - District Hospital
  - PHCs

District Medical Store | **District Hospital** | Primary Health Centres

Key Supplies Covered:

Essential Medicines

Tablets
- Paracetamol 10,000
- Antibiotics (Amoxicillin / Azithronycin) 5,000 courses

IV Fluids
- Normal saline 2,000
- RL (Ringer's lactate) 2,000 units

Personal Protective Equipment (PPE)

- **N95 Masks** : 5,000 units
- **Surgical Masks** : 20,000 units
- **Gloves** 50,000 pairs

Infection Control Supplies

- **Hand Sanitizers** : 1,000 units (500ml bottles)
- **Surface Disinfectant** 500 liters (1% sodium hyphoclorite)
- **Alcohol Swabs** 20,000 units

Supply Monitoring Requirements

1. **Weekly Reporting** Stock levels updated weekly in *eHealth* Kerala system.
2. **15-Day Replenishment Threshold** Emergency procurement initiated if stock falls below 15-day level
3. **District Medical Officer** (DMO) **Oversight** Reviews weekly stock report
4. **Central Procurement Coordination** Replenishment via Kerala *Medical* Services Corporation Ltd.

VERIFY: ENSURE **30-DAY MINIMUM STOCK LEVELS**

6.7 Industrial Support Network for Emergency Production of PPE, Sanitisers, and Medical Supplies

Industrial establishments play an important role in supporting the healthcare system during public health emergencies. During pandemics, industries can contribute by manufacturing or supplying essential infection-control products such as hand sanitisers, personal protective equipment (PPE), masks, and disinfectants. Collaboration between the health sector and industrial units ensures the uninterrupted availability of critical protective supplies for healthcare workers and the general public.

The following industrial establishments and suppliers are identified as potential sources for the supply of sanitisers, PPE kits, and related infection-control materials during emergency situations.

Industrial Establishments for Supplying Hand Sanitiser & PPE

Sl. No	Industry / Company	Location	Products Supplied	Role During Pandemic	Remarks
1	Kerala State Drugs and Pharmaceuticals Ltd.	Kalavoor, Alappuzha	Alcohol-based hand sanitisers, medicines	Government pharmaceutical manufacturing unit supplying hospitals	Produces WHO-recommended sanitiser formulations
2	Kitex Garments Ltd.	Kizhakkambalam, Kochi	PPE kits, protective garments	Large-scale PPE manufacturing during the pandemic	Supplied PPE kits to the healthcare sector
3	Safelyne Solutions India Pvt. Ltd.	Thiruvananthapuram	PPE kits, face shields, masks, safety equipment	Industrial safety and PPE supplier	Supplies multiple protective products
4	AKM Surgical Co.	Kozhikode	Sanitisers, N95 masks, PPE kits, gloves	Distributor of infection-control equipment	Supplies hospitals and medical institutions
5	Josco Ventures LLP	Kozhikode	Sanitisers, PPE kits, masks, disinfectants	Industrial manufacturer and distributor	Supplies hygiene and COVID-care products

Additional Industrial Support Network

In addition to the identified establishments, several industrial sectors within the state have the capacity to support pandemic response by producing essential medical and hygiene supplies. These industries can quickly adapt their production lines to manufacture items such as PPE kits, sanitisers, masks, and other infection-control materials during emergency situations.

Sector	Examples	Role
Pharmaceutical industries	KSDP, regional pharma companies	Production of sanitisers and medicines
Garment manufacturing units	PPE coverall production	Rapid conversion to PPE manufacturing during outbreaks
Chemical industries	Alcohol-based sanitiser manufacturing	Bulk sanitiser supply
Safety equipment suppliers	PPE distributors	Supply masks, gloves, shields

The integration of these industrial sectors forms a vital backbone for the district's material resilience. By maintaining an updated database of these establishments, the healthcare system can shift from a state of reliance on external global supply chains to a localized, self-sustaining model during periods of high demand.

a. Local Industrial Conversion Plan

Emergency Manufacturing Support During Pandemic

During severe outbreaks, existing industrial units may be requested to temporarily convert their manufacturing capacity to produce essential medical supplies. This strategy helps the district rapidly scale up production and reduce dependence on external supply chains. The following industries have the potential to support emergency manufacturing through production conversion.

Sl. No	Industry Type	Example Establishment	Possible Converted Production	Estimated Production Capacity	Responsible Coordination Agency
1	Pharmaceutical Manufacturing	Kerala State Drugs and Pharmaceuticals Ltd.	Alcohol-based hand sanitisers, disinfectants	5,000–10,000 bottles/day	District Health Department
2	Garment / Textile Manufacturing	Kitex Garments Ltd.	PPE kits, isolation gowns, masks	2,000–5,000 PPE kits/day	District Industries Centre
3	Chemical / Distillery Units	Local chemical industries	Sanitiser base (ethanol), disinfectant solutions	2,000 litres/day	Excise Department & Health Dept
4	Plastic Manufacturing Units	Local plastic fabrication units	Face shields, testing kit containers	1,000–2,000 units/day	District Industries Centre
5	Medical Equipment Suppliers	Regional distributors	Oxygen concentrators, medical devices	Variable supply	Health Department
6	Printing / Packaging Units	Local packaging industries	Packaging for medical supplies	5,000 units/day	District Supply Chain Unit

b. Activation Mechanism

To ensure the timely mobilisation of industrial resources during emergencies, a phased activation mechanism will be followed. This mechanism outlines the actions to be taken at different stages of pandemic preparedness and response.

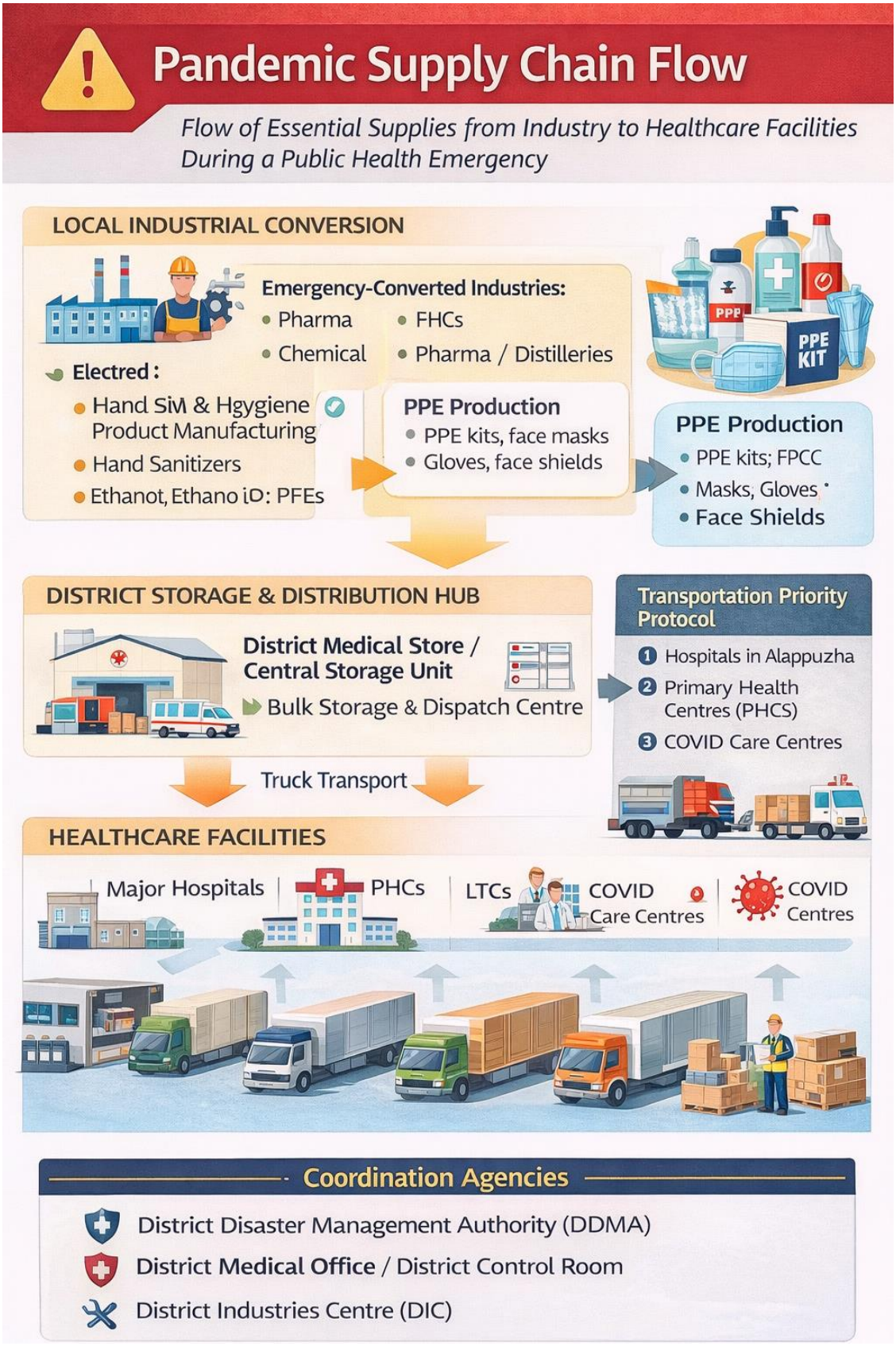
Stage	Action	Responsible Authority
Preparedness Stage	Identify industries capable of production conversion	District Industries Centre
Alert Stage	Issue an advisory to industries for emergency readiness	District Collector
Outbreak Stage	Activate emergency manufacturing orders	District Disaster Management Authority

Stage	Action	Responsible Authority
Recovery Stage	Gradual return to normal industrial production	Industry Department

c. Industrial Support Coordination Structure

Effective coordination between government agencies and industrial units is essential to ensure the timely production, procurement, and distribution of medical supplies. The following agencies will coordinate industrial support activities during pandemic situations.

Agency	Role
District Industries Centre	Identify industrial capacity and coordinate production
District Disaster Management Authority	Authorise emergency production
Health Department	Define product standards and demand.
Kerala Medical Services Corporation Limited	Procurement and distribution of supplies


Pandemic Supply Chain Flow
Flow of Essential Supplies from Industry to Healthcare Facilities During a Public Health Emergency
LOCAL INDUSTRIAL CONVERSION
Emergency-Converted Industries:
Pharma
FHCs
Chemical
Pharma / Distilleries
Electred :
Hand SiM & Hgygiene Product Manufacturing
Hand Sanitizers
Ethanot, Ethano iD: PFEs
PPE Production
PPE kits, face masks
Gloves, face shields
PPE KIT
PPE Production
PPE kits; FPCC
Masks, Gloves
Face Shields
DISTRICT STORAGE & DISTRIBUTION HUB
District Medical Store / Central Storage Unit
Bulk Storage & Dispatch Centre
Truck Transport
Transportation Priority Protocol
1 Hospitals in Alappuzha
2 Primary Health Centres (PHCS)
3 COVID Care Centres
HEALTHCARE FACILITIES
Major Hospitals
PHCs
LTCs
COVID Care Centres
COVID Centres
Coordination Agencies
District Disaster Management Authority (DDMA)
District Medical Office / District Control Room
District Industries Centre (DIC)

6.8 Volunteer Force and District Resource Inventory for Pandemic Management

Community participation plays a crucial role in effective pandemic preparedness and response. In addition to formal healthcare workers, a wide range of community volunteers, government departments, and local institutions can contribute to emergency response activities. Maintaining a structured inventory of available resources helps the district administration rapidly mobilise personnel and infrastructure when required.

A **registered database of trained volunteers** will be maintained, including members from Kudumbashree, Arogya Sena, NSS, NCC, and other community organisations. Volunteers will be categorised based on their skills, such as nursing assistance, food preparation, logistics support, data management, and driving. This classification will enable efficient deployment during emergencies.

a. District Resource Inventory for Pandemic Management

The following table outlines the key human resources, institutional support systems, and infrastructure available within the district that can support pandemic response activities.

Resource Category	Resource Type	Estimated Availability	Responsible Department
Health Workforce	Doctors, Nurses, Paramedical Staff	District Hospitals, Taluk Hospitals, PHCs	Health Department
	Health Inspectors / Junior Health Inspectors	Field surveillance teams	Health Department
Community Health Volunteers	ASHA Workers	Community health outreach	National Health Mission
	Anganwadi Workers	Maternal & child health monitoring	ICDS Department
Community Support Groups	Kudumbashree Workers	Large community network	Local Self-Government Department
	SHGs / Ayalkoottams	Local volunteer network	Kudumbashree Mission
Youth & Volunteer Forces	NSS Volunteers	Educational institutions	Higher Education Department
	NCC Cadets	Schools and colleges	Defence / Education
	Red Cross Volunteers	Emergency support	Red Cross Society

Resource Category	Resource Type	Estimated Availability	Responsible Department
Government Institutions	Hospitals & Health Centres	District & Taluk level	Health Department
	Educational Institutions	Schools and colleges for awareness/quarantine facilities	Education Department
Infrastructure Resources	Ambulances	Emergency transport	Health Department
	Community Halls / Schools	Temporary isolation/ relief centres	LSGs
Essential Services	PDS Ration Shops	Food supply network	Civil Supplies Department
	Water Supply Systems	Safe drinking water	Water Authority / LSG
Security & Emergency Services	Police Stations	Law enforcement	Police Department
	Fire & Rescue Stations	Emergency response	Fire & Rescue Services

b. Volunteer Force Registry

Trained Community Volunteers for Pandemic Response

Community-based volunteer networks significantly strengthen the district's response capacity during health emergencies. These volunteers provide support in areas such as patient care assistance, logistics, food distribution, data management, and community outreach.

The following volunteer groups have been identified as key partners in pandemic response activities.

Sl. No	Volunteer Category	Organization	Key Skills	Estimated Number Available	Deployment Role
1	Community Health Volunteers	Kudumbashree Mission	Community outreach, food preparation, and distribution of essential supplies	500+	Support quarantine centres and community kitchens
2	Health Support Volunteers	Arogya Sena	Basic nursing care, patient support, and health awareness	150+	Assist hospitals and isolation centres
3	Disaster Response Volunteers	National Disaster Response Force trained community volunteers	Emergency rescue, logistics support, crowd management	50+	Support emergency operations and logistics
4	Data Management Volunteers	NSS / youth volunteers	Data entry, surveillance reporting, helpline operations	100+	Assist District Control Room
5	Transport Volunteers	Local drivers' associations	Driving ambulances, supply transport	80+	Medical transport and supply chain logistics
6	Community Kitchen Volunteers	Women SHGs	Cooking, food distribution	200+	Support isolation centres and relief camps

Skill-Based Volunteer Classification

To ensure efficient deployment, volunteers will be categorised according to their primary skill sets. This approach helps the district administration assign appropriate roles based on the needs of the response operations.

Skill Category	Typical Tasks	Deployment Location
Nursing / Health support	Patient assistance, monitoring vital signs	Hospitals/isolation centres
Food preparation	Cooking for patients and quarantine facilities	Community kitchens
Data management	Case reporting, helpline support	District Control Room
Driving / Logistics	Transport of supplies, patient transport	Supply chain operations
Community outreach	Awareness campaigns, supply distribution	Local wards

c. Volunteer Activation Protocol

A structured activation mechanism will be followed to mobilise volunteers during different stages of pandemic preparedness and response. This ensures that volunteers are deployed efficiently and safely.

Stage	Action	Responsible Authority
Preparedness	Maintain an updated volunteer database	District Disaster Management Authority
Alert Stage	Verify volunteer availability	District Control Room
Emergency Stage	Deploy volunteers based on skill category	District Medical Officer
Recovery Stage	Volunteer support for rehabilitation activities	District Administration

Volunteer Coordination Structure

Effective coordination among government agencies and volunteer organisations is necessary to ensure smooth deployment and management of volunteers during emergencies.

Agency	Role
Kudumbashree Mission	Community mobilisation and food distribution
National Disaster Management Authority	Disaster management guidelines
National Disaster Response Force	Emergency rescue and technical support
District Disaster Management Authority	Overall coordination and deployment

Volunteer Training & Capacity Building Plan

Effective coordination among government agencies and volunteer organisations is necessary to ensure smooth deployment and management of volunteers during emergencies.

Sl. No	Training Module	Target Volunteers	Training Agency	Frequency	Key Skills Developed
1	Basic Infection Prevention & Control	Community volunteers, SHG members	District Health Department	Quarterly	Use of PPE, hygiene practices
2	Patient Care & Basic Nursing Assistance	Health volunteers	Government hospitals	Twice a year	Monitoring vital signs, patient assistance
3	Emergency Response & Disaster Management	Disaster volunteers	National Disaster Response Force trainers	Annual	Emergency rescue, evacuation support
4	Data Reporting & Surveillance	Youth volunteers	District Surveillance Unit	Quarterly	Case reporting, digital data entry
5	Food Safety & Community Kitchen Management	Self-help groups	Kudumbashree Mission	Annual	Food preparation and safe distribution
6	Psychological First Aid	Social workers, volunteers	Health Department / NGOs	Annual	Mental health support for affected families

d. Volunteer Deployment Matrix

Effective utilisation of community volunteers requires a structured deployment mechanism across different administrative levels. Volunteers will be deployed from the ward level up to the district level based on their skill sets and the operational requirements of the pandemic response. Clear supervisory structures will ensure accountability and efficient coordination.

Ward → PHC → District Level

Level	Volunteer Category	Primary Role	Supervising Authority
Ward Level	Community volunteers, SHG members	Awareness campaigns, delivery of essential supplies	Ward Health Committee
Ward Level	Youth volunteers	Data collection and case reporting	Health Inspector
PHC Level	Health support volunteers	Assist doctors and nurses	Medical Officer
PHC Level	Logistics volunteers	Supply distribution and patient transport	PHC Administration
Taluk Level	Disaster response volunteers	Emergency evacuation and crowd management	Taluk Control Room
District Level	Specialized volunteers	Helpline support, data management	District Control Room

This structured deployment system ensures that volunteers are effectively utilised at the appropriate administrative level while maintaining coordination with the health system and disaster management authorities.

Build & Organise Critical Capacities

Developing strong operational capacities is essential for an effective pandemic response. The district will focus on strengthening surveillance systems, early warning mechanisms, risk communication strategies, and rapid response capabilities. These capacities will enable timely detection of outbreaks, informed decision-making, and coordinated response actions.

Surveillance and data

The objective of surveillance and data management during a pandemic is to ensure early detection of cases, timely reporting, monitoring of disease trends, and evidence-based decision-making. A strong surveillance system helps public health authorities identify outbreaks quickly and implement control measures to prevent further transmission.

Surveillance System

Pandemic surveillance in the district will function through an integrated system combining facility-based, laboratory-based, and community-based surveillance under the framework of the Integrated Disease Surveillance Programme (IDSP).

a) Indicator-Based Surveillance (IBS)

Routine surveillance will be carried out through all government and private health institutions reporting suspected and confirmed cases of epidemic-prone diseases on a daily or weekly basis. Data will include:

- Number of suspected cases
- Laboratory confirmed cases
- Hospital admissions and deaths
- Demographic details and geographic location

b) Event-Based Surveillance (EBS)

Information on unusual health events will be captured through:

- Media monitoring
- Community reports
- Local self-government institutions
- Field-level health workers such as ASHA, JHI, and Anganwadi workers

c) Community-Based Surveillance

Community networks, including Kudumbashree units, volunteers, youth clubs, and NGOs, will support early identification of clusters of illness and unusual health events at the local level.

d) Sentinel Surveillance

Selected hospitals and laboratories will function as **sentinel surveillance sites** to monitor disease trends, severity of illness, and complications associated with the pandemic pathogen.

2. Laboratory Surveillance

Laboratory networks will support early diagnosis and confirmation of pathogens. Key components include:

- District and state public health laboratories
- Accredited private laboratories
- Rapid diagnostic testing facilities
- Sample collection and transport systems
- Laboratories will report test results promptly to the district surveillance unit for integration into the surveillance database.

3. Data Collection and Reporting

Health facilities will report surveillance data through standardised formats under the **Integrated Disease Surveillance Programme platform**.
Data reporting will occur at multiple administrative levels to ensure accuracy and timely analysis.

Level	Responsibility
Health Facility	Daily reporting of cases and deaths
Block / Taluk	Compilation and verification of data
District Surveillance Unit	Data analysis and district situation reports
State Surveillance Unit	Monitoring and policy guidance

4. Data Analysis and Interpretation

The district surveillance team will conduct regular analysis of collected data to identify trends and emerging risks. Analytical techniques will help understand the pattern of disease transmission and guide public health interventions.

- Disease trends and transmission patterns
- Emerging hotspots or clusters
- High-risk populations and vulnerable areas
- Burden on health facilities

Analytical tools such as epidemic curves, geographic mapping, and statistical trend analysis will be used to support decision-making.

5. Information Dissemination

Timely dissemination of surveillance information is essential for coordinated response. Key mechanisms include:

- Daily situation reports to the district administration
- Weekly surveillance bulletins
- Alerts to health institutions in case of outbreaks
- Communication to the public through official channels

These mechanisms ensure that stakeholders remain informed and prepared to respond effectively

6. Data Quality and Governance

Maintaining high-quality surveillance data is essential for reliable analysis and policy decisions. The district surveillance system will follow strict data governance principles. All surveillance data will adhere to the following principles:

- Accuracy and completeness of reporting
- Standardised case definitions
- Data validation at the district level
- Protection of patient confidentiality
- Secure digital storage and restricted access

7. Role in Pandemic Response

A robust surveillance and data management system enables the district administration to:

- Detect outbreaks at an early stage
- Initiate rapid containment measures
- Allocate healthcare resources effectively
- Monitor the effectiveness of public health interventions
- Provide evidence-based guidance to policymakers

6.9 Early Warning System and Risk Communication

The Early Warning System aims to detect potential outbreaks at the earliest stage and provide timely alerts to authorities and the public. Early detection allows rapid implementation of control measures and helps prevent widespread transmission during a pandemic.

Early detection will be strengthened through the surveillance network operating under the Integrated Disease Surveillance Programme (IDSP) and the Integrated Health Information Platform (IHIP).

a. Early Warning Mechanisms

a) Health Facility Reporting

All Government and Private Hospitals, Primary Health Centres, and Clinics will report unusual increases in cases such as:

- Fever clusters
- Respiratory infections
- Gastrointestinal outbreaks
- Unusual deaths

Daily reporting will enable rapid detection of abnormal trends.

b) Community-Level Alerts

Early signals will also be generated from the community through:

- ASHA workers
- Junior Health Inspectors (JHI)
- Anganwadi workers
- Community-based One Health volunteers
- Kudumbashree networks
- Local Self-Government Institutions (LSGIs)

Community volunteers will report unusual illness clusters or deaths to the nearest health facility.

c) Media and Event Monitoring

Event-based surveillance will monitor:

- Media reports
- Social media alerts
- Community complaints

- School absenteeism patterns

These signals will be verified by the District Surveillance Unit.

d) Environmental and Seasonal Monitoring

Seasonal trends such as heat waves, water scarcity, and monsoon-related diseases will be monitored to anticipate potential outbreaks.

b. Alert and Response Mechanism:

Once an early warning signal or unusual health event is detected through the surveillance system, a structured response mechanism will be activated to ensure rapid investigation and containment. The District Surveillance Unit will coordinate the verification of signals and initiate appropriate public health actions.

The response process will include the following steps:

1. The **District Surveillance Unit** verifies the reported information.
2. A **field investigation team** is deployed to the affected area.
3. Preventive measures such as **testing, isolation, and contact tracing** are initiated.
4. **Alerts and advisories** are issued to health institutions and local authorities.

These actions help ensure that outbreaks are identified early and appropriate control measures are implemented without delay.

c. Risk Communication Strategy

Effective communication during a pandemic is essential to prevent misinformation, reduce panic, and encourage public cooperation with public health measures. A structured risk communication strategy will ensure that accurate and timely information reaches both health institutions and the general public.

Communication Channels

Information will be disseminated through multiple official communication channels, including:

- District administration bulletins
- Local Self-Government Institutions (LSGIs)
- Health department press releases
- Social media platforms
- Community awareness campaigns

d. Public Awareness Measures

Public awareness initiatives will focus on promoting preventive behaviours and providing clear guidance during outbreaks. Key measures include:

- Health education on symptoms and disease prevention
- Promotion of hygiene and sanitation practices
- Vaccination awareness campaigns
- Guidelines for schools, workplaces, and public gatherings

Transparent and consistent communication will help maintain public trust and community participation during pandemic response activities.

e. Rapid Response Teams (RRT) and Field Investigation

Rapid Response Teams (RRTs) are specialised multidisciplinary teams established to investigate outbreaks, implement containment measures, and coordinate emergency public health responses during pandemics.

These teams enable the district health system to respond quickly to emerging health threats and limit disease transmission.

Composition of Rapid Response Teams

District and Block-level Rapid Response Teams will include trained personnel such as:

- District Medical Officer
- District Surveillance Officer
- Medical Officer
- Microbiologist or Laboratory Specialist
- Epidemiologist
- Public Health Nurse
- Health Inspector / Junior Health Inspector
- Data Manager
- Representatives from local administration

These teams will function under the supervision of the District Medical Officer or District Surveillance Officer.

Functions of Rapid Response Teams

Outbreak Investigation

• Verification of suspected outbreaks
• Conducting field investigations
• Identification of the source and mode of transmission

Case Detection and Contact Tracing

• Active case search in affected areas
• Identification and monitoring of contacts
• Implementation of isolation and quarantine measures

Sample Collection and Testing

• Collection of clinical samples
• Transport of specimens to designated laboratories
• Coordination with laboratory networks

Implementation of Control Measures

• Isolation and treatment of cases
• Disinfection of affected premises
• Community containment strategies

Coordination with Local Authorities

Rapid Response Teams will coordinate closely with other departments to ensure effective outbreak control. Key partners include:

• District administration
• Police department
• Local Self-Government Institutions
• Disaster management authorities

Logistics and Support

To ensure rapid deployment and effective field operations, the district will maintain essential logistics such as:

• Emergency transport facilities
• Personal Protective Equipment (PPE)
• Sample collection kits
• Communication equipment

Reporting

After every field investigation, the Rapid Response Team will prepare and submit a **detailed outbreak investigation report** to the district administration and the **Integrated Disease Surveillance Programme surveillance unit**.

f. Surveillance Monitoring and Reporting Mechanism

To ensure effective implementation of surveillance activities, a structured monitoring system will be maintained. Regular monitoring helps improve reporting compliance, data quality, and early detection of disease outbreaks across health facilities.

Sl. No	Activity	Responsible Authority	Frequency	Monitoring Indicator
1	Strengthen Indicator-Based and Event-Based Surveillance from PHCs, Government Hospitals, Private Hospitals, Diagnostic Laboratories, and LSG Institutions	District Surveillance Officer / Block Medical Officers	Continuous	% of institutions submitting regular surveillance reports
2	Ensure mandatory disease reporting through the Integrated Disease Surveillance Programme reporting system.	District Surveillance Unit (DSU)	Weekly	Completeness and timeliness of reporting
3	Conduct regular IDSP review meetings at the District and Block levels	District Surveillance Officer	Monthly	Number of meetings conducted vs planned
4	Monitor the conduct and documentation of IDSP meetings, including minutes and action taken reports.	District Surveillance Unit	Monthly	Availability of meeting records and follow-up actions
5	Prepare and update the line list of non-reporting institutions (public and private health facilities)	DSU / Taluk Surveillance Units	Monthly	Number of non-reporting institutions identified
6	Prepare a line list of non-reporting diagnostic laboratories	DSU	Monthly	% of laboratories reporting surveillance data
7	Monitor reporting from Local Self Government Departments (LSGD) regarding unusual health events.	Block Medical Officer / Health Inspector	Weekly	Number of event-based alerts received
8	Conduct follow-up visits or communication with non-reporting institutions	DSU / Field Surveillance Staff	Monthly	Reduction in the number of non-reporting institutions
9	Ensure proper maintenance of line lists and surveillance registers	Health Inspectors /	Continuous	Data completeness and accuracy

Sl. No	Activity	Responsible Authority	Frequency	Monitoring Indicator
		Surveillance Assistants		

g. Risk Communication Strategy:

Effective communication is essential to prevent panic and promote public cooperation.

Communication Channels

Information will be disseminated through:

- District administration bulletins
- Local self-government institutions
- Health department press releases
- Social media platforms
- Community awareness campaigns

Public Awareness Measures

- Health education on symptoms and prevention
- Promotion of hygiene practices
- Vaccination awareness campaigns
- Guidelines for schools, workplaces, and public gatherings

Transparent communication will help maintain public trust and community participation during a pandemic response.

e. Rapid Response Teams (RRT) and Field Investigation:

Rapid Response Teams are established to investigate outbreaks, implement containment measures, and coordinate emergency public health response during a pandemic.

Composition of Rapid Response Teams

District and Block-level Rapid Response Teams will be constituted with trained personnel, which may include:

- District Medical Officer
- District Surveillance Officer
- Medical Officer

- Microbiologist or Laboratory Specialist
- Epidemiologist
- Public Health Nurse
- HS/Health Inspector / JHI
- Data Manager
- Representatives from the local administration

These teams will function under the supervision of the District Medical Officer/District Surveillance Officer.

Functions of Rapid Response Teams

Outbreak Investigation

- Verify suspected outbreaks
- Conduct field investigations
- Identify source and mode of transmission

Case Detection and Contact Tracing

- Active case search in affected areas
- Identification and monitoring of contacts
- Isolation and quarantine measures

Sample Collection and Testing

- Collection of clinical samples
- Transport of specimens to designated laboratories
- Coordination with laboratory networks

Implementation of Control Measures

- Isolation and treatment of cases
- Disinfection of affected premises
- Community containment strategies

Coordination with Local Authorities: Rapid Response Teams will coordinate with:

- District administration
- Police department
- Local self-government institutions
- Disaster management authorities

Logistics and Support: To ensure rapid deployment, the district will maintain:

- Emergency transport facilities
- Personal Protective Equipment (PPE)
- Sample collection kits
- Communication equipment

Reporting

After every field investigation, the Rapid Response Team will submit a **detailed outbreak investigation report** to the district administration and the **Integrated Disease Surveillance Programme surveillance unit.

Sl. No	Activity	Responsible Authority	Frequency	Monitoring Indicator
1	Strengthen Indicator-Based and Event-Based Surveillance from PHCs, Government Hospitals, Private Hospitals, Diagnostic Laboratories, and LSG Institutions	District Surveillance Officer / Block Medical Officers	Continuous	% of institutions submitting regular surveillance reports
2	Ensure mandatory disease reporting through the **Integrated Disease Surveillance Programme reporting system.**	District Surveillance Unit (DSU)	Weekly	Completeness and timeliness of reporting
3	Conduct regular IDSP review meetings at the District and Block levels	District Surveillance Officer	Monthly	Number of meetings conducted vs planned
4	Monitor the conduct and documentation of IDSP meetings, including minutes and action taken reports.	District Surveillance Unit	Monthly	Availability of meeting records and follow-up actions
5	Prepare and update the line list of non-reporting institutions (public and private health facilities)	DSU / Taluk Surveillance Units	Monthly	Number of non-reporting institutions identified

Sl. No	Activity	Responsible Authority	Frequency	Monitoring Indicator
6	Prepare a line list of non-reporting diagnostic laboratories	DSU	Monthly	% of laboratories reporting surveillance data
7	Monitor reporting from Local Self Government Departments (LSGD) regarding unusual health events.	Block Medical Officer / Health Inspector	Weekly	Number of event-based alerts received
8	Conduct follow-up visits or communication with non-reporting institutions	DSU / Field Surveillance Staff	Monthly	Reduction in the number of non-reporting institutions
9	Ensure proper maintenance of line lists and surveillance registers	Health Inspectors / Surveillance Assistants	Continuous	Data completeness and accuracy

Community Level

(ASHA, Anganwadi, Kudumbashree, Volunteers, Schools, LSG Institutions)

↓

Sub Centre / PHC Level

(JHI, JPHN, Medical Officer – Case detection & preliminary reporting)

↓

Block / Taluk Level

(Block Medical Officer, Taluk Surveillance Unit – Data compilation & verification)

↓

District Level

(District Surveillance Unit, District Surveillance Officer)

↓

State Level

(State Surveillance Unit)

↓

National Level

h. Strengthening Lab-based Surveillance:

Laboratory-based surveillance is critical for early detection, confirmation, and monitoring of infectious diseases during a pandemic. Strengthening the laboratory system ensures timely diagnosis, rapid response, and evidence-based public health decision-making. Strengthen laboratory-based surveillance by expanding the laboratory network, ensuring standardised sample collection and transport, reducing turnaround time, integrating laboratory data with IDSP, and maintaining quality assurance systems for timely detection and response to emerging infections.

Key Strategies

1. **Expand Laboratory Network**

- Strengthen coordination between government laboratories, private laboratories, and medical college laboratories.
- Identify and notify designated referral laboratories for confirmatory testing.
- Establish district-level laboratory hubs to improve access and reduce delays.

2**. Improve Sample Collection and Transport**

- Standardise sample collection protocols across all health facilities.
- Ensure availability of sample collection kits and viral transport media (VTM).
- Develop a dedicated specimen transport system with cold chain maintenance.

3. **Reduce Laboratory Turnaround Time (TAT)**

- Ensure rapid processing and reporting of samples, ideally within 24 hours for priority pathogens.
- Implement real-time electronic reporting systems linking laboratories with surveillance units.
- It is an important indicator of the efficiency and responsiveness of a laboratory system, especially during outbreaks, surveillance, and pandemic situations.

Components of Lab Turnaround Time

1. Sample Collection Time – Time when the specimen is collected from the patient.
2. Sample Transport Time – Time taken to transport the specimen to the laboratory.
3. Sample Processing Time – Time required for registration, preparation, and testing.
4. Analysis Time – Time taken to perform the laboratory test.
5. Result Validation & Reporting Time – Time required to verify and communicate the result to the clinician or surveillance system.

Steps for optimising laboratory turnaround time (TAT) of ≤24 hours for priority infectious disease samples and ≤48 hours for confirmatory tests, with daily monitoring and reporting to district surveillance units.

4. **Strengthen Reporting and Data Integration**

- Integrate laboratory reporting with the Integrated Disease Surveillance Programme (IDSP) and district surveillance units.
- Ensure daily reporting of positive, negative, and pending samples.
- Monitor non-reporting laboratories and ensure compliance.

5. **Quality Assurance and Biosafety**

- Implement internal and external quality assurance programs.
- Ensure laboratories follow biosafety and biosecurity guidelines.
- Conduct periodic training for laboratory personnel on infection control and testing protocols.

6. **Capacity Building**

- Train laboratory technicians in molecular diagnostics, sample handling, and outbreak investigation.
- Maintain a trained surge workforce for emergency situations.

7. **Logistics and Supply Chain Management**

- Maintain adequate stocks of reagents, consumables, PPE, and testing kits.
- Establish a buffer stock system to avoid supply disruptions during surges.

8. **Genomic and Advanced Surveillance**

- Facilitate genomic sequencing of pathogens to detect new variants.
- Coordinate with regional and national reference laboratories for advanced testing.

9. **Monitoring and Evaluation**

- Regular review of laboratory performance indicators, such as:
    - Sample rejection rate
    - Turnaround time
    - Testing capacity utilization
    - Reporting compliance

I. Strengthening Community-based surveillance

Community-Based Surveillance in a Pandemic is a system where community members and local institutions actively participate in identifying and reporting unusual health events or symptoms in the population. It helps detect outbreaks early, especially in areas where routine health facility reporting may miss cases. It helps us for Early detection of unusual illness or clusters in the community, Rapid reporting to the public health system, Timely response to prevent the spread of disease, and strengthening linkages between communities and the health system.

1. Community Informants

- ASHA workers
- Anganwadi workers
- Kudumbashree members
- School teachers
- Local volunteers and youth clubs
- Community leaders and ward members

2. Event Identification
Community informants report unusual events such as:

- Sudden increase in fever, respiratory illness, diarrhoea, rash, or unexplained deaths
- Clusters of similar illnesses in households, schools, or workplaces
- Unusual animal deaths (possible zoonotic diseases)
- Travellers with symptoms from affected areas

3. Reporting Mechanism

- Immediate reporting to Junior Health Inspector (JHI) / Health Inspector (HI)
- Use of mobile reporting systems, WhatsApp groups, or helplines
- Integration with the Integrated Disease Surveillance Programme (IDSP)

4. Verification

- Health workers verify the reported event through field visits
- Line listing of suspected cases
- Collection of samples for laboratory confirmation

5. Response

- Rapid Response Team (RRT) investigation
- Isolation and treatment of cases
- Contact tracing and monitoring
- Community awareness and risk communication

6. Feedback to Community

- Regular updates to community volunteers
- Awareness of prevention measures
- Reinforcement of reporting mechanisms

In order to strengthen the CBS, the following steps shall be ensured.

- Training of community volunteers on symptom recognition
- Development of simple reporting formats
- Periodic review meetings at the PHC and district level
- Use of digital tools for real-time reporting
- Incentives or recognition for community reporters

Strengthening CBS through community engagement through meetings: Community-level meetings are very important during a pandemic because they help in early detection, community awareness, and coordinated local response. The following community platforms can be effectively used:

1. Neighbourhood Meetings (Ayalkoottam / Ward Level)

- Conduct small neighbourhood meetings to discuss symptoms, prevention, and reporting mechanisms.
- Identify vulnerable individuals (elderly, pregnant women, persons with comorbidities).
- Encourage early reporting of fever or unusual illness to health workers.
- Promote community support systems for quarantine/isolation households.
- Disseminate information on vaccination drives and public health advisories.

2. WHSNC (Ward Health Sanitation and Nutrition Committee)

- Review the health situation in the ward and identify emerging outbreaks.
- Support sanitation, waste management, and vector control activities.
- Facilitate community surveillance and reporting to health authorities.
- Mobilise community resources for awareness campaigns and hygiene promotion.
- Coordinate with local self-government institutions and health staff.

3. JAS (Jan Arogya Samiti / Rogi Kalyan Samiti)

- Strengthen linkages between the community and health facilities.
- Discuss service delivery issues, patient feedback, and facility preparedness.
- Support community communication regarding testing, treatment, and vaccination services.
- Help in resource mobilisation and local problem-solving during emergencies.

4. MASI (Mahila Arogya Samiti)

- Engage women's groups in health promotion and surveillance.

- Spread awareness on infection prevention measures (mask use, hand hygiene, respiratory etiquette).
- Identify symptomatic persons and vulnerable families within the community.
- Support home isolation monitoring and care support.
- Promote maternal and child health services continuity during pandemics.

j. Vaccination & Cold chain integrity

During a pandemic, **vaccination coverage** and **cold chain integrity** are critical components of the immunisation strategy to control disease transmission and reduce mortality. The key points are outlined below.

1. Vaccination Coverage in a Pandemic

Vaccination coverage refers to the **proportion of the target population that has received the recommended vaccine doses**.

Key Strategies

- **Prioritisation of Target Groups**
  - Healthcare workers
  - Elderly population
  - People with comorbidities
  - Essential service providers
  - High-risk communities
- **Micro-planning at the Local Level**
  - Prepare ward/LSG-level beneficiary lists.
  - Mapping of vaccination sites (PHCs, CHCs, hospitals, outreach camps).
  - Mobilisation through community groups such as **Kudumbashree**, NSS, and youth clubs.
- **Multiple Vaccination Platforms**
  - Fixed sites (hospitals, PHCs)
  - Outreach sessions in remote areas
  - Mobile vaccination teams for elderly and bedridden patients
  - Special vaccination camps in institutions (schools, factories, hostels)
- **Monitoring and Data Management**
  - Real-time digital reporting through platforms like **CoWIN**.
  - Daily coverage monitoring at the district and state level.
  - Identification of **low-coverage areas** and targeted interventions.
- **Community Engagement**
  - Awareness campaigns to address vaccine hesitancy.
  - Involvement of local self-governments and community leaders.

2. Cold Chain Integrity in a Pandemic

Cold chain integrity ensures that vaccines are **stored and transported within the recommended temperature range**, maintaining vaccine potency.

Temperature Requirements

Most vaccines must be maintained between **+2°C and +8°C** from the manufacturer to administration.

Key Components

- **Cold Chain Equipment**
  - Walk-in coolers and freezers
  - Ice-lined refrigerators (ILR)
  - Deep freezers
  - Vaccine carriers and cold boxes
- **Temperature Monitoring**
  - Continuous monitoring using digital thermometers/data loggers.
  - Twice-daily temperature recording at vaccine stores.
  - Immediate corrective action if temperature excursions occur.
- **Vaccine Logistics**
  - Proper stock management and the First Expiry-First-Out (FEFO) principle.
  - Adequate supply of ice packs and conditioned carriers.
- **Transportation**
  - Maintain temperature during transit from the district vaccine store to the session site.
  - Use insulated carriers with temperature indicators.
- **Supervision and Quality Assurance**
  - Regular cold chain audits.
  - Supportive supervision visits by district health authorities.
  - Training of vaccinators and cold chain handlers.

3. Monitoring Indicators

Important indicators include:

- Vaccination coverage rate (%) by target group.
- Vaccine wastage rate.
- Cold chain temperature compliance.
- Stock-out frequency.
- Adverse Events Following Immunisation (AEFI) reporting.

k. Specific strategies for Vulnerable Groups

To ensure an equitable and effective pandemic response, it is critical to identify and prioritize populations that face disproportionate risks due to their living conditions, occupational settings, or social vulnerabilities. The following framework outlines specific strategies for high-risk groups and settings across the district, focusing on tailoring surveillance and intervention measures to overcome unique challenges such as overcrowding, mobility, and language barriers.

Sl. No	Vulnerable Group / Setting	Description / Examples	Key Risks in Pandemic	Preparedness & Response Measures	Responsible Agencies
1	High-density settlements	Urban slums, coastal fishing villages, backwater settlements, overcrowded wards	Rapid transmission due to overcrowding, poor ventilation, and limited sanitation	Active surveillance, fever camps, health education, sanitation drives, mask promotion, and early case detection	Health Department, LSGD, ASHA, Anganwadi Workers
2	Migrant clusters	Migrant labour camps, rented worker accommodations, and construction sites	High mobility, shared living spaces, and language barriers affect awareness	Mapping of migrant clusters, periodic health screening, multilingual IEC, coordination with the labour department, vaccination drives	Health Department, Labour Department, Industries, LSGD
3	Major workplaces	Factories, industrial estates, fish processing units, markets, ports, transport hubs	Workplace outbreaks due to crowding and close contact	Workplace infection control protocols, employee health screening, isolation protocol for symptomatic workers, and workplace inspections	Health Department, Labour Department, Industries Department

Sl. No	Vulnerable Group / Setting	Description / Examples	Key Risks in Pandemic	Preparedness & Response Measures	Responsible Agencies
4	Institutions	Schools, colleges, hostels, old age homes, prisons, orphanages, rehabilitation centres	Cluster outbreaks due to shared accommodation and common facilities	Institutional infection control guidelines, periodic health monitoring, outbreak investigation, isolation facilities, vaccination campaigns	Health Department, Education Department, Social Justice Department, Prison Department
5	High-risk Panchayats	Panchayats identified based on past outbreaks, hazard mapping, high-density population, and flood-prone areas	Higher vulnerability to outbreaks and rapid spread	Priority surveillance, community-based surveillance, rapid response teams, awareness campaigns, targeted vaccination	District Administration, Health Department, LSGD

7. GOVERNANCE & STRUCTURE

An effective pandemic response requires a well-defined governance structure with clear roles and responsibilities at each administrative level. In Kerala's decentralised governance system, coordination between district authorities, health departments, local self-government institutions, and community networks is essential for timely decision-making and implementation of public health measures.

The governance structure for pandemic preparedness extends from the **district level down to the ward and community levels**, ensuring coordinated action and accountability across all levels of administration.

7.1 Governance Structure from District to Ward Level

The following framework illustrates the hierarchical structure for pandemic management and coordination.

DISTRICT LEVEL

District Disaster Management Authority (DDMA)

Chair: District Collector

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Public Health Emergency & Pandemic Task Force

DMO, Health Dept, Police, Revenue, LSG, Animal Husbandry,

ICDS, Education, Transport

|

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TALUK / BLOCK LEVEL

Taluk Disaster Management Committee

Chair: Tahsildar

Members: Block Medical Officer, Police, LSG representatives

|

▼

PANCHAYAT / MUNICIPAL LEVEL

Local Self-Government Pandemic Control Committee

Chair: Panchayat President / Municipal Chairperson

Members:

• Medical Officer (PHC)

• Health Inspector

• ICDS Supervisor

• Kudumbashree representatives

• Education representatives

|

▼

WARD LEVEL

Ward Health & Sanitation Committee

Lead: Ward Member

Members:

ASHA Worker

JPHN / JHI

Anganwadi Worker

Ward Volunteers / Arogya Sena

|

▼

COMMUNITY LEVEL

Households & Community Groups

• Kudumbashree

• Youth Clubs

• Resident Associations

• NGOs

This multi-tier governance structure ensures that policy decisions made at the district level are effectively implemented at the grassroots level through local institutions and community participation.

7.2 Institutional Roles and Responsibilities

Each administrative level has specific responsibilities to ensure coordinated pandemic preparedness, surveillance, and response activities. The following table outlines the key authorities involved and their respective roles.

Level	Key Authority/Body	Composition	Key Responsibilities
District Level	District Disaster Management Authority (DDMA), chaired by the District Collector	District Collector, District Medical Officer, Police, Revenue, LSGD, Animal Husbandry, ICDS, District Programme Manager (NHM) Education, Transport, Fire & Rescue	Overall pandemic preparedness and response, policy decisions, inter-department coordination, resource allocation, and monitoring
District Public Health Emergency & Pandemic Task Force	Under DDMA	Health Department, Epidemiologists, Surveillance Officers, Disaster Management Officials	Technical guidance, surveillance review, outbreak investigation, containment strategy
Taluk/Block Level	Taluk Disaster Management Committee	Tahsildar, Block Medical Officer, Police, Panchayat representatives	Coordinate field response, supervise PHCs, ensure supply chain and reporting
Panchayat / Municipality Level	Local Self-Government (LSG) Pandemic Control Committee	Panchayat President/Chairperson, Medical Officer PHC, Health Inspector, ICDS Supervisor, Kudumbashree representatives	Implement containment measures, monitor home isolation, ensure essential services, and community engagement
Ward Level	Ward Health & Sanitation Committee / Ward Rapid Response Team	Ward Member, JHI/JPHN/ASHA, Anganwadi Worker, Volunteers	Community surveillance, contact tracing support, IEC activities, and monitoring quarantined households

Coordination Mechanism

Coordination between different administrative levels is essential for effective pandemic management. Information and directives flow from the district administration to local self-

government institutions, while surveillance data and field reports move upward from the community level to the district authorities.

This two-way communication ensures timely reporting of health events, efficient resource mobilisation, and coordinated implementation of containment measures across the district.

7.3 Panchayat Level Responsibility Matrix (Health Vigilance Committee / Arogya Jagratha Samithi)

Local Self-Government Institutions play a crucial role in pandemic preparedness and response at the community level. In Kerala, the **Arogya Jagratha Samithi (Health Vigilance Committee)** functions as the primary coordination body at the Panchayat level for monitoring public health situations, strengthening surveillance, and supporting health department activities.

These committees coordinate with Primary Health Centres, community volunteers, Kudumbashree units, and local institutions to ensure early detection of cases, effective risk communication, and support for vulnerable populations.

Panchayat Responsibility Matrix Diagram

(Arogya Jagratha Samithi Functions)

The following matrix outlines the functional responsibilities of different stakeholders within the **Arogya Jagratha Samithi** framework. Each function area identifies the lead agency, supporting members, and key activities involved in pandemic response at the Panchayat level.

Function Area	Lead Agency	Supporting Members	Key Activities
Surveillance & Case Detection	Health Inspector	JHI, ASHA	Community surveillance, symptom reporting, line listing
Home Isolation Monitoring	JPHN	ASHA, Ward Volunteers	Daily follow-up of isolated individuals
Contact Tracing Support	Medical Officer PHC	Health staff, volunteers	Identify contacts and monitor symptoms
Quarantine Management	Panchayat Secretary	Health Department	Identify quarantine centres, ensure facilities
Risk Communication (IEC)	Medical Officer	Kudumbashree, Ward Members, Health staff	Awareness campaigns, community announcements
Essential Services Support	Panchayat Committee	Kudumbashree Units	Food, medicines, and essential supplies to quarantined families
Sanitation & Waste Management	Health Inspector	Haritha Karma Sena	Biomedical waste handling and sanitation drives
Volunteer Coordination	Ward Member	Youth Clubs, NGOs	Mobilise volunteers for emergency response

Function Area	Lead Agency	Supporting Members	Key Activities
Vulnerable Population Support	ICDS Supervisor & Health	Anganwadi Workers	Support the elderly, children, and special groups

This structured distribution of responsibilities ensures that **health surveillance, community support, and essential services** are coordinated effectively at the Panchayat level.

7.4 Panchayat Level Committee Structure

To ensure coordinated response and decision-making during public health emergencies, multiple committees' function at the Panchayat level under the leadership of the Local Self-Government Institution. These committees bring together representatives from the health department, ICDS, community organisations, and local administration.

The following table outlines the key committees and their roles in pandemic preparedness and response.

Committee	Lead	Members	Role
Arogya Jagratha Samithi	Panchayat President	Medical Officer, Health Inspector, ICDS Supervisor, Kudumbashree	Overall health vigilance and pandemic monitoring
Ward Level Health Committee	Ward Member	ASHA, Anganwadi Worker, Volunteers	Household-level surveillance and awareness
Rapid Response Support Team	Medical Officer / Health Inspector	Health staff, volunteers	Immediate response to suspected outbreaks

These committees work in coordination with the District Health Department and Primary Health Centres to ensure effective implementation of public health measures.

7.5 Planning Principles & Legal Considerations

Pandemic preparedness planning must be guided by clear principles and supported by appropriate legal frameworks. These principles ensure that response measures remain ethical, inclusive, and aligned with national and international public health standards.

Principles

Pandemic response planning should follow key public health and governance principles to ensure fairness, effectiveness, and community trust.

- Equity in access to healthcare services and resources
- Gender sensitivity and protection of vulnerable populations
- Respect for human rights and dignity
- Inclusiveness and community participation
- Coherence and coordination between government agencies
- Balancing public health measures with individual rights
- Prioritisation of life-saving interventions during emergencies

Legal and Policy Considerations

Pandemic preparedness and response must operate within established legal and policy frameworks that define responsibilities and ensure accountability.

- Legislative frameworks for public health emergency preparedness and response
- Clearly defined roles and responsibilities of government agencies and technical advisory groups
- Compliance with the International Health Regulations (2005) for global health security
- Policies governing data sharing, research, and innovation during public health emergencies
- Ethical guidelines for surveillance, quarantine, and public health interventions

7.6 Principles & policy framework in Pandemic preparedness

Pandemic preparedness planning must be guided by a set of core principles and supported by a strong legal and policy framework. These principles ensure that response actions remain ethical, inclusive, and aligned with national and international public health standards. A well-defined policy framework also clarifies the roles and responsibilities of institutions involved in pandemic response and facilitates coordinated action across sectors.

Key Principles in Pandemic Response

Pandemic preparedness planning must be guided by a set of core principles and supported by a strong legal and policy framework. These principles ensure that response actions remain ethical, inclusive, and aligned with national and international public health standards. A well-defined policy framework also clarifies the roles and responsibilities of institutions involved in pandemic response and facilitates coordinated action across sectors.

Principle	Key Meaning in Pandemic Context	Suggested Icon
Equity	Ensure fair access to health services, vaccines, treatment, and social protection for all populations.	
Gender Sensitivity	Address gender-specific risks, caregiving burdens, and access barriers for women and vulnerable genders.	
Human Rights	Protect dignity, privacy, freedom, and ethical treatment during quarantine, surveillance, and treatment.	
Inclusiveness	Ensure participation and protection of vulnerable groups such as the elderly, migrants, the disabled, and marginalised communities.	
Coherence	Align policies across sectors (health, local governance, disaster management, social welfare)	
Balancing Rights & Public Safety	Implement public health measures while safeguarding civil liberties.	
Setting Priorities	Allocate limited resources (vaccines, ICU beds, medicines) based on risk and vulnerability.	
Equitable Access to Life-Saving Measures	Ensure universal access to vaccines, diagnostics, treatment, and protective measures.	

Adhering to these principles helps ensure that pandemic response measures remain ethical, transparent, and socially acceptable.

Legal and Policy Framework for Pandemic Preparedness

Effective pandemic management requires supportive legal frameworks and clear institutional mandates. National and state policies provide the legal authority for implementing public health measures such as quarantine, surveillance, and movement restrictions.

Component	Description
Legislative Frameworks	National and state laws enabling emergency response, disease control, quarantine, and movement restrictions
Defined Roles & Responsibilities	Clear responsibilities for government agencies, local self-governments, health departments, and technical advisory bodies
Technical Advisory Groups	Expert committees providing scientific guidance on surveillance, treatment, vaccination, and risk assessment
Compliance with International Health Regulations (2005)	Ensures international reporting, coordination, and response to public health emergencies
Data Sharing Policies	Mechanisms for timely sharing of surveillance data between institutions, states, and international agencies
Research & Innovation Policies	Support for vaccine development, diagnostics, public health research, and digital surveillance tools

7.7 Policy Framework Diagram (Simple Flow)

Pandemic preparedness policies operate through a multi-level governance system, linking global health regulations with national, state, district, and community-level implementation.

This layered policy structure ensures that international health obligations are translated into practical public health actions at the local level.

Plan Development & Approach

The development of a pandemic preparedness plan requires a systematic and participatory approach. The planning process should involve multiple stakeholders, analyse existing health system capacities, and identify gaps that need to be addressed.

Component	Key Elements	Description / Purpose
Development Methods	Planning Committee – Terms of Reference	Define roles, responsibilities, decision-making authority, and accountability of the planning committee responsible for preparing the pandemic preparedness plan.
	Multisector & Multilevel Consultations	Engage stakeholders from health, local self-government, disaster management, education, police, civil supplies, private sector, NGOs, and community representatives at district, block, and panchayat levels.
	Analysis of Existing Systems	Review current health systems, surveillance mechanisms, workforce capacity, logistics, emergency response structures, and lessons learned from previous outbreaks.
Approach	Needs-Based Planning	Identify gaps and prioritise interventions based on local risk, vulnerability, and available resources.
	Scalable Strategy	Ensure the preparedness plan can expand or contract depending on the severity and spread of the pandemic.
	Integrated Systems	Align pandemic preparedness with disaster management plans, health system strengthening, and existing surveillance programs.
	Regular Updates	Periodic revision of the plan based on new evidence, simulation exercises, and emerging threats.
	Indicators & Milestones	Establish measurable indicators (e.g., response time, lab capacity, stock levels, vaccination coverage) to track preparedness progress.
Operational Stages	Planning Assumptions	Define possible outbreak scenarios, transmission patterns, and resource requirements.
	Funding Mechanisms	Identify financial sources, including government budgets, emergency funds, and partner support for preparedness activities.
	National & Sub-National Considerations	Ensure alignment with national guidelines while adapting strategies to district and local contexts.

Operational Stages of Plan Development

The development and implementation of a pandemic preparedness plan typically occur through several operational stages. These stages help ensure that planning activities are completed systematically within a defined timeline.

Operational Stage	Activities	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Planning Assumptions	Define outbreak scenarios, transmission patterns, and risk assessment						
Funding & Resource Mobilisation	Budget allocation, identify emergency funds, and donor coordination						
Committee Formation	Establish planning committees, define ToR.						
System & Gap Analysis	Assess healthcare capacity, surveillance, logistics, and workforce						
Stakeholder Consultations	Multisector & multilevel meetings						
Plan Drafting & Integration	Draft pandemic preparedness plan, integrate with disaster plans.						
Indicators & Milestones Setup	Define KPIs and a monitoring framework.						
Capacity Building & Simulation	Training, tabletop exercises, mock drills						
Plan Review & Update	Revise plan based on						

Operational Stage	Activities	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
	exercises, new evidence.						
Full Operationalization	Activate plan at all levels, continuous monitoring						[redacted]

A strong principles-based policy framework combined with systematic planning approaches ensures that pandemic preparedness efforts remain effective, adaptable, and aligned with national and global public health standards. Through coordinated governance, evidence-based decision-making, and community participation, districts can build resilient systems capable of responding to future health emergencies.

7.8 State Systems & Emergency Coordination

Effective pandemic preparedness requires a well-coordinated governance and operational framework that connects state, district, and local health systems. Emergency coordination mechanisms ensure that decision-making, resource allocation, and operational response are streamlined across departments and administrative levels. These systems enable rapid communication, mobilisation of human resources, and integration of health services with other sectors such as disaster management, transport, police, and local self-governments.

The State Health Department, in coordination with the State Disaster Management Authority and the Integrated Disease Surveillance Programme (IDSP), provides technical guidance, resource support, and policy direction to districts during public health emergencies. At the district level, these directives are operationalised through the District Disaster Management Authority (DDMA) and the District Health Administration, ensuring timely response, effective containment strategies, and efficient use of available resources.

Surveillance & Laboratory Systems

Strengthening Lab-based surveillance:

Laboratory-based surveillance is critical for early detection, confirmation, and monitoring of infectious diseases during a pandemic. Strengthening the laboratory system ensures timely diagnosis, rapid response, and evidence-based public health decision-making. Strengthen laboratory-based surveillance by expanding the laboratory network, ensuring standardised sample collection and transport, reducing turnaround time, integrating laboratory data with IDSP, and maintaining quality assurance systems for timely detection and response to emerging infections.

Key Strategies

1. Expand Laboratory Network

- Strengthen coordination between government laboratories, private laboratories, and medical college laboratories.
- Identify and notify designated referral laboratories for confirmatory testing.
- Establish district-level laboratory hubs to improve access and reduce delays.

2. Improve Sample Collection and Transport

- Standardise sample collection protocols across all health facilities.
- Ensure availability of sample collection kits and viral transport media (VTM).
- Develop a dedicated specimen transport system with cold chain maintenance.

3. Reduce Laboratory Turnaround Time (TAT)

- Ensure rapid processing and reporting of samples, ideally within 24 hours for priority pathogens.
- Implement real-time electronic reporting systems linking laboratories with surveillance units.
- It is an important indicator of the efficiency and responsiveness of a laboratory system, especially during outbreaks, surveillance, and pandemic situations.

Components of Lab Turnaround Time

1. Sample Collection Time – Time when the specimen is collected from the patient.
2. Sample Transport Time – Time taken to transport the specimen to the laboratory.
3. Sample Processing Time – Time required for registration, preparation, and testing.
4. Analysis Time – Time taken to perform the laboratory test.
5. Result Validation & Reporting Time – Time required to verify and communicate the result to the clinician or surveillance system.

Efforts should aim to maintain a **laboratory turnaround time of ≤24 hours for priority infectious disease samples and ≤48 hours for confirmatory tests**, with daily monitoring and reporting to district surveillance units.

4. Strengthen Reporting and Data Integration

- Integrate laboratory reporting with the Integrated Disease Surveillance Programme (IDSP) and district surveillance units.
- Ensure daily reporting of positive, negative, and pending samples.
- Monitor non-reporting laboratories and ensure compliance.

5. Quality Assurance and Biosafety

- Implement internal and external quality assurance programs.
- Ensure laboratories follow biosafety and biosecurity guidelines.
- Conduct periodic training for laboratory personnel on infection control and testing protocols.

6. Capacity Building

- Train laboratory technicians in molecular diagnostics, sample handling, and outbreak investigation.
- Maintain a trained surge workforce for emergency situations.

7. Logistics and Supply Chain Management

- Maintain adequate stocks of reagents, consumables, PPE, and testing kits.
- Establish a buffer stock system to avoid supply disruptions during surges.

8. Genomic and Advanced Surveillance

- Facilitate genomic sequencing of pathogens to detect new variants.
- Coordinate with regional and national reference laboratories for advanced testing.

9. Monitoring and Evaluation

- Regular review of laboratory performance indicators, such as:
    - Sample rejection rate
    - Turnaround time
    - Testing capacity utilization
    - Reporting compliance

Collaborative Surveillance

Collaborative surveillance is a coordinated approach that involves multiple sectors, levels of government, and community stakeholders sharing data, resources, and responsibilities. This approach improves early detection of disease outbreaks and enhances coordinated response efforts. Collaboration between health departments, laboratories, veterinary services, environmental agencies, and community networks strengthens overall pandemic preparedness and response.

7.9 Community Protection & Communication

Community protection and effective risk communication are essential components of pandemic preparedness and response. They help reduce disease transmission, ensure public cooperation with health measures, and maintain social stability during health emergencies. A well-informed community is better equipped to adopt preventive behaviours and support containment efforts.

Community Protection & Risk Communication in Pandemic

1. Protection Mechanisms

Community protection focuses on reducing exposure, ensuring safety, and maintaining essential services during a pandemic.

a. Infection Prevention

Promote frequent handwashing with soap or alcohol-based sanitisers.

Encourage proper mask usage, including high-risk settings (crowds, healthcare facilities).

Implement physical distancing measures in public spaces, workplaces, and schools.

Regular disinfection of frequently touched surfaces and communal areas.

b. Vaccination

Organise mass vaccination drives and mobile units for remote areas.

Prioritise high-risk groups: elderly, healthcare workers, people with comorbidities.

Vaccination of the homebound & bed bound on priority

Maintain cold chain integrity and track vaccination coverage in real time.

Address vaccine hesitancy through community outreach and trusted local leaders.

c. Personal Protective Equipment (PPE)

Supply PPE to frontline workers and vulnerable populations.

Train community members and volunteers on correct PPE usage and disposal.

Monitor stock levels to prevent shortages during peak demand.

d. Social Welfare Measures

Ensure food distribution, cash transfers, and shelter support for quarantined or affected families.

Coordinate with local NGOs, community kitchens, and volunteer networks.

Include psychosocial support for stress, anxiety, and isolation.

e. Essential Services Continuity

Keep healthcare, water, sanitation, and power supply uninterrupted.

Develop contingency plans for service disruptions.

Promote safe access to markets, pharmacies, and banks during lockdowns.

2. Risk Communication Strategies

Effective communication is crucial for public understanding and compliance during a pandemic.

a. Two-way Communication Mechanisms

Establish hotlines, SMS alerts, and digital platforms for reporting and queries.

Enable feedback from communities to authorities for localised problem-solving.

b. Community Engagement

Involve local leaders, religious figures, schoolteachers, and volunteers as trusted messengers.

Conduct door-to-door awareness campaigns, street plays, or community meetings.

c. Media Outreach

Use TV, radio, newspapers, social media, and mobile apps to disseminate updates.

Share clear instructions on symptoms, prevention, treatment, and support services.

d. Language and Cultural Adaptation

Translate messages into local languages and dialects.

Use culturally appropriate communication methods (illustrations, storytelling, and infographics).

3. Misinformation and Infodemic Management

Monitor rumours, fake news, and misinformation through social media tracking, community reports, and surveys.

Establish **fact-checking units** to counter false information quickly.

Educate the public on identifying reliable sources, scientific reasoning, and vaccine facts.

Strengthen community resilience by building trust in health systems and authorities.

4. Travel and Trade Risk Communication

Issue clear guidelines for travellers regarding vaccination requirements, quarantine, and testing.

Communicate protocols for screening at airports, railway stations, and highways.

Maintain risk communication about safe trade practices, import/export restrictions, and essential goods movement.

Provide updates on evolving travel advisories and localised containment measures.

5. Visuals for Implementation

Visual tools can improve public understanding and support the implementation of community protection measures.

a. Infographic for Community Protection

Central hub: **Community Safety**

Surrounding segments: Infection prevention, vaccination, PPE, social welfare, and essential services.

Use simple icons (handwash, syringe, mask, food basket, hospital).

7.10 Clinical Care & Essential Services

Clinical care and the continuity of essential services are critical components of pandemic response. Health systems must ensure that patients receive timely diagnosis and treatment while maintaining the functioning of essential public services. This requires coordinated efforts between healthcare institutions, public health authorities, and supporting sectors.

Clinical Care and Essential Services Responsibilities

Domain	Key Activities	Defined Responsibilities
Clinical Care	Scaling facilities	Hospital administrators to expand bed capacity; district health officials to coordinate temporary treatment centres.
	Diagnostics	Labs to ensure timely testing; clinicians to request and interpret tests; supply chain to maintain testing kits
	Case management	Doctors and nurses to manage patient treatment plans, follow clinical protocols, and monitor outcomes
	Telemedicine	Health IT teams to set up virtual consultation platforms; doctors to provide remote care
	Safe burials	Public health teams to guide and supervise burial practices; local authorities to enforce protocols
	Waste management	Hospital infection control teams to manage medical waste; municipal waste services to safely dispose of biohazard materials
Essential Services	Maintenance	Facility management teams are to ensure that utilities, equipment, and supplies are functional
	Workforce supplementation	HR and health authorities to recruit temporary staff; training teams to orient new workers
	Monitoring	Health administration to track service delivery, patient flow, and resource availability.
	Recovery	Public health planners to plan post-outbreak rehabilitation; community services to support affected populations
Clinical Protection	Infection control	Health facility infection control teams to enforce hygiene protocols, PPE usage, and isolation measures
	WASH (Water, Sanitation, Hygiene)	Local government and sanitation teams are to ensure clean water, proper sanitation, and hygiene facilities.

Domain	Key Activities	Defined Responsibilities
	Health worker safety	Administration to provide PPE, vaccination, mental health support, and training for staff safety
	Sectoral roles	Each sector (education, transport, food, etc.) should define continuity plans and protection measures relevant to their services.

District-Level Responsibilities

Activity	District-Level Responsible Officer/Team	Oversight Role	Domain
Scaling Facilities	District Health Officer (DHO)	Monitor facility capacity, coordinate temporary treatment centres, and ensure bed surge readiness	Clinical Care
Diagnostics	DHO & District Lab Coordinator	Ensure lab network functioning, timely testing, supply of test kits, and reporting to surveillance	Clinical Care
Case Management	DHO & Senior Clinician Committee	Supervise treatment protocols, monitor patient outcomes, and provide guidance to hospital teams	Clinical Care
Telemedicine	DHO & District Health IT Coordinator	Ensure telemedicine platforms are operational, accessible, and integrated	Clinical Care
Safe Burials	DHO & Public Health Inspector	Oversee adherence to burial guidelines, coordinate with local authorities	Clinical Care
Waste Management	DHO & District Infection Control Team	Monitor medical waste handling, ensure compliance with standards	Clinical Care
Maintenance of Facilities	DHO & District Facility Management Unit	Ensure utilities, equipment, and essential supplies are functional	Essential Services
Workforce Supplementation	DHO & HR/Training Unit	Coordinate staffing needs, deploy personnel, and provide rapid training	Essential Services
Monitoring & Reporting	DHO & District Surveillance Team	Conduct review meetings, track patient flow, resources, and report to authorities	Essential Services

Activity	District-Level Responsible Officer/Team	Oversight Role	Domain
Recovery Planning	DHO & District Planning Team	Coordinate post-outbreak recovery efforts with local authorities and communities	Essential Services
Infection Control	DHO & District Infection Control Team	Conduct audits, supervise PPE use, isolation protocols, and training	Protection
WASH (Water, Sanitation, Hygiene)	DHO & District WASH Officer	Ensure clean water, sanitation, and hygiene compliance in facilities & communities	Protection
Health Worker Safety	DHO & HR/Occupational Safety Team	Monitor PPE, vaccination, mental health support, and overall workforce safety	Protection
Sectoral Roles	District Collector & DHO	Coordinate cross-sector preparedness with education, transport, food, and other departments	Protection

Access to Countermeasures

Ensuring equitable and timely access to medical countermeasures such as vaccines, therapeutics, diagnostics, and protective equipment is a critical component of pandemic preparedness.

Supplies & Stockpiles

Maintain essential supplies lists for pandemic response.

Establish rapid scaling mechanisms for procurement and distribution.

Utilise national and international stockpiles when required.

Regulatory & Supply Chains

Strengthen regulatory frameworks to ensure safe and rapid approval of countermeasures.

Address liability and safety considerations for emergency use.

Maintain resilient upstream and downstream supply chains.

Encourage research and development environments for innovative countermeasures.

Visual Tools

Supply chain flowchart illustrating procurement to distribution.

Operational checklist for countermeasure access and monitoring.

Plan Activation & Operational Triggers

A clearly defined activation mechanism ensures that the pandemic preparedness plan can be rapidly implemented when early warning signals or outbreak indicators are detected.

Activation

Define decision-making bodies responsible for activating the response plan.

Identify stakeholder roles and responsibilities during activation.

Establish clear communication protocols for alerting departments and partners.

Operational Stages

Pandemic response typically follows three operational stages:

Prevent and Prepare – surveillance, risk assessment, and preparedness planning.

Respond – containment, control, and mitigation measures to reduce transmission.

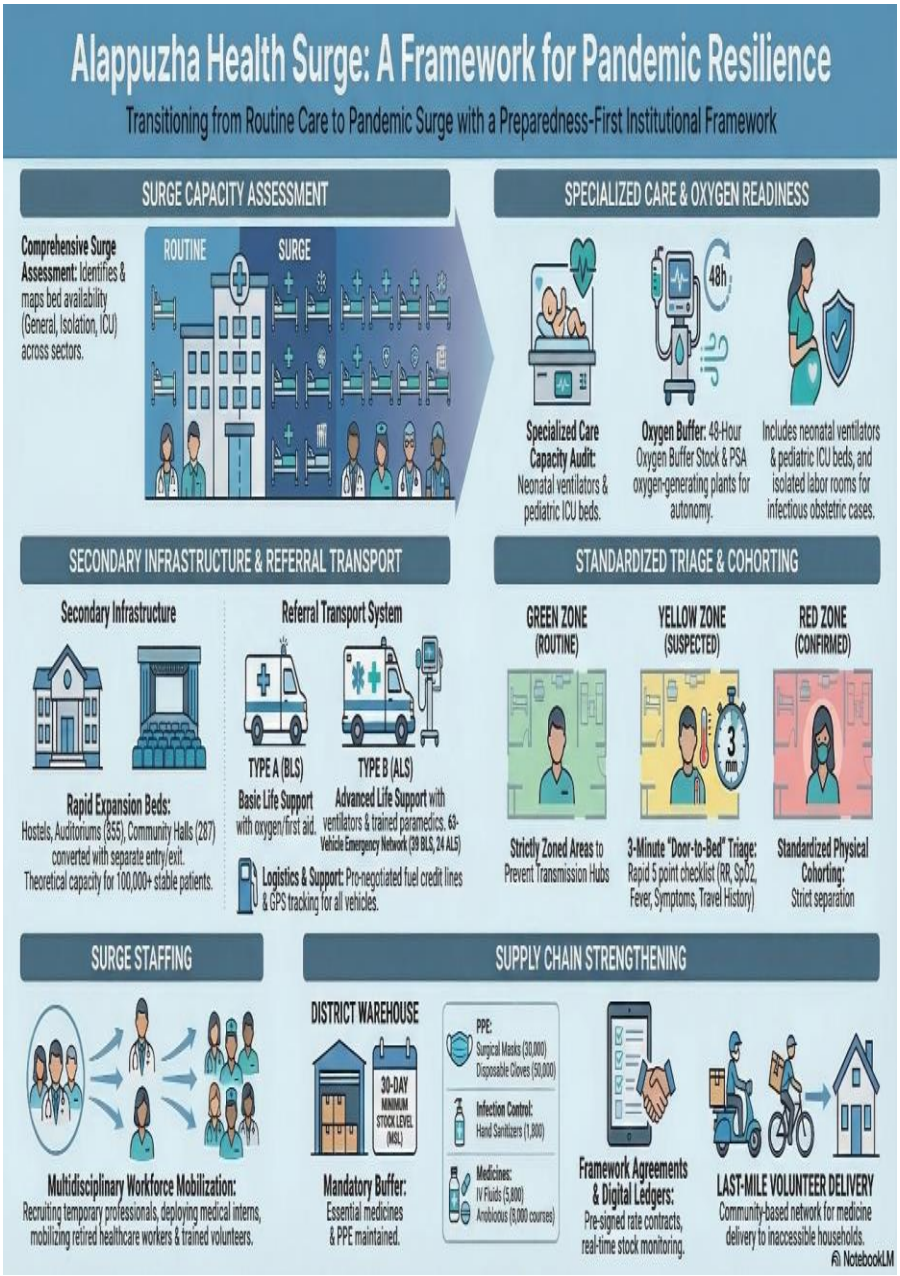
Recover – scaling down emergency operations while maintaining surveillance and strengthening health systems.

Visual Tools

- Decision tree for pandemic plan activation.
- Timeline illustrating operational stages from preparedness to recovery

8. HEALTH SYSTEM SURGE

Health system surge capacity refers to the ability of the healthcare system to rapidly expand beyond normal services to meet increased demand during public health emergencies.



Surge planning includes expanding hospital infrastructure, mobilising additional human resources, strengthening referral and transport systems, and ensuring an uninterrupted supply of oxygen, medicines, and equipment. Effective surge management requires coordinated planning between hospitals, district administration, local self-governments, and community networks.

8.1 Surge Capacity Assessment and Gap Analysis

A comprehensive gap analysis helps identify limitations in the current health system and estimate the additional resources required during a pandemic. The district health administration should periodically assess available infrastructure and plan for rapid expansion if demand increases.

Key Assessment Areas

- Hospital bed availability (general beds, isolation beds, ICU beds)
- Oxygen supply and critical care infrastructure
- Paediatric and obstetric care capacity
- Referral transport and emergency response systems
- Availability of trained healthcare workers

Planning Expansion Beds

Pre-planning for expansion beds using existing infrastructure, such as hostels, auditoriums, and community halls, helps the district respond quickly during patient surges.

Key actions include:

- Identification of facilities suitable for temporary treatment centres
- Planning separate entry and exit points for ambulances
- Ensuring adequate sanitation, ventilation, and electricity
- Installing oxygen supply and basic medical equipment where required

8.2 Specialised Care Capacity Audit

Pandemics often affect vulnerable populations such as pregnant women, children, and critically ill patients. A specialised care audit ensures that essential maternal, neonatal, and paediatric services remain available.

Specialised Care Audit Measures

- Identify the number of functional neonatal ventilators available in district hospitals.
- Assess paediatric ICU beds capable of managing infectious respiratory diseases.
- Identify labour rooms that can be isolated for infectious obstetric cases.
- Ensure referral pathways for high-risk maternal and neonatal cases.

This audit helps maintain continuity of essential services while managing infectious disease cases.

8.3 Oxygen Supply and Critical Care Readiness

Oxygen is one of the most critical resources during respiratory pandemics. Districts must assess oxygen production capacity and maintain adequate reserves to handle peak demand.

Oxygen Autonomy Calculation

- Calculate total litres-per-minute (LPM) oxygen production capacity from local oxygen plants and concentrators.
- Compare this with projected demand during peak infection periods (e.g., assuming 5% of active cases require oxygen support).
- Maintain backup oxygen cylinders and emergency refill arrangements.

Oxygen Infrastructure Planning

- Maintain functional PSA oxygen plants in major hospitals.
- Ensure uninterrupted supply of oxygen cylinders and liquid medical oxygen.
- Develop emergency oxygen redistribution mechanisms across hospitals.8.4 Secondary Infrastructure Mapping

To manage large-scale outbreaks, additional care facilities may be required beyond hospitals.

Expansion Bed Mapping

- Identify hostels, auditoriums, sports complexes, and community halls for temporary care facilities.
- Prepare floor plans for patient beds, triage areas, and staff zones.
- Establish separate entry and exit routes to reduce infection risk.
- Ensure availability of water supply, sanitation, electricity, and waste management.

These facilities can function as step-down care centres or isolation wards during peak patient loads.

8.5 Referral Transport and Emergency Response System

Efficient referral transport systems ensure the timely movement of patients between healthcare facilities.

Referral Transport Matrix

Available vehicles should be categorised into:

Type A – Basic Life Support Transport

- Basic patient transport vehicles
- Equipped with oxygen cylinders and first aid supplies

Type B – Advanced Life Support Transport

- Ambulances with advanced monitoring equipment
- Ventilators and trained paramedics

Additional planning measures include:

- Pre-negotiated fuel credit lines with local petrol pumps
- Dedicated ambulance dispatch coordination
- GPS-based tracking systems for emergency vehicles

8.6 Surge Staffing and Human Resource Planning

Human resources are often the most critical limitation during health emergencies. A surge staffing plan ensures that adequately trained personnel are available during patient surges.

Staff-to-Bed Ratio Analysis

District health authorities should calculate:

- Required nurse-to-patient ratios
- Number of respiratory therapists
- Availability of intensive care specialists
- Additional support staff, such as technicians and ward assistants

Surge Workforce Strategies

- Temporary recruitment of healthcare professionals
- Deployment of medical interns and trainees
- Mobilisation of retired healthcare professionals

- Training volunteers and community health workers for support roles

8.7 Standardised Triage, Cohorting and Infection Prevention

Standardised triage and infection prevention protocols help prevent healthcare facilities from becoming transmission hubs.

Physical Cohorting Zones

Healthcare facilities should be divided into clearly defined zones:

- Green Zone – Non-infectious patients and routine healthcare services
- Yellow Zone – Suspected cases and triage area
- Red Zone – Confirmed infectious disease, patients

This zoning system helps minimise cross-infection and improves patient management.

Triage "Door-to-Bed" Protocol

Entry gate staff should follow a 5-point rapid triage checklist:

- Check the respiratory rate
- Measure oxygen saturation (SpO_2)
- Identify fever and respiratory symptoms
- Determine travel or contact history
- Direct patients to appropriate care zones

This triage process should be completed within 3 minutes of patient arrival.

On-Site Mentoring and Training

Continuous training improves healthcare worker preparedness.

Key initiatives include:

- Shadow training programs where specialists from district hospitals visit primary health centres.
- Hands-on training for ventilator use and oxygen therapy.
- Practical demonstrations on correct PPE use and infection prevention.

Infection Prevention and Control (IPC) Monitoring

Daily monitoring helps ensure adherence to infection control standards.

IPC Compliance Checklists

Supervisors should conduct daily safety walk audits to verify:

- Availability of hand hygiene stations
- Proper biomedical waste segregation
- Environmental cleaning of frequently touched surfaces
- Availability and correct use of PPE

Healthcare Worker Protection

Healthcare worker safety is essential to sustain health services during pandemics.

Key measures include:

- Regular health monitoring of healthcare workers
- Vaccination programs for frontline staff
- Mental health support services
- Rotational duty schedules to prevent burnout

8.8 Supply Chain Strengthening for Surge Response

An efficient logistics and supply chain system ensures the continuous availability of medical supplies during a pandemic. Supply chain planning should include procurement, storage, transportation, and distribution of essential commodities**.**

District–Community Logistics System

The logistics system operates through a multi-tier structure involving district administration, block authorities, local self-governments, and ward-level community networks. Each level plays a specific role in planning, procurement, storage, monitoring, and distribution of supplies. Effective coordination between these levels ensures a timely response to sudden demand surges and prevents stock-outs during emergencies.

Map and formalise supply chains with contingency routes, framework agreements, and a simple inventory

Logistics / Supply Function	District Administration / DDMA	Block / Taluk Level	Panchayat / Municipality (LSG)	Ward / Community Level
Planning & Coordination	Develop a district logistics plan, allocate resources, coordinate health, disaster management, and supply departments.	Consolidate block-level requirements and coordinate between PHCs and LSGs	Prepare a local micro-plan based on population, risk groups, and facilities	Ward committees identify household needs and vulnerable populations
Stock Procurement	Bulk procurement of PPE, diagnostics, medicines, oxygen, and equipment	Receive and distribute supplies to health institutions and LSGs	Procure locally permitted items (masks, sanitisers, basic medicines) as per emergency bylaws	Support the distribution of locally produced items through volunteers
Stock Storage & Warehousing	Maintain district medical warehouses and oxygen storage facilities	Maintain block-level storage and ensure supply to PHCs/CHCs	Maintain emergency buffer stock at the LSG office/health institutions	Temporary storage and distribution points for emergency supplies
Consumption Monitoring	Establish consumption norms and track district-wide supply data	Monitor stock utilisation in PHCs and hospitals	Maintain daily stock registers for PPE, medicines, and home-care kits	Report shortages or unusual demand patterns
Diagnostics Supply & Cold Chain	Ensure supply of diagnostic kits and cold chain equipment	Monitor lab capacity and reagent stock at block facilities	Verify refrigerators/freezers for kit storage and maintain temperature logs	Assist in transporting samples and kits safely
Home-Care Kit Distribution	Approve standard kit composition and allocate funds	Supply kits to PHCs and LSGs	Maintain a ready stock and distribute to households under home isolation	Deliver kits and provide instructions through ASHA/volunteers
Local Production & Vendor Engagement	Issue quality guidelines and approvals	Identify potential local suppliers	Maintain a registry of **MSMEs / SHGs (e.g., Kudumbashree)** for mask and sanitiser production.	Support local tailoring units and community groups.

Logistics / Supply Function	District Administration / DDMA	Block / Taluk Level	Panchayat / Municipality (LSG)	Ward / Community Level
Transportation & Last-Mile Delivery	Arrange district logistics transport, ambulances, and oxygen tankers	Coordinate transport to health institutions	Arrange local vehicles for supply movement	Volunteers assist with household delivery
Emergency Procurement	Declare emergency procurement provisions and release funds	Facilitate rapid approvals and financial monitoring	Purchase essential items from local vendors under emergency bylaws	Assist in identifying reliable local suppliers
Monitoring & Reporting	District-level dashboard for supply chain monitoring	Weekly review of block stock and supply gaps	Submit stock and consumption reports to the block authorities	Real-time reporting through ward volunteers and health workers

The above framework ensures that logistics planning and implementation are decentralised while maintaining strong district-level oversight. Ward committees and community volunteers play a crucial role in identifying vulnerable households, reporting shortages, and supporting last-mile distribution of essential supplies.

8.9 Supply Chain Contingency Planning

Supply chain disruptions can occur due to lockdowns, natural disasters, or transportation restrictions. Contingency planning ensures continuity of supply during such disruptions.

Map and formalise supply chains with contingency routes, framework agreements, and a simple inventory

Component	Description	Key Actions	Responsible Level
Contingency Routing Maps	Identification of alternate transport routes for medical supplies if primary roads become inaccessible due to lockdowns, floods, protests, or disasters.	• Map primary and secondary routes for supply transport • Coordinate with police, transport department, and disaster management authorities • Update route maps periodically and share with logistics teams	District Administration, Transport Department, Health Department
Framework Agreements (Rate Contracts)	Pre-signed agreements with suppliers to ensure stable pricing and uninterrupted supply of	• Fix prices for key commodities (PPE, masks, oxygen accessories, medicines) for **12–24 months** • Identify	District Procurement Committee,

Component	Description	Key Actions	Responsible Level
	essential medical commodities during emergencies.	multiple vendors to avoid supply disruption • Include clauses preventing price escalation during emergencies	Health Department
Simplified Digital Ledger	A mobile-friendly inventory tracking system enabling rapid stock entry and monitoring at the facility level.	• Develop a **one-page digital tracker** for stock entry • Record incoming and outgoing supplies with a single click • Integrate with district-level dashboard for real-time monitoring	District Health Office, IT Support Team
Buffer Stock Trigger Points	Predefined re-order thresholds to prevent stock-outs of critical supplies.	• Define **minimum stock levels (e.g., 25% of capacity)** • Automated alerts sent to District Health Emergency Operations Centre (EOC) • Initiate replenishment process immediately	District Warehouse, Health Logistics Team
Last-Mile Volunteer Network	Community-based delivery system for essential medicines and supplies in areas inaccessible to large vehicles.	• Identify trained **two-wheeler/bicycle volunteers** • Link volunteers with ASHA workers and ward-level teams • Provide basic training, ID cards, and safety kits	Panchayat, Community Volunteers, Health Workers

District–Panchayat Logistics Responsibility Matrix for Pandemic Supply & Distribution

During large-scale health emergencies, clear delineation of responsibilities across administrative levels is necessary to maintain efficient supply chain management. The District - Panchayat Logistics Responsibility Matrix outlines the roles of district authorities, block or taluk administrations, local self-governments, and community networks in managing pandemic supplies. By defining responsibilities at each level, the system ensures coordinated procurement, effective inventory monitoring, reliable transportation of supplies, and timely delivery of essential commodities to healthcare facilities and households.

Function / Activity	District Level (District Collector / DMO / EOC)	Block / Taluk Level	Panchayat / LSGD Level	Ward / Community Level
Supply Chain Planning	Develop district logistics plan; estimate demand for PPE, medicines, diagnostics;	Consolidate requirements from PHCs and hospitals; monitor stock availability.	Identify local demand and vulnerable areas; report shortages	Assist in identifying households needing medicines or supplies

Function / Activity	District Level (District Collector / DMO / EOC)	Block / Taluk Level	Panchayat / LSGD Level	Ward / Community Level
	coordinate procurement.			
Contingency Routing Maps	Prepare district transport maps, including alternate routes; coordinate with police & transport departments.	Validate local routes and road accessibility	Identify village-level alternative paths for supply delivery	Guide delivery teams through local routes and narrow lanes
Framework Agreements (Rate Contracts)	Finalise rate contracts with vendors for PPE, medicines, oxygen accessories and other essential items	Coordinate with district procurement teams and ensure supply to block stores.	Support local procurement for emergency small-scale needs	Assist in the distribution and monitoring of supplies
Inventory Monitoring (Digital Ledger)	Maintain district-level digital dashboard and logistics control room	Update stock status from block stores and PHCs	Maintain a simple digital/physical register of incoming and outgoing supplies.	Inform ASHA/health workers about shortages or urgent needs.
Buffer Stock Management	Define minimum stock levels and trigger points; maintain district buffer stock warehouse.	Maintain block-level emergency reserves	Maintain a limited local stock for emergency response	Report rapid consumption or shortage of medicines
Distribution & Transport	Arrange bulk transport to block warehouses and major health facilities	Distribute supplies to PHCs, CHCs, and field teams	Organise local transport for supplies to subcentres and outreach teams	Support last-mile delivery to households
Last-Mile Volunteer Network	Issue guidelines for volunteer engagement and safety; coordinate with NGOs	Train volunteers and maintain roster	Identify local volunteers (two-wheeler/bicycle teams) for medicine delivery.	Deliver medicines, PPE, and essentials to households in need.
Monitoring & Reporting	Review logistics status through EOC meetings; resolve supply bottlenecks	Conduct a weekly stock review with the facilities	Report stock status during Panchayat health meetings	Provide community feedback on supply availability

9.PREPAREDNESS AND RESPONSE PROTOCOL AT DISTRICT LEVEL

This section describes the operational framework for the district once a pandemic is declared. It explains how the district and health system will move from routine data collection to active response, using a One Health approach.

9.1 Constitution of One Health Committee

The district shall constitute a one health committee comprising the district collector, medical officers (modern medicine, AYUSH, and veterinary), the health inspector, and the veterinary surgeon.

Objective: The One Health Committee coordinates human, animal, and environmental health to prevent and control pandemics.

Sl No	Designation	Department/Institution	Role in Committee
1	District collector	District Administration	Chairperson
2	District Medical Officer (Health)	Health Dept	Member Secretary
3	District Animal Husbandry Officer	Animal Husbandry	Member
4	Deputy Director, Panchayats	Local Self-Government Department (LSGD)	Member
5	District Agriculture Officer	Agriculture Department	Member
6	District Fisheries Officer	Fisheries Department	Member
7	District Forest Officer	Forest Department	Member
8	District Food Safety Officer	Food Safety Department	Member
9	District Surveillance Officer	Health Department / IDSP	Member
10	District NKKP2 Nodal Officer (Convener)	Health Department	Member
11	District Programme Manager(NHM)	Health Department	Member
12	Civil society Representative	Non-Governmental Organization / Community Organization	Member

Sl No	Designation	Department/Institution	Role in Committee
13	Line Department representations	Police Department, Education Department, ICDS, Disaster Management Authority, Transport Department	Member

Key Responsibilities:

- Review disease surveillance data (human + animal)
- Conduct ward-wise risk assessment and vulnerability mapping
- Approve quarantine/isolation centre locations
- Coordinate with the district for resources (PPE, oxygen, ambulances)
- Periodically review health system surge capacity, including beds, oxygen, human resources, and ambulances.
- Approve and monitor risk communication and community engagement strategies, including rumour management.
- Ensure protection and service continuity for vulnerable groups (elderly, persons with disabilities, dialysis patients, coastal populations).
- Conduct quarterly mock drills
- Monitor equity measures for vulnerable groups

Meeting Schedule:

Quarterly (normal times) | Weekly (outbreak alert) | Daily (pandemic phase)

9.2 Pandemic Response Workforce

To ensure a coordinated and timely response during a pandemic, a dedicated Pandemic Response Workforce shall be constituted at the LSG level. The workforce will function under the overall supervision of the One Health Committee and in close coordination with the health authorities. Team-based deployment will enable efficient surveillance, case management, quarantine and isolation management, logistics support, and risk communication. Each team shall have a clearly designated team leader, defined roles, and an identified pool of personnel to allow rapid activation, rotation of duties, and continuity of services during prolonged emergencies.

Team Name	Composition	Key Responsibilities	Team Leader
Surveillance and Contact Tracing Team	HI, JHI, JPHN, ASHAs and Volunteers	Case detection, contact listing, home visits, reporting	HI
Case Management Team	Doctors, Nurses, MLSP, Palliative Nurses	Patient care & referral	Doctor / Medical Officer
Quarantine & Isolation Team	DISTRICT staff, Volunteers	Facility management	JHI
Psychosocial support	Counsellors, Trained health care workers	Provide mental health support, counselling for patients and families, and address anxiety, stress, and stigma.	Counsellor
Logistics & supply chain Team	DISTRICT staff, Storekeepers, Drivers 3	Supplies & transport [PPE, medicines, oxygen, transport, waste management]	Ward Member
Communication Team	Ward members, Kudumbashree, Youth clubs, AWW workers and other self-help groups	IEC, community meetings, countering misinformation	Medical Officer / DMO
Transportation	KSRTC, educational institutional buses	Patient transport, staff transport, movement of supplies and emergency evacuation support	Health inspector
Media Surveillance	Medical Officers at the Institution level, along with the team District Medical Officer at the District	Patient transport, staff transport, movement of supplies and emergency evacuation support	Medical officer DMO
Intersectoral coordination and convergence	District Medical Officer at the District and Medical Officer at the LSG level	Coordinate activities between health, police, LSGD, education, and other departments for pandemic response.	DMO/DSO/ Medical Officer

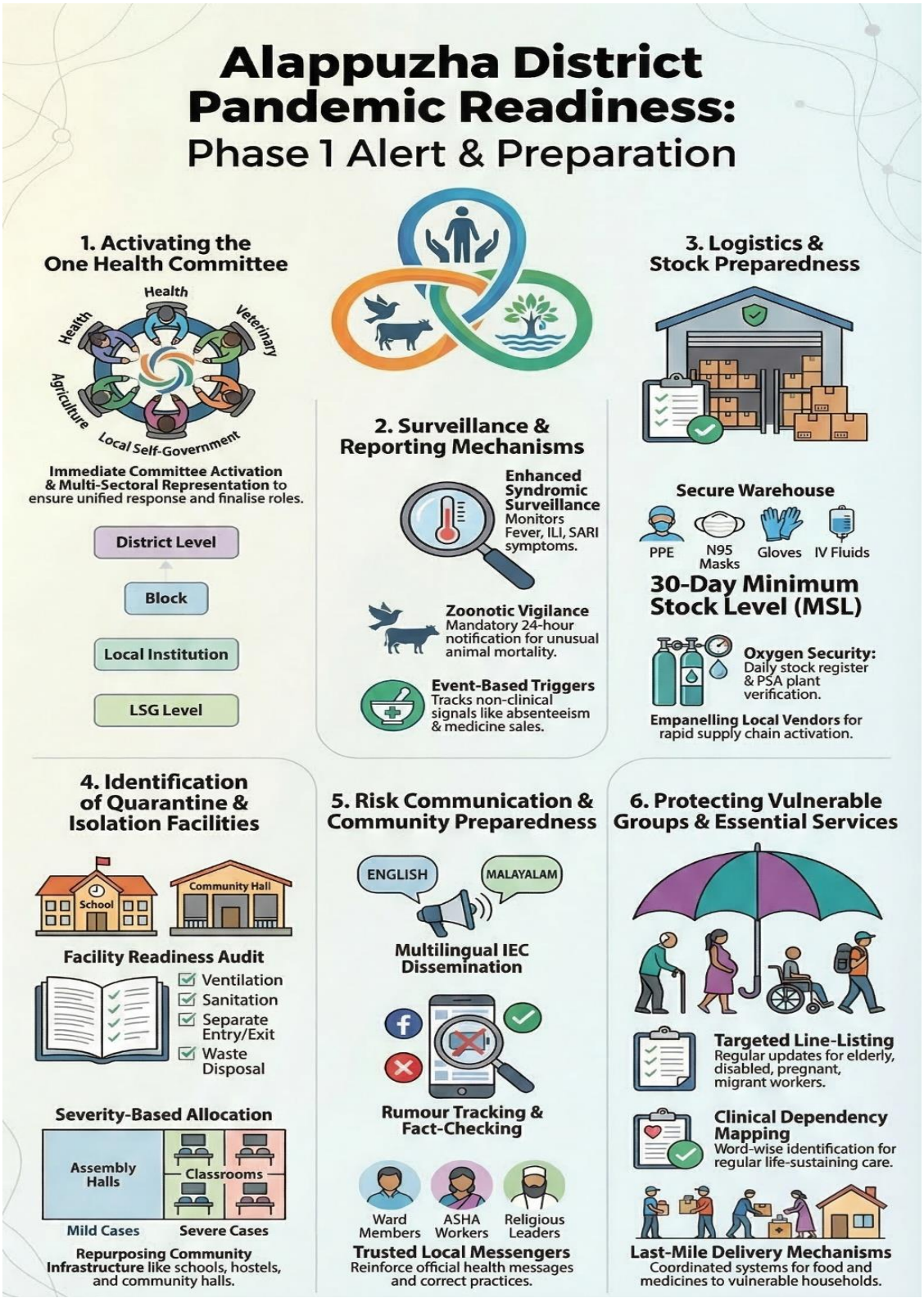
Team Name	Composition	Key Responsibilities	Team Leader
Collaborative surveillance	District Surveillance officer and PIED cell at the District HQ, and medical officer at the LSG	Coordinate activities between health, police, LSGD, education, and other departments for pandemic response.	DSO/Medical Officer

All teams shall be activated immediately upon outbreak alert or pandemic declaration and shall report daily to the LSG Incident Commander/Medical Officer, with consolidated reporting to the Block PHC. Duty rosters and alternate personnel shall be maintained to ensure uninterrupted services during staff shortages or prolonged response periods. Team composition and numbers may be revised based on the magnitude of the outbreak and availability of human resources.

Activities and Measures before and during the Pandemic

9.3 PHASE 1 - Alert / Preparation

- ➢ Activate One Health Committee
    - ○ Immediately activate the **One Health Committee** at the LSG level. Convene an **emergency meeting** to review risk assessment, roles, and preparedness. Ensure coordination between Health, Veterinary, Agriculture, Local Self-Government, and allied departments.
    - ○ Prepare and circulate a contact directory of all committee members and emergency services.
    - ○ Ensure documentation of decisions and action points with timelines.
    - ○ Escalation hierarchy to be finalised (LSG to Institution to Block to District).



➢ Surveillance and Reporting

Objective: To ensure early detection, timely reporting, and response to potential outbreaks through enhanced facility-, community-, and event-based surveillance

1. **Enhanced syndromic surveillance:**

   The LSGD shall initiate enhanced surveillance for priority syndromes and events such as:

   - Fever
   - Influenza-like illness (ILI)
   - Severe acute respiratory infection (SARI)
   - Unusual illness clusters (any unexpected increase in similar symptoms in a defined area or group)

   Data sources for surveillance:

   - Ward-wise household surveillance (through ASHAs/JPHNs/ward volunteers)
   - Outpatient surveillance from all government facilities (PHC, FHC, CHC, GH, etc.)
   - Private hospitals, clinics and labs

   Event-based triggers (to be monitored and reported):

   - School absenteeism above the usual pattern (to be monitored through the headmaster/PTA nodal person)
   - Sudden increase in pharmacy sales of fever/cough/cold medicines
   - Workplace illness clusters (multiple staff reporting similar symptoms within a short period)

2. **Zoonotic and animal health surveillance**

   - LSGD shall review reports of unusual animal deaths or suspected outbreaks in animals in coordination with the Veterinary Officer.
   - Any unusual mortality in poultry, pigs, cattle, companion animals, or wild birds/mammals shall be notified within 24 hours to the Veterinary Officer and the One Health Committee for joint investigation.

   Reporting Mechanism:

   All government and private health facilities, laboratories, and clinics within the LSGD shall report suspected and confirmed cases of notifiable diseases. Unusual clusters (schools, workplaces, neighbourhoods, events, institutions) shall be reported within 24 hours of detection for verification and field investigation.

- ➢ Logistics and Stock Preparedness
  - ○ Identify and empanel local vendors and define emergency procurement mechanisms in accordance with existing LSGD and Health Department norms.
  - ○ Prepare and maintain an essential logistics checklist covering medical supplies, consumables, and support equipment.
  - ○ Pre-identify secure storage locations for emergency stocks and ensure maintenance of stock registers with regular updating.
  - ○ Finalise emergency transport arrangements, including availability of vehicles and identified drivers for rapid deployment during alerts.
  - ○ Designate a Nodal Officer for Logistics to enable prompt decision-making, coordination, and communication during emergencies.
  - ○ Conduct rapid stock verification and ensure availability of minimum buffer stock, including:

    Identify critical gaps in logistics and immediately communicate requirements to the Block and District authorities for timely replenishment and support.
    Monitor expiry dates and stock rotation.
- ➢ Identification of Quarantine and Isolation Facilities
  - ○ Identify and list suitable buildings for quarantine and isolation (schools, hostels, community halls, etc.).
  - ○ Categorise cases as per the severity and allocate to appropriate facilities (for instance, severe cases to classrooms, mild cases to an assembly hall in case of a school).
  - ○ Facility readiness checklist needed (beds, toilets, ventilation, etc.
  - ○ Find an alternate site if the primary sites are not available or are not in use.
  - ○ Identify facility managers and support staff
  - ○ Prepare basic SOPs for:
    - ■ Admission and discharge
    - ■ Food, water, and sanitation
    - ■ Infection prevention and waste disposal
  - ○ Ensure availability of basic amenities: water, sanitation, electricity, ventilation, and waste disposal. Prepare a rapid activation plan for these facilities in case numbers increase.

- ➢ Risk Communication and Community Preparedness
    - Disseminate **e**arly warning messages on symptoms, preventive measures, and reporting mechanisms. Display IEC materials both in English and the local language in public places and ensure ward-level awareness.
    - Sensitize elected representatives and community leaders on preparedness measures.
    - Establish a rumour tracking and misinformation response mechanism to identify, verify, and promptly counter false or misleading information.
    - Engage trusted local persons (ward members, ASHA workers, religious leaders, teachers, community volunteers) to communicate official public health messages and reinforce correct practices.
    - Develop and deploy targeted IEC materials for:
        - Schools and educational institutions
        - Markets and commercial areas
        - Work sites and labour settings
    - Conduct community sensitisation meetings at the ward level to promote preventive behaviours, address concerns, and strengthen community participation in preparedness and response.
- ➢ Protection of Vulnerable Groups

  Vulnerable populations require priority protection through targeted line-listing, service continuity, and delivery mechanisms.

    - Prepare and regularly update **line-lists** of vulnerable populations, including:
        - Elderly persons living alone
        - Persons with disabilities
        - Pregnant women
        - Migrant workers

      The detailed line-lists shall be maintained as **Annexure ___** and updated periodically.

➢ Clinical Dependency Mapping

Develop ward-wise dependency and vulnerability maps to identify households requiring regular support during emergencies. Ensure continuity of essential health services for vulnerable groups, including.

- Dialysis services (facility mapping, transport arrangements, and scheduling)
- Continuity of treatment for TB, HIV, and other chronic conditions requiring uninterrupted medication
- Mental health and psychosocial support services

Establish **delivery mechanisms** for food, essential commodities, and medicines to vulnerable households through coordinated action involving ASHAs, JPHNs, Kudumbashree, volunteers, and local administration.

2. Ensuring Continuity of Essential Health Services

During pandemics or other public health emergencies, routine healthcare services must continue without interruption to prevent indirect health impacts. Disruptions in services such as dialysis, treatment of chronic diseases, maternal care, and mental health support can lead to severe complications and increased mortality. Therefore, district health authorities must implement strategies to maintain essential health services while simultaneously managing the outbreak response.

Continuity planning involves mapping health facilities, maintaining patient registries, ensuring medicine supply chains, arranging transportation for patients, and coordinating community support mechanisms through local self-governments and health workers.

A. Dialysis Services

During pandemics or other public health emergencies, routine healthcare services must continue without interruption to prevent indirect health impacts. Disruptions in services such as dialysis, treatment of chronic diseases, maternal care, and mental health support can lead to severe complications and increased mortality. Therefore, district health authorities must implement strategies to maintain essential health services while simultaneously managing the outbreak response.

Continuity planning involves mapping health facilities, maintaining patient registries, ensuring medicine supply chains, arranging transportation for patients, and coordinating community support mechanisms through local self-governments and health workers.

Component	Action
Facility Mapping	List all dialysis centres in the district and nearby districts
Patient Registry	Maintain a ward-wise list of dialysis patients.

Component	Action
Transport Arrangements	Panchayat-arranged ambulance/vehicle support during lockdowns
Appointment Scheduling	Coordinate slots with dialysis centres to avoid overcrowding.
Emergency Backup	Identify alternate facilities if the primary centre becomes unavailable

B. Continuity of Treatment for Chronic Diseases

Patients with chronic illnesses require uninterrupted access to medications, monitoring, and specialist care. Interruptions in treatment can worsen health outcomes and increase hospital admissions. District health authorities should ensure continuous drug supply, teleconsultation services, and community-based distribution of medicines through health workers.

Disease / Condition	Key Measures
TB	Ensure uninterrupted drug supply through DOTS providers and ASHAs
HIV	Coordinate ART drug refills through ART centres with multi-month dispensing.
Diabetes & Hypertension	Provide medicines through PHC/Sub-Centre distribution.
Cancer	Coordinate transport for chemotherapy/radiotherapy appointments.
Other chronic conditions	Maintain patient lists and medication refill schedules.

C. Mental Health and Psychosocial Support

Pandemics often lead to psychological stress, anxiety, social isolation, and stigma. Individuals such as elderly persons living alone, people with pre-existing mental illness, and families affected by disease outbreaks require additional psychosocial support. A coordinated mental health response helps strengthen community resilience and supports affected individuals.

Component	Action
Identification	List individuals with mental illness, the elderly living alone, and people under stress
Tele-Counselling	Establish helplines and online counselling services.
Community Support	Trained volunteers and counsellors provide psychosocial support.
Referral System	Link severe cases to district mental health services.

3. Delivery Mechanisms for Essential Supplies

During emergencies, vulnerable households must continue to receive essential supplies such as food, medicines, and hygiene products. Local self-governments and community

organisations play a crucial role in ensuring last-mile delivery through coordinated distribution networks.

Coordination Mechanism

Stakeholder	Key Responsibilities
ASHAs	Identify vulnerable households, monitor health needs, and coordinate medicine delivery.
JPHNs	Maintain vulnerability registers and supervise health service continuity.
Kudumbashree Units	Support food distribution, community kitchens, and supply chains.
Ward Volunteers	Deliver medicines and groceries to households.
Local Administration	Logistics coordination, vehicles, funding, and monitoring
Civil Society/NGOs	Additional volunteers and resource mobilisation

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Supply Delivery System

A structured supply delivery mechanism ensures that essential goods reach households efficiently during movement restrictions or lockdown situations.

Key Components of the Delivery System

1. Ward-Level Inventory

Maintain stock records of essential supplies such as medicines, food items, and hygiene products.

2. Household Request System
Requests for essential supplies may be made through:

Telephone helplines

WhatsApp-based helpdesks

Reporting through ASHA workers

3. Distribution Channels

Community kitchens for cooked food distribution

Public Distribution System (PDS) outlets for food grains

Medicine distribution through PHCs and health workers

4. Transport Support

Panchayat vehicles for supply movement

Volunteer transport networks using two-wheelers or local vehicles

5. Monitoring and Reporting

Daily reporting from ward volunteers and health workers

Periodic review by Panchayat Emergency Coordination Cells

Monitoring

4. Ward-Level Coordination Structure

Effective coordination at the ward level ensures that vulnerable populations receive timely assistance and essential services. Community participation plays a critical role in monitoring needs and supporting local response efforts.

Level	Responsibility
Panchayat	Overall coordination and resource allocation
Ward Committee	Monitoring vulnerable households
Health Workers	Service delivery and health monitoring
Volunteers	Logistics and home delivery
Community Groups	Support for food and psychosocial care

9.4 PHASE 2 - Active Response

1. **Case Identification and Contact Tracing**

   Case detection and contact tracing activities will be carried out in coordination with the Health authorities, following disease-specific SOPs and IDSP guidelines.

   Field Staff Involved

   - Health Inspector (HI)
   - Junior Health Inspector (JHI)
   - Junior Public Health Nurse (JPHN)
   - ASHAs and ASHA Supervisors

- Ward-level volunteers and Kudumbashree members (as required)

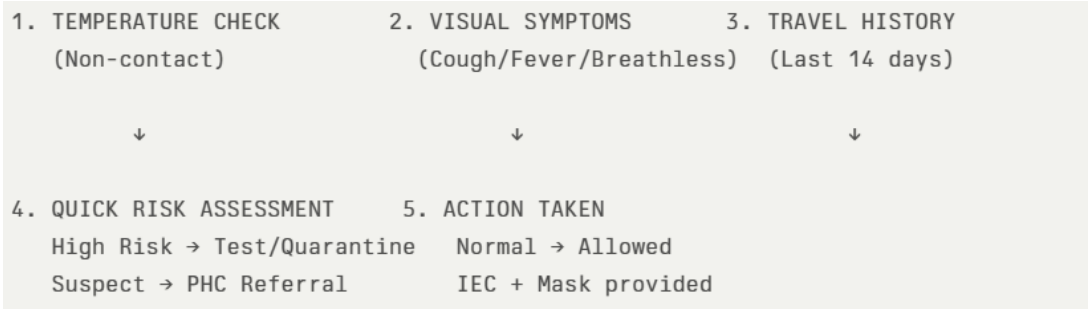
2. Screening Checkpoints

Screening checkpoints at high-traffic locations (transport hubs, markets, religious gatherings) for early detection of symptomatic travelers and crowd screening during outbreaks. Potential locations include bus stands, market entry points, and boat jetties, based on local context and risk assessment.

Screening activities will be carried out by trained personnel such as ASHAs, ward members, and volunteers, with support from Health Department staff. Necessary equipment including non-contact thermometers and appropriate PPE shall be ensured prior to activation.

Location	**Type (Bus stand/Jetty/Market/Railway)**	**Staff Deployed (ASHAs/Volunteers)**	**Screening Method**	**Reporting authority**
Bus stand	Transport hub	One JHI One ASHA One health Mentors	1.Swab Collection. 2. Blood smears collection (RDT) 3.Thermal Scanners	Surveillance Nodal Officer in control room
Market entry	Market	One JHI One ASHA Male health volunteers	1.Swab Collection. 2. Blood smears collection (RDT) 3.Thermal Scanners	Surveillance Nodal Officer in control room
Boat jetty	Water transport	One JHI One ASHA Male health volunteers	1.Swab Collection. 2. Blood smears collection (RDT) 3.Thermal Scanners	Surveillance Nodal Officer in control room

Standard Screening Protocol



The screening protocol shall include temperature screening, observation for visible symptoms, and inquiry regarding recent travel or exposure history. Individuals identified as suspects during screening shall be immediately referred to the nearest PHC/FHC for further evaluation, testing, and appropriate action as per prevailing guidelines.

9.4.1 Pandemic Control Room

The Pandemic Control Room (PCR) serves as the central nerve center for real-time coordination, data aggregation, decision support, and communication during outbreaks. It consolidates information from all LSGD teams, health facilities and community sources to enable rapid response decisions.

Control Room Infrastructure and Location

Primary Location: Collectorate, Alappuzha

Backup Location: DMO Office, Alappuzha

Health System Control Room Framework

The PCR is organized into **seven functional pillars** to ensure no aspect of the response is overlooked:

1. *Rapid Response Team (RRT)*
    - Provides immediate intervention during emergencies, clusters, and field alerts.
    - Coordinates urgent actions such as case investigation, contact tracing, isolation, and inter-facility referrals.
2. *Data Management & Analytics Team*
    - Collects, validates, and manages key health system indicators (cases, tests, beds, HR, supplies).
    - Analyses data trends, generates projections, and supports evidence-based decision-making for local authorities.
3. *Human Resource Deployment Team*
    - Allocates healthcare staff efficiently based on workload and need
    - Ensures adequate and equitable workforce distribution across facilities
4. *Laboratory Surveillance Team*
    - Oversees diagnostic testing coordination, sample transport, and timely reporting of results.
    - Monitors lab indicators (testing volume, positivity rate, turnaround time) for early detection of outbreaks
    -

2. *Vaccination Cell (If required)*
    - Plans and executes vaccination campaigns, including micro-planning and session scheduling.
    - Tracks coverage, identifies gaps, and coordinates corrective actions with field teams and outreach services.
3. *Infrastructure & Patient Occupancy Team*
    - Monitors facility capacity, earmarked beds, oxygen and critical care resources across all linked facilities.
    - Ensures optimal patient distribution and referral management using updated bed status and resource data.
4. *Policy Execution & Strategy Team*
    - Implements health policies, SoPs, and government orders within the LSGD jurisdiction.
    - Develops local strategies, reviews compliance, and recommends modifications based on field feedback and data.

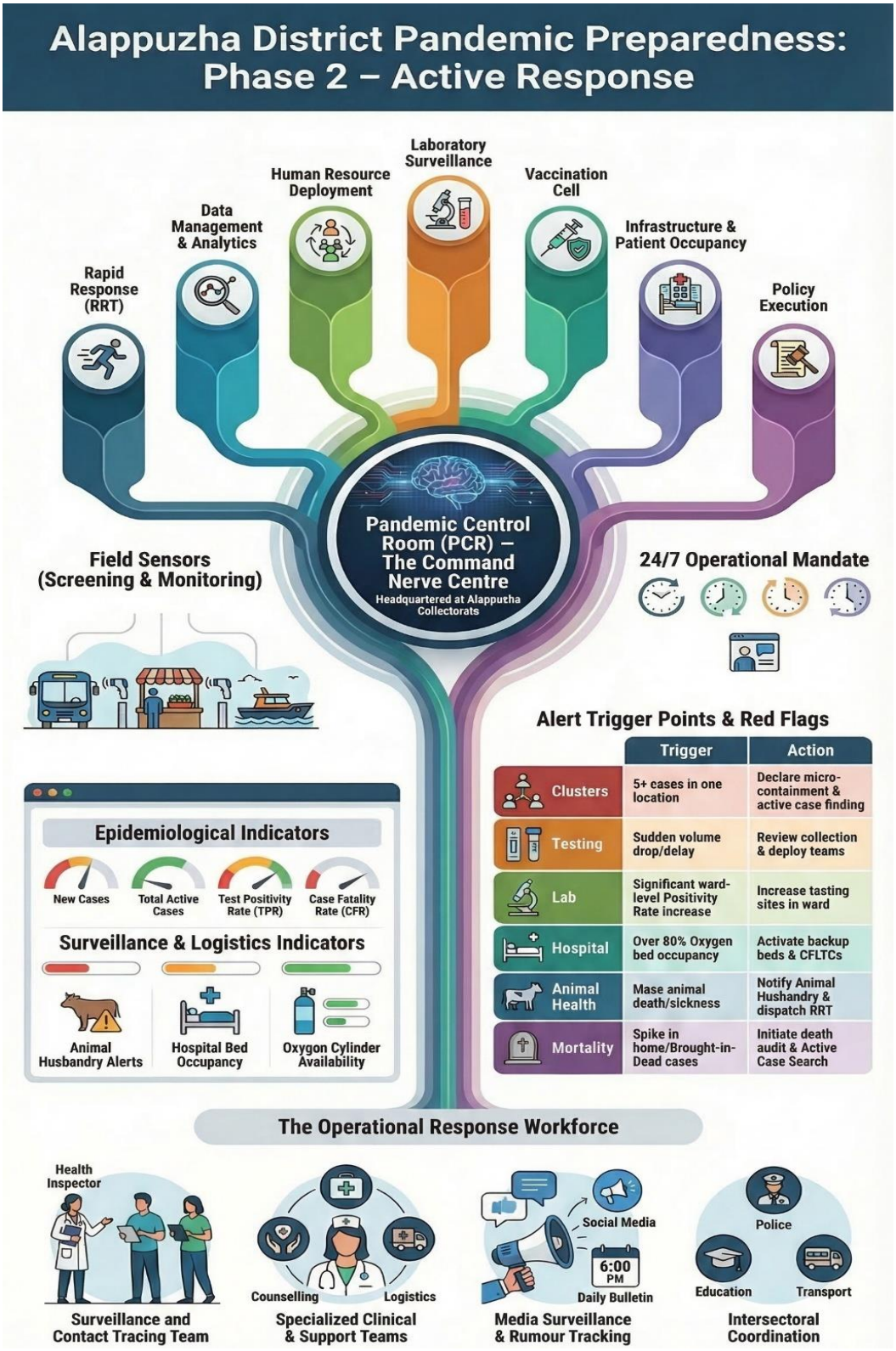
SOP for alert escalation/trigger point with mapping of responsibilities.

- The Control Room shall be staffed with a designated In-Charge, data entry personnel, and communication staff with clearly defined roles and shift arrangements.
- It shall maintain updated records on daily monitoring indicators, including new cases, persons under active quarantine, and hospital bed occupancy.
- All reports and situation updates shall be shared daily with the Block and District Surveillance Unit.
- The Control Room shall act as a single point of contact for coordination with response teams, health institutions, and other departments.
- Contact details of the Control Room shall be widely communicated to field staff and stakeholders during activation.

CONTROL ROOM MANDATES

- The control room will be operational 24*7 managed by floor managers in rotation.
- Control room access is authorised only to those engaged in control room activities.
- Identity proof is mandatory

- In and out movement is written in the logbook
- Food items are not permitted inside the control room
- Team members of different groups have to work in their assigned areas
- Review meetings will be held in the mornings and evenings
- Minimum two members from all groups will participate in review meetings
- Critical appraisal of group activity will be done in the meetings
- The documentation team will record minutes of all meetings
- Decisions taken in the meeting will be communicated to the respective groups
- The implementation status of the decisions taken will be monitored
- Emergency meetings will be informed by phone to the respective teams by the documentation team
- The single window communication system will be operated by the documentation team
- All sub-teams communicate with the control room via their own email ID.
- All communication between the teams were coordinated through the control room.
- All communications are well documented.
- Advances in information technology are well utilised for communication
- Communication to the media will be done only through the media management team
- Health bulletin release at 6 pm
- A departmental coordination meeting at 6 pm
- Press briefing at 7 pm



ACTIVITIES OF VARIOUS TEAMS

Effective pandemic response requires coordinated actions by multiple operational teams at the district level. Each team performs specific functions such as surveillance, communication, logistics management, infrastructure development, training, and human resource management.

Clearly defining the activities and responsibilities of each team helps ensure efficient coordination, timely decision-making, and effective outbreak control.

The following sections describe the key roles and activities of various response teams involved in pandemic preparedness and response.

Surveillance team

Hospital surveillance

- The condition of the Symptomatic patients admitted to isolation wards of hospitals will be closely scrutinised, and reports will be updated to the surveillance team.
- Analysis of the reports

Field surveillance

- Those patients discharged from hospitals will be monitored by field workers in their corresponding PHC area.
- Those asymptomatic travellers/contacts in home isolation will also be monitored for 28 days by field workers, and reports will be sent to the DSO.

Lab surveillance

- The DSO and District nodal officers entrusted with sample collection will inform the lab surveillance team before sample collection.
- Sample requisition forms will be scrutinised before sending to the National Institute of Virology, Pune/Alappuzha/designated labs.
- Liaison with districts and the sample collection point
- Support and supervise Surveillance activities at the district level
- Establishing a support system with SMO (WHO), a mechanism for strengthening the IDSP disease surveillance system.
- Daily LSG-wise monitoring at the state level
- Detailed data monitoring at the IDSP district unit.
- Identifying areas for inter-sectoral action & steps for the same.

24 X 7 Call Centre management team

A dedicated call centre helps address public queries, provide health guidance, and coordinate emergency responses during pandemics.

To Set-Up

A control room call centre should be set up in the state as well as the district. The call centre is set up with 3 laptops and 3 mobile/landline telephone facilities. Each Call Centre Operator is assigned both a telephone and a computer. One outgoing mobile facility is also available for answering pending calls. Two WhatsApp numbers are also available in the disaster control management room.

Depending on the configuration of the call centre, each workstation has the following items:

- Headset for hands-free answering.
- Reference materials (issued upon activation of call centre operations);
- Item to be used to request assistance from the supervisor (Paper and pen/pencil, register, etc.)
- All phone/computer banks are set up in proximity to power, telephone, and data sockets/ports.
- Call Centre Supervisors are to utilise a sign-in/sign-out sheet to keep track of Call Centre Operators.

MANDATES FOR CALL CENTRE

1. Maintain discipline and professional conduct.
2. Ensure effective time management.
3. Operate the call centre 24 hours a day.
4. Maintain documentation of all call centre activities.
5. Submit daily consolidated reports by 4:30 PM.
6. Ensure sufficient communication connectivity.
7. Maintain linkage with the DISHA health helpline system.
8. Respond to medical, logistical, and administrative queries related to health issues.
9. Maintain records of second and third-level call referrals**.**

- DISHA Calls …….

HR management

Human resource management is primarily coordinated at the district level to ensure adequate staffing during public health emergencies.

Key responsibilities include:

- Maintaining updated records of the health workforce distribution within the district.
- Identifying gaps in human resources at healthcare facilities.

- Coordinating the redistribution of staff based on workload and patient volume.
- Communicating additional HR requirements to the state if necessary.
- Monitoring staffing levels in isolation facilities and nodal centres.
- Compiling daily HR data to ensure no shortage of personnel in critical areas.

Training and awareness generation

Continuous training and awareness programs are essential for ensuring preparedness among healthcare workers, volunteers, and community members.

Key Responsibilities

1. The district should train all the necessary cohorts in a timely manner, and the data should be compiled at the state level. The state team has the responsibility for preparing the training materials according to the daily needs being discussed in the control room meetings. These training materials should be vetted by a group of experts and should be disseminated via control room mail id to all concerned (districts, agencies, groups, IMA, IAP, etc.)
2. Identify target groups in the government and private sectors requiring training.
3. Develop segment-specific training modules.
4. Prepare training manuals and guidelines.
5. Disseminate IEC materials, audio-visual aids, and training resources.
6. Prepare frequently asked questions (FAQ) and responses.
7. Conduct online or telephonic training sessions for district officials and health workers.
8. Train call centre personnel on communication protocols.
9. Develop a team of master trainers.
10. Organise demonstration sessions for infection prevention and response measures.

Material management team

Material management should be done at the institution level using all possible resources under the control of the superintendent; however, there might be a higher degree of needs arising in certain situations. The district and state have a mechanism of supporting these institutions according to the arising needs. The needs and activities should be compiled in the districts and coordinated with state team/KMSCL. The state team is expected to compile the activities and challenges on a day-to-day basis and present at the control cell meeting, including the following details.

Key Responsibilities

- The primary responsibilities of the material management team are:
- Prepare the list of items required at the Hospital for providing health care
- Monitor inventory position institution-wise
- Ensure the supply chain management of healthcare and other items required

Infrastructure (isolation ward and facilities) management team

This team ensures that adequate infrastructure and isolation facilities are available for managing infectious disease patients.

Key Activities

- Identify an isolation place in each district for at least 50 patients
- Ensure all the required things are in the isolation ward of these facilities
- Set up a dedicated team in each district
- Train the dedicated team and other health functionaries
- Ensure that the strict protocol of infection control is followed in each district
- Identify spatially all the field units and fever clinics arrangements done in all districts
- Ensure and compile the referral of contacts from the field/call centres /DISHA to isolation facilities in the district
- Verify and compile the needs for additional isolation places if the number is increasing in each district
- The data should be collected in the following format at the district level and compiled at the state level

Monitoring Format

- **DATE** **INSTITUION**

Sl No	Indicator
1	Whether the isolation ward is identified and all the required things are set up
2	Whether the specific teams have been identified and trained Number of Doctors Number of Paramedical staff

	Number of Attendants
3	Whether to stand by the team identified and trained Number of Doctors Number of Paramedical Staff Number of Attendants
4	Duty roster prepared
5	Whether all inventory is ensured
6	Number of beds
7	Number of Patients admitted and their details
8	Infection control measures taken Details
9	Bio-medical waste disposal mechanism from the isolation ward
10	Institution requirements details

Media Surveillance team

The media surveillance team monitors print, electronic, and social media for information related to disease outbreaks, public perception, and misinformation.

Key Responsibilities

- Monitor print, visual, and social media platforms for outbreak-related information.
- Identify misinformation or rumours circulating in the media.
- Validate information and take corrective actions where necessary.
- Address public concerns through official communication channels.
- Coordinate with district authorities to respond to logistical or human resource issues reported in the media.
- Compile media surveillance reports at the district level.

Media Monitoring Reporting Format

Sl. no:	Description
1	Whether any misinformation was noticed
2	Misinformation noticed Give details in brief
3	Whether reported to take action and case booked
4	Cases booked today
5	Total cases Booked till today

Operational Response Teams and Monitoring Framework

During a pandemic, coordinated action by specialised operational teams is essential to ensure efficient surveillance, response, logistics management, communication, and healthcare service delivery. At the district level, multiple thematic teams shall function under the supervision of the District Pandemic Control Room, with defined roles, responsibilities, and reporting mechanisms.

Each team will submit daily reports to the control room to facilitate timely decision-making and resource allocation.

1. Sample Tracing Team

The Sample Tracing Team is responsible for monitoring sample collection, transportation, laboratory submission, and reporting of test results.

Key Responsibilities

1. Monitor samples sent to designated laboratories such as the National Institute of Virology (NIV), Pune, NIV Alappuzha, and other approved laboratories.
2. Coordinate with Public Health laboratories and district surveillance units regarding sample submission.
3. Assist districts in sample transportation, documentation, and reporting procedures.
4. Ensure correct completion of laboratory requisition formats before dispatch.
5. Track sample testing status and ensure timely receipt of reports.
6. Inform relevant authorities regarding laboratory results.

Reporting

All sample test results shall be reported daily to:

- Superintendent, Medical College Hospital
- District Collector
- Director of Health Services (DHS)
- Director of Medical Education (DME)
- Principal Secretary, Health and Family Welfare

Sl No	Description
1	Total Sample Collected Blood Urine Throat Swab
2	Samples sent to Alpy NIV Blood Urine Throat swab
3	Samples sent to Manipal Laboratory Blood Urine Throat swab CSF
4	Samples sent to NIV Pune Blood Urine Throat Swab CSF

IEC/BCC and Media Management Team

This team is responsible for developing and disseminating information, education, and communication materials to inform the public and reduce anxiety during a pandemic.

Key Responsibilities

- Develop IEC materials related to preventive and promotive health practices.
- Disseminate accurate information through the Public Relations Department (PRD), television channels, All India Radio (AIR), newspapers, and social media.
- Ensure timely updating of official websites with health advisories.
- Prepare daily media briefings and press notes.
- Coordinate press conferences as directed by authorities.
- Act as media spokesperson for the Directorate of Health Services.

Documentation Team

The documentation team ensures systematic recording and communication of decisions, guidelines, and activities during the pandemic response.

Key Responsibilities

- Document meetings conducted by the Minister, Principal Secretary, and the Directorate of Health Services.
- Communicate decisions and guidelines to district authorities and public health institutions.
- Ensure dissemination of SOPs and operational guidelines to relevant teams.
- Coordinate website and social media updates.
- Compile daily activity reports from all operational teams

Private Hospital Surveillance Team

Private healthcare institutions play an important role in disease detection and patient management. This team monitors surveillance data from private hospitals.

Key Responsibilities

- Collect and compile data on patients visiting private hospitals.

- Identify suspected cases or contacts who may have been missed by the public health system.
- Maintain strong coordination with private hospital associations.
- Integrate private hospital reporting into district surveillance systems.

Reporting Format

Number of persons who visited private hospitals
Suspected cases/contacts identified

Expert Study Coordination Team

This team coordinates visits by external expert groups and research institutions.

Key Responsibilities

- Facilitate visits of expert agencies after verifying institutional approvals.
- Ensure submission of request letters to the **Principal Secretary, Health and Family Welfare**.
- Confirm logistical arrangements for visiting experts.
- Provide expert teams with situational information.
- Review the feasibility and implications of expert recommendations.

Transportation and Ambulance Management Team

Efficient patient transport is essential for timely referral and treatment.

Key Responsibilities

- Maintain data on ambulance availability, drivers, and training status.
- Ensure continuous **24×7 availability of ambulance services**.
- Coordinate the transport of patients from home isolation to healthcare facilities.
- Monitor post-transport sanitisation of vehicles.
- Compile district-level transport data.

Interdepartmental Coordination Team

Pandemic response requires collaboration across multiple government departments.

Key Responsibilities

- Maintain coordination with departments such as:
    - Local Self Government Department (LSGD)
    - Animal Husbandry
    - Tourism
    - Police
    - Kudumbashree Mission
    - Suchitwa Mission
- Facilitate multi-sectoral response activities.
- Address operational issues requiring interdepartmental collaboration.

Community-Level Volunteer Coordination Team

Community volunteers provide essential support for monitoring quarantine and supporting affected families.

Key Responsibilities

- Monitor field-level activities related to quarantine and community support.
- Coordinate with Kudumbashree and ASHA programme representatives.
- Manage food kit preparation and distribution for households under quarantine.
- Maintain records of contacts and quarantine households.

Reporting Format

Sl No	Description
1	Number of Contacts under Home Quarantine
2	Number of Kits prepared and provided to Homes where contact is in quarantine
3	Kits stock

4	Kits distribution
5	Kits balance

Psychological Support Team

Pandemics often cause psychological distress, anxiety, and trauma among affected individuals.

Key Responsibilities

- Establish district and field teams for psychological support.
- Provide counselling services to individuals in quarantine or isolation.
- Identify cases of post-traumatic stress and mental health issues.
- Coordinate referrals to mental health professionals where required.
- Present daily reports during control room meetings.

Data Management Team

The Data Management Team ensures the timely compilation, analysis, and dissemination of pandemic data.

Key Responsibilities

- Use digital tools such as **Google Sheets and other MIS platforms** to compile data from operational teams.
- Develop district-specific data sheets with automatic consolidation features.
- Ensure dynamic updating of surveillance and logistics data.
- Provide technical support to districts through NHM MIS managers.
- Share consolidated data with state authorities, including the **State Mission Director and Principal Secretary**.

Finance and Budgeting Team

The Finance and Budgeting Team manages financial planning and resource allocation during the pandemic response.

Key Responsibilities

- Identify funding requirements for various response activities.
- Mobilise financial resources from government funds and emergency allocations.
- Coordinate financial approvals and administrative sanctions.
- Ensure timely release of funds to avoid delays in pandemic response activities.

District Pandemic Response Teams

Sl no	Name of team
	Overall coordination
1	Surveillance team
2	Call Centre management team.
3	HR management
4	Training and awareness generation
5	Material management team
6	Infrastructure (isolation ward and facilities) management team
7	Sample Tracing team
8	Media Surveillance team
9	IEC/BCC and Media Management team
10	Documentation team
11	Private hospital surveillance team
12	Expert study coordination team
13	Transportation and ambulance management team
14	Interdepartmental and coordination team
15	Community-level volunteer coordination team
16	Psychological support team
17	Data Compilation
18	Budget and financing

9.4.2 Daily Monitoring Indicators

To ensure timely decision-making and effective response, the following key indicators shall be monitored and updated daily by the Pandemic Control Room:

Epidemiological Indicators:

New cases reported today, Total active cases, Test Positivity Rate (TPR), Case Fatality Rate (CFR)

Surveillance Indicators:

Persons under home quarantine, High-risk contacts identified, Fever, ILI, SARI or other symptoms (syndromic surges), Travellers (symptomatic or high-risk arrivals), Animal husbandry surveillance (zoonotic alerts, unusual animal deaths, poultry/bird flu signals), Mortality surveillance (excess deaths, unexplained fatalities, verbal autopsy reports)

Logistics and Infrastructure Indicators:

Hospital / CFLTC beds occupied, Oxygen cylinders/concentrators available, Ambulances on standby

Alert Findings

The following table outlines category-specific **trigger points (red flags)** from surveillance indicators and corresponding immediate actions for the Pandemic Control Room. These enable rapid response to alert findings like testing anomalies, positive cases exceeding thresholds, clusters, and WGS reports.

Category	Trigger Point (Red Flag)	Immediate Action
Clusters	**Geographical or facility-based:** 5+ cases linked to one location (office, school, street).	Declare a micro-containment zone; perimeter control and active case finding.
Testing	Sudden drop in testing volume/delay in reporting / unusual testing trends	Review the sample collection process, address lab bottlenecks, deploy additional testing teams, and notify the District Lab.
Lab	Test Positivity rate increases	Increase testing sites in that ward.
Hospital	>80% Oxygen bed occupancy	Activate backup/CFLTC beds.
Travel	Cluster of cases from a single flight/train or high-risk arrival group.	Trace all passengers in adjacent seats; implement mandatory institutional quarantine.
Animal	Mass poultry/wildlife death or unusual sickness	Notify Animal Husbandry, sample the area, and dispatch RRT for environmental sampling and zoonotic check.
Mortality	Sudden spike in home deaths or brought-in-dead (BID) cases	Audit the deaths and the Active Case Search drive

Category	Trigger Point (Red Flag)	Immediate Action
Additional investigations like Whole Genome Sequencing (WGS)	Detection of a **Variant of Concern (VOC) or Variant of Interest (VOI)**	Implement strict micro-containment; update clinical protocols to match variant severity.

1. Communication of Public Health Information

A Community Communication Hub shall be established to ensure the timely, accurate, and consistent dissemination of information during a pandemic. The Hub will function under the coordination of the president and act as the nodal point for public communication, risk messaging, and community engagement. **It will support the dissemination of official advisories, promote preventive behaviours, address rumours and misinformation, and ensure that messages reach all sections of the population through trusted local channels and leaders.**

Key communicators

Channel	Responsible Person
District-level announcements	District Collector
Social media	District Mass Media Wing
Local Cable TV/Radio	Public Relations Department (PRD) Officer

- All messages disseminated through the Hub shall align with advisories issued by the Health Department and District authorities.

- Community leaders shall be sensitised to support behaviour change, reduce stigma, and counter misinformation.

- Special efforts shall be made to reach vulnerable and hard-to-reach populations using locally appropriate communication methods.

- **Rumour Tracking:** A designated **Media Surveillance Team** at the district level will monitor local social media platforms and messaging groups to identify misinformation. Verified clarifications will be issued promptly through official district communication channels.

9.5 Coordination with District/State Authorities & Other Organisations

Effective coordination with Block, District, and State authorities is essential to ensure timely reporting, technical guidance, and uninterrupted supply of essential resources during a pandemic. The LSG shall establish clear communication channels, designate responsible officers, and adhere to prescribed reporting timelines to support coordinated public health action and efficient resource mobilisation.

Reporting Schedule and Protocols:

To Whom	What to Report	Frequency	Nodal Person
Directorate of Health Services (State)	District Situation Report (cases, testing, beds, deaths)	Daily	District Medical Officer
State Surveillance Unit (IDSP)	Outbreaks/Clusters/Unusual Events (>5 cases in the same ward)	Immediate	District Surveillance Officer
Animal Husbandry Department	Animal health events/Zoonotic alerts	As required	District Veterinary Officer
State Cell	Emergency alerts and inter-sectoral events	Immediate	District Collector

9.6 Supply Chain Coordination

The LSG shall coordinate closely with Block, District, and State authorities (KMSCL) to ensure uninterrupted availability of essential goods, medical supplies, and logistics during a pandemic. Supply requirements shall be assessed regularly based on case load and communicated promptly to the appropriate authorities for timely replenishment.

Key Points:

- Maintain updated contact details of District and Block nodal officers for health logistics, oxygen supply, ambulances, and essential medicines.
- Submit timely indent requests for PPE, testing kits, medicines, oxygen, and other critical supplies through prescribed channels.

- Monitor stock levels at LSGD facilities, quarantine/isolation centres, and field teams through daily stock registers and dispensing logs to prevent shortages.
- Coordinate with District authorities, Karunya/Neethi medical shops, and local purchase committees for funds allocation and emergency procurement.
- Ensure regular monitoring of dispensing registers at all facilities to track usage, expiry, and pilferage—shortages being a perennial issue requiring proactive weekly audits.
- Activate surge procurement protocols during high caseloads, leveraging local purchase powers under LSGD funds alongside state supplies.

Resource Inventory and Contacts

Resource Category	Source (District/State/Private)
PPE Kits/Masks/Gloves	KMSCL
PPE Kits/Masks/Gloves	Local Vendors
Oxygen Cylinders/Concentrators	KMSCL
Medicines/Antivirals	KMSCL
Medicines/Antivirals	Neethi Shops
Test Kits (RTPCR/Rapid)	KMSCL

9.7 Collaboration with NGOs, PPP, and CSR

To augment government efforts during a pandemic, the LSG shall collaborate with NGOs, voluntary organisations, and private sector partners through public–private partnerships and Corporate Social Responsibility (CSR) initiatives, in coordination with District authorities.

Key Points:

- Engage NGOs and community-based organisations for community outreach, awareness, and support to vulnerable populations.
- Leverage CSR support for procurement of medical equipment, PPE, oxygen concentrators, food kits, and sanitation materials, as permitted.
- Ensure all collaborations align with government guidelines and are routed through approved administrative and financial procedures.
- Maintain transparency and documentation for all external support received and utilised.

Organization	Type	Support Offered	Contact Person
Youth Clubs/Student Unions	Youth Clubs	Yes	Maheen K A Aravind

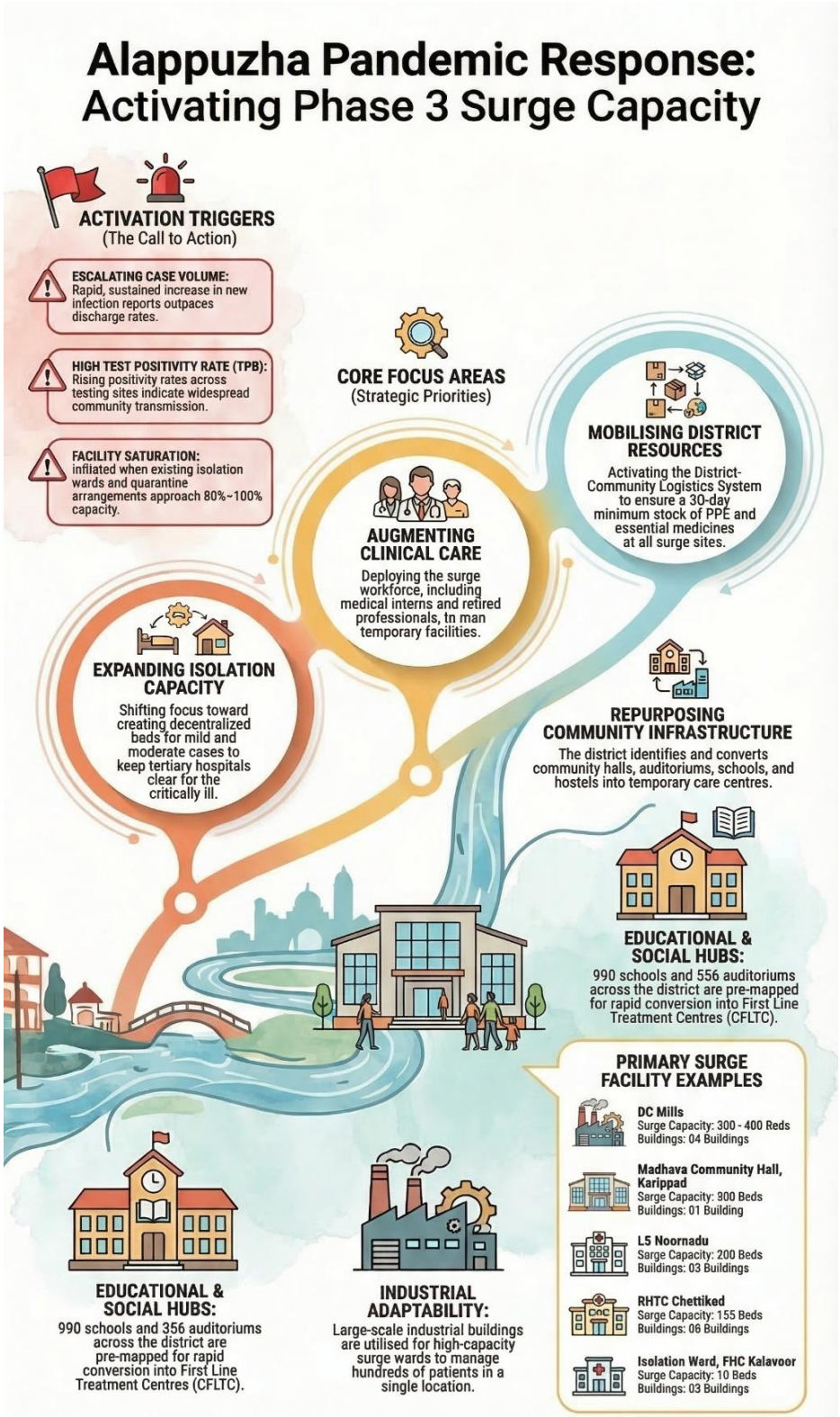
9.8 PHASE 3 - Surge Capacity

Phase 3 is activated when there is a rapid increase in cases, high test positivity rates, or when existing health facilities and quarantine arrangements approach saturation. The focus of this phase is to expand isolation capacity, augment clinical care services, and mobilise additional resources through district and state support mechanisms.

Conversion of Community Facilities

To manage increased case load, the district shall activate additional isolation facilities by repurposing identified community infrastructure such as community halls, auditoriums, schools, hostels, or other suitable buildings.

Name of facility	**Facility Type**	**No. of Buildings**	**Surge Capacity (Beds)**	**Nodal Person**
Isolation Ward, FHC Kalavoor	**FHC Kalavoor**	03	10	Dr Anu
RHTC Chettikad	**Upgraded CHC**	06	155	Dr Vipin K Ravi
Dc Mills	**Industrial building**	04	300-400	Dr Melvin Gonzalvus
Madhava Community Hall, Karippad	**Community hall**	01	300	Dr Arun Jacob, HPD Supnd
Leprosy Sanitorium Noornadu	**Specialty Hospital**	03 functional buildings	200	Dr.Vidhya,



9.9 Recovery and rehabilitation phase

The recovery and rehabilitation phase begins once the immediate public health emergency is controlled and transmission is reduced to manageable levels. This phase focuses on restoring

essential services, addressing long-term health and socio-economic impacts, and strengthening systems to prevent or better manage future pandemics.

9.9.1 Recovery

Recovery refers to the gradual return of communities and systems to normal functioning while continuing public health vigilance. It involves phased withdrawal of emergency measures, reopening of services, and reintegration of disrupted health and social systems. Recovery activities should be evidence-based, inclusive, and aligned with national and state guidelines to ensure sustainability and resilience.

Damage and Impact Assessment

Before long-term rebuilding can happen, the dust must be settled, and the immediate risks managed. Damage and impact assessment are a critical step to understand the full extent of the pandemic's effects on health systems, communities, and livelihoods. This assessment evaluates disruptions to healthcare services, availability of infrastructure and workforce, morbidity and mortality patterns, and socio-economic consequences such as loss of income, education disruption, and food insecurity. The findings inform evidence-based planning, prioritisation of interventions, and optimal allocation of resources during the recovery phase.

Restoration of Health Services

Recovery requires moving beyond emergency trauma care. This sub-phase focuses on reopening primary care clinics, restarting routine Immunisation programs, and ensuring that patients with chronic conditions (like diabetes or hypertension) can once again access life-sustaining medications and check-ups.

Environmental Cleanup and Sanitation

Post-disaster environments are often breeding grounds for secondary health crises. Cleanup efforts focus on removing debris, managing hazardous waste, and restoring water and sewage systems. Ensuring a "clean slate" is biologically necessary to prevent the spread of waterborne and vector-borne diseases.

9.9.2 Rehabilitation

Rehabilitation focuses on addressing the long-term physical, social, and economic impacts of the pandemic on affected individuals and communities. This includes medical rehabilitation for post-infection complications, nutritional support for vulnerable groups, and social assistance for households affected by illness, disability, or loss of livelihood. Rehabilitation efforts should promote reintegration into education, employment, and community life, with special attention to marginalised and high-risk populations.

Physical and Livelihood Rehabilitation

For those left with lasting injuries, rehabilitation involves providing physical therapy and assistive devices. Simultaneously, Livelihood Restoration addresses the economic health of the community; without the ability to earn an income, individuals cannot sustain their own long-

term health and nutrition. Support for small businesses, informal workers, self-help groups, and skill development initiatives is essential to promote economic resilience and long-term recovery.

Psychosocial and Mental Health Support

The trauma of a disaster often outlasts the physical damage. Providing psychological first aid and long-term mental health counselling is vital for community cohesion. This support helps individuals process grief and anxiety, reducing the long-term societal burden of PTSD.

Community Engagement and Confidence Building

Recovery fails if the public does not trust the systems being rebuilt. Active communication and involving local leaders in the decision-making process help rebuild social capital. This ensures that the population feels safe returning to schools, workplaces, and hospitals. Active involvement of community leaders, local self-governments, and civil society organisations strengthens community ownership, promotes adherence to public health measures, and enhances preparedness for future emergencies.

9.9.3 Vigilance and Disease Surveillance

Disease surveillance during the recovery phase ensures early detection of resurgence, secondary outbreaks, or emerging variants. Surveillance systems should continue monitoring communicable disease trends, post-pandemic complications, and unusual health events. Strengthening laboratory capacity, sentinel surveillance, and community-based reporting mechanisms enables a timely response and supports sustained public health security.

9.9.4 System Strengthening and Future Preparedness

The final stage of recovery is an intellectual exercise in "Building Back Better," turning the tragedy of the past into the safety of the future.

Documentation and After-Action Review (AAR)

Once the immediate pressure has subsided, stakeholders must conduct a formal review of the response. This involves a candid look at what worked, what failed, and where communication broke down. These Lessons Learned are then transformed into Best Practices.

Policy Revision and Health System Strengthening

The ultimate goal of recovery is to ensure the next crisis is less damaging. This involves updating emergency protocols, revising public health laws, and investing in more durable infrastructure. Through Research and data analysis, the health system is "hardened" against future threats, moving the community from a state of vulnerability to a state of permanent readiness.

Research

Research during the recovery phase is essential to generate evidence on the long-term health, social, and economic impacts of pandemics. Operational, clinical, and policy research should

examine the effectiveness of response and recovery interventions, community behaviours, and innovations in service delivery and surveillance. Research findings should inform future preparedness strategies and public health decision-making.


Beyond the Crisis: Alappuzha's Roadmap for Recovery and Resilience
SECTION 1: CORE CONCEPTS OF RECOVERY
Comprehensive Damage and Impact Assessment: Conduct multi-sectoral audit on healthcare disruptions, infrastructure damage, workforce availability, and income loss.
Restoration of Essential Health Services: Shift focus to routine primary care, including maternal health, immunisation, and chronic condition treatment.
Environmental Cleanup and Sanitation: restore debris, manage hazardous medical waste, and restore water anwage systems to prevent secondary outoreaks.
SECTION 2: HUMAN-CENTRIC REHABILITATION
Physical and Livellhood Restoration: Provide physical therapy, assistive devices, and support small businesses/self-help groups (e.g., Kodumbashree) to restore economic health.
Psychosocial and Mental Health Support: Deploy district mental health teams for psychological first aid and long-term counselling to reduce PTSD. grief, and anxiety burdes, for schools anxiety burden.
SECTION 3: SYSTEM STRENGTHENING (BUILDING BACK BETTER)
The After-Action Review (AAR): Conduct formal, caneld review with stakeholders to document successes, failures, and communication breakdowns.
Policy Revision and Infrastructure Hardening: Update protocols and public health laws based on research and data to "harden" the health system against future variants.
Continuous Vigilance and Surveillance: Maintain enhanced monitoring for resurgance or emerging variants through laboratory capacity and community reporting.
Comprehensive Damage and Impact Assessment: Conduct multi-sectoral audit on healthcare snill disruptions, infrastructure, and chronic condition, treatment, health.
Psychosocial and Mental Health Support: Deploy district mental health health teams for psychological first aid and long-term counseiling to reduce PTSD, grief, and anxiety burden.
Community Engagement and Confidence Building: Involve local leaders/L3GIs in decision-making to rebuild social capital and ensure public feels safe returning to schools and hospitals.
THE 5-POINT RECOVERY & REHABILITATION MASTER CHECKLIST
1. Assessment & Infrastructure Restoration: Audit damage to digital and physical infrastructure, verify utility access (ooter/electncity), and Banaiion supply chains to routine procorement.
2. Clinical & Public Health Continuity: Resume routine services, clear patient backings for elective surgeries, and launch surveillance for post disaster infectious diseases.
3. Human-Centric Rehabilitation: Establish long-term mental health clinics, provale vocational training for displaced workers, and create digital citizen feedback platforms.
4. Administrative & System Strengthening: Finalise financial auditsl'insurance claime, compils 'Leseoes Loamed' reports, and revise SOPS based on reat-world data.
5. Confidence & Policy: Launch public information campaigns for service safety, advconts for 'Buiid Back Batter' funding, and conduct mandatory mental health screenings for health workers.

9.9.5 Recovery & Rehabilitation Master Checklist

1. Assessment & Infrastructure Restoration

[ ] Conduct Multi-Sectoral Impact Assessment: Complete a full audit of damage to health facilities, equipment, and digital infrastructure.

[ ] Restore Essential Utilities: Verify that hospitals and clinics have stable access to clean water, electricity, and medical gas.

[ ] Re-establish Supply Chains: Transition from emergency "push" systems to routine procurement for medications and consumables.

[ ] Environmental Safety Check: Clear all hazardous debris and certify that sanitation/waste management systems are fully functional.

2. Clinical & Public Health Continuity

[ ] Resume Primary Care: Transition staff from emergency roles back to routine services (Maternal health, NCDs, Immunisations).

[ ] Launch Recovery-Phase Surveillance: Implement enhanced monitoring for infectious diseases common in post-disaster settings.

[ ] Clear Patient Backlogs: Identify and schedule patients whose elective surgeries or treatments were delayed during the crisis.

[ ] Environmental Health Audit: Test local water sources and food supply chains for contamination post-cleanup.

3. Human-Centric Rehabilitation

[ ] Deploy Psychosocial Support: Establish long-term mental health clinics and peer support groups for survivors and first responders.

[ ] Physical Rehab Integration: Provide specialised care, prosthetics, and occupational therapy for those with permanent injuries.

[ ] Livelihood Support Coordination: Partner with NGOs to provide micro-grants or vocational training to displaced healthcare workers or patients.

[ ] Community Feedback Loop: Create a "Town Hall" or digital platform for citizens to report gaps in the recovery process.

4. Administrative & System Strengthening

[ ] Initiate After-Action Review (AAR): Schedule debriefing sessions with all stakeholders to document successes and failures.

[ ] Financial Reconciliation: Audit emergency spending and finalise insurance claims or international aid reports.

[ ] Knowledge Management: Compile a "Lessons Learned" report and share it with regional and national health authorities.

[ ] Update Preparedness Plans: Revise Standard Operating Procedures (SOPs) based on real-world data gathered during the crisis.

[ ] Research & Development: Identify areas where the response was slowed by a lack of data and initiate studies to close those gaps.

5. Confidence & Policy

[ ] Launch Public Information Campaign: Use local media to inform the public that services have resumed and are safe to use.

[ ] Legislative Advocacy: Present findings to policymakers to secure funding for "Build Back Better" infrastructure projects.

[ ] Staff Wellness Check: Conduct mandatory mental health screenings for healthcare workers to prevent burnout and PTSD.

Recovery Component	District Administration / District Health System	Block / Taluk Level	Panchayat / Municipality	Ward Level / Community
Damage & Impact Assessment	Lead district-wide impact assessment; compile morbidity, mortality, economic and health system data; coordinate with departments.	Consolidate block-level data from health institutions and panchayats	Conduct local assessments of affected families, health services disruption	Ward volunteers and ASHA workers identify affected households and vulnerable persons
Restoration of Health Services	Restore hospital services, diagnostics, and elective procedures; ensure medicine supply.	Coordinate PHCs/CHCs for resumption of services.	Support the reopening of local health facilities; mobilise the community for Immunisation and routine care.	Inform the community about service availability; assist patient follow-up.
Rehabilitation of the Affected Population	Implement social welfare packages, disability support, and compensation schemes.	Identify eligible beneficiaries through block offices	Facilitate access to welfare schemes for affected families	Community volunteers assist households in accessing benefits

Recovery Component	District Administration / District Health System	Block / Taluk Level	Panchayat / Municipality	Ward Level / Community
Psychosocial & Mental Health Support	Deploy district mental health programme teams; establish counselling services.	Organise outreach clinics and tele-counselling through block health offices.	Coordinate community counselling sessions and support groups	ASHA, teachers and volunteers identify persons needing support
Disease Surveillance During Recovery	Strengthen integrated disease surveillance; monitor resurgence or new outbreaks.	Ensure reporting from PHCs, labs, and hospitals	Support reporting of unusual illness clusters	Community-based surveillance through ASHAs and volunteers
Environmental Cleanup & Sanitation	Issue biomedical waste and sanitation guidelines; monitor environmental safety.	Supervise sanitation drives and waste management systems	Conduct sanitation campaigns; ensure water safety and waste disposal	Community participation in cleanliness drives and WASH practices
Livelihood Restoration	Coordinate economic recovery programmes; link with employment and industry departments.	Support the implementation of livelihood schemes	Facilitate SHGs, local enterprises, and employment initiatives	Community support networks for vulnerable families
Community Engagement & Confidence Building	District-wide risk communication and transparency initiatives	Support community awareness programmes	Organise community meetings and local engagement campaigns	Volunteers and local leaders disseminate information and rebuild trust
Documentation & After-Action Review	Lead formal after-action review; compile district response report	Provide operational feedback and data	Document local experiences and challenges	Share community-level experiences and feedback
Lessons Learned & Best Practices	Publish district best practices; share with state authorities	Identify effective local strategies	Promote successful local initiatives	Community volunteers highlight effective practices
Health System Strengthening	Invest in infrastructure, workforce training, labs, and digital systems	Strengthen PHC/CHC capacity	Improve local health infrastructure support	Community participation in health programs
Policy Revision & Preparedness Enhancement	Update district pandemic preparedness plan	Provide operational recommendations	Integrate preparedness into	Community awareness and

Recovery Component	District Administration / District Health System	Block / Taluk Level	Panchayat / Municipality	Ward Level / Community
			local development plans	preparedness training
Research	Facilitate collaboration with research institutions and public health agencies.	Support field studies and data collection	Assist research teams in community access	Community participation in surveys and studies

10. CONCLUSION

Pandemic preparedness at the district level is a critical component of strengthening the overall public health system and ensuring a timely response to emerging health threats. This Pandemic Preparedness Plan for the district provides a comprehensive framework that integrates surveillance, healthcare infrastructure, laboratory capacity, logistics management, community engagement, and governance mechanisms to effectively detect, respond to, and manage public health emergencies.

The plan emphasises a multi-sectoral and coordinated approach, involving the Health Department, District Administration, Local Self-Government Institutions, disaster management authorities, and community organisations. By strengthening surveillance systems, laboratory networks, healthcare facilities, and supply chain management, the district aims to ensure early detection of outbreaks and rapid containment measures. The establishment of clear communication channels, emergency logistics arrangements, and structured response mechanisms further enhances the district's readiness to manage pandemic situations.

Community participation plays a vital role in pandemic preparedness and response. The involvement of community health workers, volunteers, Kudumbashree networks, youth groups, and local institutions ensures effective grassroots-level surveillance, awareness generation, and support for vulnerable populations. Strengthening community-based surveillance and risk communication will enable early identification of health events and promote public cooperation during emergencies. The plan also highlights the importance of maintaining adequate stocks of essential medicines, personal protective equipment, oxygen supplies, laboratory consumables, and other critical resources. Coordination with industrial partners, private healthcare providers, and supply chain networks will help ensure the uninterrupted availability of essential supplies during periods of increased demand. Effective governance and coordination mechanisms, from the district level to the ward level, are essential for implementing the preparedness plan. The roles and responsibilities of various departments and committees have been clearly defined to facilitate timely decision-making, efficient resource allocation, and coordinated response actions during a pandemic.

Pandemic preparedness is not a one-time effort but a continuous process that requires regular review, training, simulation exercises, and updating of protocols based on emerging risks and lessons learned from previous public health emergencies. Continuous strengthening of surveillance systems, laboratory capacity, health workforce training, and community engagement will improve the district's resilience against future health threats.

In conclusion, this district-level Pandemic Preparedness Plan serves as a strategic guide for coordinated action, resource mobilisation, and public health response during pandemics and other health emergencies. Through sustained collaboration among government agencies, healthcare institutions, and communities, the district will be better equipped to protect public health, minimise the impact of outbreaks, and ensure the safety and well-being of its population.

11. RECOMMENDATIONS

Strengthening Healthcare Infrastructure

- Establish a primary health response unit within the Panchayat with trained staff.
- Ensure availability of basic medical supplies (masks, sanitisers, PPE kits, oxygen cylinders).
- Create tie-ups with nearby hospitals for emergency referral and transport.

. Community Awareness & Education

- Conduct regular awareness campaigns on hygiene, vaccination, and preventive measures.
- Use local communication channels (community radio, WhatsApp groups, notice boards) to spread verified information.
- Train volunteers to act as health ambassadors in each ward.

Emergency Response & Coordination

- Form a Pandemic Preparedness Committee at the Panchayat level, including health workers, ward members, and NGOs.
- Develop a clear action plan for lockdowns, quarantine, and distribution of essentials.
- Maintain a database of vulnerable groups (elderly, differently abled, chronically ill) for targeted support.

Supply Chain & Food Security

- Identify and support local suppliers and farmers to ensure an uninterrupted food supply.

- Create community kitchens during emergencies to serve vulnerable populations.
- Stockpile essential commodities in Panchayat-run outlets for crisis periods.

Digital Preparedness

- Promote digital platforms for telemedicine consultations.
- Use the Panchayat's website/social media for real-time updates on health advisories.
- Encourage online grievance redressal to reduce crowding in offices.

Training & Capacity Building

- Organise mock drills for pandemic response in schools, offices, and public spaces.
- Train Panchayat staff and volunteers in first aid, infection control, and crowd management.
- Collaborate with NGOs and health departments for capacity-building workshops.

Long-Term Resilience

- Integrate pandemic preparedness into the Panchayat Development Plan.
- Allocate a dedicated budget for health emergencies.
- Encourage community participation in planning and monitoring preparedness measures.

12. MOCKDRILL SCENARIOS

Mock drills are an essential component of pandemic preparedness as they help test the operational readiness of health systems, administrative structures, and community response mechanisms. These exercises simulate real-life pandemic situations and allow authorities to assess the effectiveness of response plans, identify operational gaps, and strengthen coordination among stakeholders.

Mock drills will be conducted periodically at the **district, block, and ward levels** involving health departments, local self-government institutions, emergency services, and community volunteers.

12.1 Communication

Effective communication plays a critical role during mock drills to ensure the timely dissemination of information, coordination among teams, and community awareness.

Communication Strategies

- **Ward-level Rapid Response Teams (RRTs), Grama Sabhas, and vulnerability groups** will actively participate in preparing and executing pandemic response plans to identify local issues related to prevention, preparedness, response, and recovery.
- **Local community leaders** will be involved in awareness and response activities to strengthen trust and community participation.
- **Special trained informers** within vulnerable groups will help identify suspected cases and report early warning signals.
- **Multilingual workers** will facilitate communication with migrant workers and linguistically diverse populations.
- **NGOs and Resident Associations** will assist in awareness generation, resource mobilisation, and community support.
- A **simple reporting mechanism for the public** will be promoted using platforms such as the **Integrated Health Information Platform (IHIP)** or mobile applications, enabling quick reporting through messages or snapshot-based alerts.
- **Home isolation monitoring teams** consisting of trained community volunteers will support health workers in monitoring individuals under home isolation.

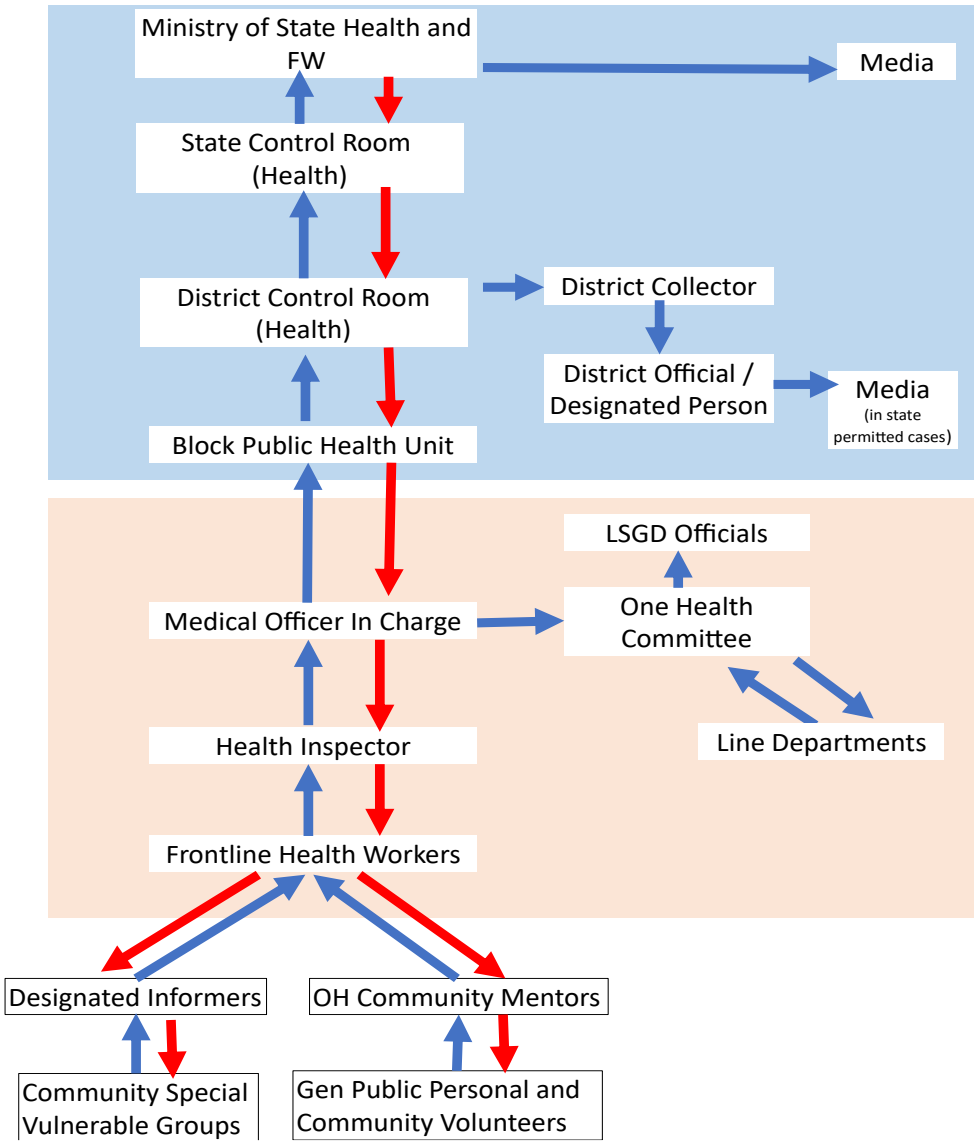
These communication mechanisms will ensure that accurate information reaches the community quickly while minimising misinformation.

Benefits of Community-Based Communication

- **Sustainability:** Locally driven solutions are more likely to be sustained as communities take ownership of preparedness measures.
- **Faster Response:** Community networks enable quicker identification of cases and immediate reporting to health authorities.
- **Trust and Collaboration:** Active engagement builds trust between communities, local administration, and health agencies, improving cooperation during emergencies.

COMMUNCATION PLAN FLOW CHART

LSGD >>>>> INSTITUTION >>>>>>>



12.2 Pandemic Preparedness Capacity Building & Training Plan

Background & Rationale

Pandemics pose serious threats to public health, safety, and socio-economic stability. Effective preparedness requires skilled human resources across multiple sectors. Capacity building ensures that frontline workers, administrators, and community volunteers are equipped with the knowledge and skills necessary to respond promptly and effectively to pandemic situations.

District-level preparedness plays a crucial role in early detection, containment, and mitigation of disease spread.

Objectives of Capacity Building

- Strengthen the readiness of the health and allied sectors.
- Improve early detection, reporting, and response.
- Ensure inter-departmental coordination.
- Protect frontline workers and the community.
- Maintain essential services during pandemics.

Target Groups for Training

Health Sector (Government & Private)

- Doctors (all specialties)
- Nurses & paramedical staff
- Laboratory technicians
- Public health staff
- ASHA workers & JPHNs
- Private hospital staff

Police & Emergency Services

- Kerala Police & Traffic Police
- Home Guards
- Fire & Rescue Services
- Ambulance drivers & EMTs
- Roles: crowd control, quarantine enforcement, emergency response

Local Administration & Governance

- District administration
- Municipalities & Panchayats
- Revenue Department
- Public Works Department
- Roles: logistics, containment zones, essential services

Education & Community Groups

- School & college teachers
- Students & NSS/NCC volunteers
- Kudumbashree units
- Community-based organisations
- Religious & community leaders

Modes and Methods of Training

Training programs will be conducted through multiple formats to ensure maximum participation and effectiveness.

- Classroom/workshop-based training
- On-site/hands-on training
- Online & virtual training modules
- Simulation exercises & mock drills
- Peer learning & cascade training
- Awareness campaigns
- Online media and social groups

Training Methods

- Lectures & interactive sessions
- Demonstrations & skill stations
- Case studies & role plays
- Table-top exercises
- IEC material & SOP dissemination

Key Training Topics

General Topics

- Disease surveillance & reporting
- Infection prevention & control (IPC)
- Use of personal protective equipment (PPE)
- Sample collection & transport
- Risk communication & community engagement

Advanced & Sector-Specific Topics

- Hospital surge capacity management
- Quarantine & isolation management
- Psychosocial care & stress management
- Waste management during pandemics

- Law & order and ethical issues

Institutional & Resource Support

- District Medical Office
- Kerala Health Services
- State Disaster Management Authority
- Medical colleges & training institutes
- Police Training College

Monitoring & Evaluation

- Pre- and post-training assessment
- Feedback mechanisms
- Periodic refresher trainings
- Mock drill evaluations
- Documentation & reporting

Training Schedule (by Quarter)

	Jan-Mar	**Apr-Jun**	**Jul-Sept**	**Oct-Dec**
Climate events	Cool	Hot	Rainy, Flood	Cold
Disease events	ILI	HRI, Hep A	Avian, Dengue	Lepto
Training for HCWs	✓	✓	✓	✓
Training for Public	✓	✓	✓	✓
Budgeting	✓	✓	✓	✓
Monitoring & E	✓	✓	✓	✓

- The schedule aligns training and preparedness activities with seasonal climate and disease patterns.

Expected Outcomes

Implementation of the capacity-building and training plan is expected to achieve the following outcomes:

- Improved district-level preparedness and response capability
- A well-trained and confident workforce across sectors
- Stronger inter-sectoral coordination and collaboration
- Reduced morbidity and mortality during pandemic situations
- Enhanced community awareness and participation in disease prevention

Conclusion

Pandemic preparedness requires a comprehensive and coordinated approach involving government institutions, healthcare systems, and communities. Effective communication mechanisms, structured training programs, and periodic mock drills are essential components in strengthening the capacity of districts to respond to public health emergencies.

Active community engagement, continuous capacity building, and systematic monitoring will enhance resilience and ensure that health systems remain prepared to manage future pandemics efficiently. By fostering collaboration across sectors and empowering local communities, districts can build a sustainable and responsive public health preparedness framework capable of minimising the impact of pandemics on population health and well-being.

ANNEXURE

IMPORTANT PHONE NUMBERS

Phone numbers and particulars of persons responsible for providing guidance, assistance, and support for pandemic preparedness operations may be provided here in a manner that allows easy reference at a glance. The information recorded here could be exhibited elsewhere during emergencies. LSG institutions shall give special attention to collect and record the above data of persons and institutions who/which are supposed to give technical and coordination support to reduce the impact of the pandemic.

Departments	Officer in charge (designation)	Contact Details
Department of Revenue & Disaster Mangement	Deputy Collector (General) & Additional District Magistrate	1. Tel: 0477-2251549 2. Mob: 94474-95001
	Deputy Collector (DM)	Mob : 8547610047
Fire & Rescue	Asst. Divisional Officer	0477-2230303, Mob:9497920114
Police	Superintendent of Police	0477-2239326, Mob:9497996982
Ground Water	Executive Engineer	2266688, Mob:9847934959
Water Authority	Executive Engineer	2242372, Mob:8547638224
Irrigation(Major)	Executive Engineer	Tel: 2252212, Mob:9447124479
Irrigation(Minor)	Executive Engineer	Tel: 2452336, Mob:9446594986
Health	District Medical officer	2252329,Mob:9497309565
Supply Office	District Supply Officer	0477-2251674, Mob : 9446439975
Animal Husbandry	District Animal Husbandry Officer	0477-2252431, Mob:9447347614
KSEB	Chief Engineer	0477-2242789, Mob:9446008283,9961228309
Agriculture	Principal Agricultural Officer	0477-2251403, Mob:9447304033
Fisheries	Assistant Director	Ph:0477-2251103, 0477-2252367 Mob: 9496007028

MAJOR TEACHING INSTITUTES IN ALAPPUZHA

ENGINEERING COLLEGES

College of Engineering & Management, Punnapra
College of Engineering, Chengannur
College of Engineering, Cherthala
Archana College of Engineering, Alappuzha
K.M.E.A. Engineering College, Edathala
K.R. Gouri Amma College of Engineering for Women, Alappuzha
Mount Zion College of Engineering for Women, Chengannur
Sree Buddha College of Engineering, Alappuzha
Sree Vellappally Natesan College of Engineering, Alappuzha

MEDICAL COLLEGE

T.D. Medical College, Alleppy

TEACHERS TRAINING INSTITUTES

Govt. Pre-Primary Teacher Training Institute, Alleppey
Kerala University College of Teacher Education, Alleppey
Kerala University College of Teacher Education, kayakulam
Kerala University College of Teacher Education, Mavelikara
Jameela Beevi Memorial Centre for Teacher Education, Alappuzha
Peet Memorial Training College, Alappuzha
Porukara College of Education, Champakulam
Sree Narayana Pre-Primary Teacher Training Institute , Pullickal
Sree Narayana Training College, Cherathala

Sl.No.	Name	Degree
1	Sree Narayana College , Cherthala	Arts and science
2	Amrita School of Arts and Science	Arts and science
3	Assumption College	Arts and science
4	AWH Special College	Arts and science
5	Bharata Mata College	Arts and science
6	Bishop Moore College	Arts and science
7	Christian Collage Chengannur	Arts and science
8	Christian College	Arts and science
9	Christian College	Arts and science
10	Christian College, Chengannur	Arts and science
11	Cochin College	Arts and science
12	College of Applied Science, Nadapuram	Arts and science
13	Dayapuram Arts and Science College for Women	Arts and science
14	Dr. Ambedkar Arts and Science College	Arts and science
15	Government College Madappally	Arts and science
16	Govinda Pai Memorial Government College	Arts and science
17	K.N.M Government Arts & Science College, Kanjiramkulam	Arts and science
18	Milad-E-Sherief Memorial College	Arts and science
19	N S S Nair Service Society College, Malappuram	Arts and science
20	N.S.S College,	Arts and science
21	PTM College of Education	Arts and science
22	Sanatana Dharma College	Arts and science
23	SN College	Arts and science
24	Sree Ayyappa College	Arts and science
25	Sree Narayana College, chengannur	Arts and science
26	St. Joseph's College for Women, Alappuzha	Arts and science

MAJOR FESTIVALS IN ALAPPUZHA

Festivals	Tourist places
1. Chettikulangarabharani	1.Pathiramanal
2. Ambalappuzha Temple festival	2.R-Block
3.Arthunkal Perunnal	3.Karumadikuttan
4. ChampakkulamMoolam Boat Race	4. Kumarakodi
5.Nehru Trophy Boat Race	5.Saradha Mandiram, Mavelikkara
6. NeelamperoorPadayani	6.Krishnapuram Palace
7. EdathuaPerunnal	7.Alappuzha Beach
8.Mullakkal Chirappu	8.Sea View Park
9. MannarasalaAyilyam	

HAZARD PROFILE OF ALAPPUZHA

TABLE 19: HAZARD PROFILE OF THE DISTRICT

Sl.No.	Classification	Types of Disaster
1.	Naturally Triggered/ Weather Related	Flood
		Coastal Tsunami, Coastal erosion Kallakadal, Storm surge
		Thunder and lightning
		Cyclone
		DroughtSalt water intrusion
2.	Geological	Earthquakes
		Landslides
3.	Biological	Epidemics
		Cattle epidemics
		Food poisoning
		Pest attack, Bird Flew
4.	Anthropogenically/ Technologically triggered	Industrial explosions Petro-chemical transportation accidents
		Fireworks accidents
		Road accidents
		Human triggered forest fire
		Stampede
		Short circuit and related fire
		Building collapse
		Boat capsizing Tourism related drowning
		rail accidents

List of electricity stations and transmission lines

1. Edappon 220 kV substation. (Transformers-7 Nos)
2. Chengannur 110 kV Substation. (Transformers-3 Nos)
3. Mavelikkara 110 kV Substation. (Transformers-5 Nos)
4. Kayamkulam 110 kV Substation. (Transformers-3 Nos)
5. Nangiarkulangara 66 kV Substation. (Transformers-3 Nos)
6. Karuvatta 66 Kv substation. (Transformers-2 Nos)
7. Mannar 33 kV substation. (Transformers-2 Nos)
8. Kattanam 33 kV Substation. (Transformers-2 Nos)
9. Vallikunnam 33 kV Substation. (Transformers-1 Nos)
10. Punnapra 110 kV Substation. (Upgradation in progress) (Transformers-6 Nos)
11. Edathwa 110 kV Substation. (Transformers-3 Nos)
12. Thakazhy 33 kV Substation. (Transformers-2 Nos)

13. Alappuzha 66 kV Substation. (Transformers-3 Nos)
14. Kuttanad 66 kV Substation. (Transformers-2 Nos)
15. Pathirappally 66 kV Substation. (Transformers-2 Nos)
16. S L Puram 110 kV Substation. (Transformers-2Nos)
17. Cherthala 66 kV Substation. (Transformers-3 Nos)
18. Thykkattussery 110 kV Substation. (Transformers-3 Nos)
19. Kuthiyathodu 33 kV Substation. (Transformers-3 Nos)
20. Aroor 110 kV Substation. (Transformers-5 Nos)
21. Chellanam 110 kV Substation. (Transformers-2Nos)

GOVERNMENT AMBULANCES IN THE DISTRICT

Sl. No.	Vehicle No.	Name of Owner / Agency	Contact Details
1	KL-01-U-8806	THQH Haripad	Ph: 04792412765
2	KL-04-W-2912	CHC Thuravoor	Ph: 04782562490
3	KL-01-Y-9186	CHC Chambakulam	Ph: 04772736034
4.	KL-01-Z-4228	THQH Kayamkulam	Ph: 04792447274
5.	KL-01-AD-4504	THQH Cherthala	Ph: 04782812693 04782821411
6.	KL-01-M-2259	THQH Chenganoor	Ph: 04792458267
7.	KL-01-AE-4200	DH Mavelikkara	Ph: 04792303394
8.	KL-01-BA-1991	GH Alappuzha	Ph: 04772253325
9.	KL-01-BA-864	THQH Kayamkulam	Ph: 04792447274
10.	KL-31-D-9260	DH Mavelikkara	Ph: 04792303394
11.	KL-04-AA-3388	W & C Hospital, Alappuzha	Ph: 04772251151
12.	KL-04-AA-3399	RHTC Chettikad	Ph: 04772248680
13.	KL-04-BA-1333	PHC Arattuppuzha	Ph: 0479 2488201

PRIVATE AMBULANCE SERVICES IN THE DISTRICT

Sl. No.	Village	Ambulance Services
1	Arattupuzha	PHC Arattupuzha
2	Muthukulam	108, (Govt)
3	Krishnapuram	1. Swanthanam Charitable Trust 2. Girish Charitable Trust
4	Harippad	Georgekutty Ambulance Service- 3 Nos,
5	Karthikappally	Madhava Hos, Harippad-, Revathy Charitable Society Mahadevikkad-
6	Kumarapuram	HUDA Trust Hospital Ambulance
7	Thrikkunnappuzha	108 Ambulance, CHC Thrikkunnappuzha
8	Kannamangalam	BSM Hos
9	Mavelikkara	Sreekantapuram Hospital, Kandiyoor Seva Bharathy Mavelikkara, Indian red cross, mavelikkara
10	Thazhakkara	Kunnam Service Co-operative bank
11	Thamarakulam	Neelambari Medical Mission
12	Bharanikkavu	Mariyan ambulance service
13	Nooranad	Josco Hospital Edappon KCm Hospital Panayamkulam
14	Palamel	Athikattukulangara Hos
15	Chunakkara	paliyetive care unit,chunakkara Panchayath
16	Chengannur	1. Fire & Rescue Station Chengannur 2. Taluk Hos Chengannur 3. mammen memmorial Hos,Chengannur
17	Mulakkuzha	Century Hospital,Mulakkuzha
18	Thakazhy	Lourda matha Hsptal,Thakazhy
19	Champakkulam	108-govt hsptal Champakkulam
20	Edathua	CHC Edathua Maha Jubilie Hospital Edathua
21	Pulinkunnu	Taluk HQ hospital

Sl. No.	Village	Ambulance Services
22	Kavalam	P.Z Joseph Foundation Charitable Trust,kavalam
23	Veliyanad	108 at PHC Veliyanadu
24	Ampalappuzha	PHC Ambalappuzha,108
25	Pathirappally	PHC Chettikkad
26	Mullakkal	General Hospital
27	Alappuzha West	W&C hospital alappy ESI hospital beachward alappy
28	Aryad South	Joy
29	Cherthala North	108 Ambulance service Sree Vennkitaswara Taluk HQ Hospital
30	cherthala south	St.Sebastian Visitation Hospital,Arthungal
31	Kokkothamangalam	KVM Hospital Cherthala SNM Hspital X ray Jn-
32	Kadakkarappally	Devi Santhwana ambulance,Ayikkadu
33	Aroor	Aroor Gramapanchayath
34	Kuthiyathodu	1.Taluk Hospital, Thuravoor (Thuravoor Drivers clinic Madhavan)
35	Thuravoor South	99610155588, Reg No.A.1004/2011
36	Pallippuram	Seva bharathy ,Pallippuram-
37	Thykkattusserry	CHC Thykattussery-
38	Panavally	pMc poochakkal
39	Thanneermukkam North	Green Gardens Hospital,Mathilakom-

MOBILE MORTUARY SERVICES

Sl. No	Village	Mobile Mortuary (Name & contact details)
1	Harippad	Georgekutty-1nos
2	karthikappally	Mahadeva Hos, Harippad-0479-2412282
3	Nooranad	Josco Hospital Edappon-0479-2374982
4	Champakkulam	Prince, Nedumudy
5	Edathua	Ooramvelilil mobile mortuary service (Prop: John jacob)-0477-2213937
6	Kavalam	P.Z Joseph Foundation Charitable Trust, Kavalam
7	Ampalappuzha	TDMC Vandanam
8	Mullakkal	Sahrudhaya hospital-0477-2252269
9	Kokkothamangalam	KVM Hospital Cherthala 0478-2812228
10	Kuthiyathodu	Taluk Hospital,Thuravoor
11	Pallippuram	St. mary's family unit, pallippuram-0478-2552248

MORTUARY SERVICES

SI No.	Village	Mortuary(Name & contact details)
1	Kayamkulam	Govt.Hospital, Kayamkulam-0479-2447274
2	Krishnapuram	J J mortuary services
3	Harippad	Madhava hospital, Thalamparambu South, Dr.Venugopal 0479-2412232
4	Thazhakkara	Dist Hos ,Mavelikkara
5	Kattanam	St. Thomas Mission hos-04793012345
6	Nooranad	Josco Hospital Edappon-0479-2374982
7	Mulakkuzha	Century Hospital, Mulakkuzha-0479-2468880
8	Edathua	Mahajubilie Hospital Edathua-0477-2214151
9	Ampalappuzha	TDMC Vandanam
10	Mullakkal	General Hospital -0477-2253324
11	Cherthala North	Taluk H.Q Hospital
12	Kokkothamangalam	KVM Hospital Cherthala 0478-2812228
13	Kuthiyathodu	Taluk Hospital, Thuravoor

HOMEO DISPENSARIES

Sl. No.	Taluk	Village	Name of Institution	No. of Beds	No. of Doctors
1	Ambalappuzha	Ambalappuzha	Government Homoeo Dispensary Ambalappuzha North	Nil	1
2	Karthikappally		G.H.D .Arattupuzha	Nil	1
3	Mavelikkara	Chennithala Thriperumthara	G.H.D Chennithala	Nil	1
4	Karthikappally	Cheppad	G.H.D Cheppad	Nil	1
5	Karthikappally	Cheruthana	G.H.D Cheruthana	Nil	1
6	Karthikappally	Chingoli	G.H.D Chingoli	Nil	1
7	Karthikappally	Puthuppalli	G.H.D Devikulangara	Nil	1
8	Karthikappally	Haripad	G.H.D Haripad	Nil	1
9	Kuttanadu		G.H.D Kainady	Nil	1
10	Karthikappally	Kandalloor	G.H.D Kandalloor	Nil	1
11	Cherthala	Kanjikkuzhy	G.H.D Kanjikkuzhy	Nil	1
12	Karthikappally	Karthikappally	G.H.D Karthikappally	Nil	1
13	Karthikappally	Karuvatta	G.H.D Karuvatta	Nil	1
14	Cherthala	Kodamthuruth	G.H.D Kodamthuruth	Nil	1
15	Kuttandu	Edathua	G.H.D Kodupunna	Nil	1
16	Karthikappally	Krishnapuram	G.H.D Krishnapuram	Nil	1
17	Karthikappally	kumarapuram	G.H.D Kumarapuram	Nil	1
18	Cherthala	Kuthiyathodu	G.H.D Kuthiyathodu	Nil	1
19	cherthala	Mararikulam North	G.H.D Mararikulam North	Nil	1
20	Mavelikkara	Thekkekara	G.H.D Mavelikkara-Thekkerkkara	Nil	1
21	Kuttanadu	Champakulam	G.H.D Champakulam	Nil	1
22	Kuttanadu	Muttar	G.H.D Muttar	Nil	1
23	Thiruvalla	Nedumpuram	G.H.D Nedumpuram	Nil	1
24	Karthikappally	Thrikunnapuzha	G.H.D Pallana	Nil	1

Sl. No.	Taluk	Village	Name of Institution	No. of Beds	No. of Doctors
25	Karthikappally	Pallipadu	G.H.D Pallipad	Nil	1
26	Cherthala	Pallipuram	G.H.D Pallipuram	Nil	1
27	Cherthala	Panavally	G.H.D Panavally	Nil	1
28	Chegannoor	Pandanadu	G.H.D Pandanadu	Nil	1
29	Karthikappally	Pathiyoor	G.H.D Pathiyoor	Nil	1
30	Cherthala	Perumbalam	G.H.D Perumbalam	Nil	1
31	Chengannoor	Puliyoor	G.H.D Puliyoor	Nil	1
32	Ambalappuzha	Purakkadu	G.H.D Purakkadu	Nil	1
33	Kuttandu	Thakazhy	G.H.D Thakazhy	Nil	1
34	Kuttanadu	Thalavady	G.H.D Thalavady	Nil	1
35	Chegannoor	Thiruvanvandoor	G.H.D Thiruvanvandoor	Nil	1
36	Cherthala	Vayalar East	G.H.D Vayalar	Nil	1
37	Kuttanadu	Veliyanadu	G.H.D Veliyanadu	Nil	1
38	Kuttanadu	Ramankary	G.H.D Vezhapra	Nil	1
39	Ambalappuzha	Ambalappuzha	G.H.D Ambalappuzha Sotuh	Nil	1
40	Cherthala	Arukutty	G.H.D Arukutty	Nil	1
41	Karthikappally	Kayamkulam	G.H.D Kayamkulam	Nil	1
42	Chengannoor	Venmany	G.H.D Venmany	Nil	1
43	Kuttanadu	Kainakary South	G.H.D Kainakary	Nil	1
44	Cherthala	Thanneermukkam North	G.H.D Thanneermukkam	Nil	1
45	Mavelikkara	Bharanikkavu	G.H.D Bharanikkavu	Nil	1
46	Chegannoor	Chiriyanadu	G.H.D Chiriyandu	Nil	1
47	Chegannoor	Mannar	G.H.D Mannar	Nil	1
48	Ambalappuzha	Kalavoor	G.H.D Mararikulam	Nil	1
49	Karthikappally	Mararikulam	G.H.D Muthukulam	Nil	1
50	Mavelikkara	Palamel	G.H.D Palamel	Nil	1
51	Cherthala	Pattanakkadu	G.H.D Pattanakkadu	Nil	1
52	Mavelikkara	Mavelikkara	G.H.D Mavelikkara	Nil	1
53	Ambalappuzha	Mullackal	G.H.H Alappuzha	25	4
54	Karthikappally	Kayamkulam	G. H. H Kayamkulam	25	4
55	Cherthala	Cherthala North	G.H.H Cherthala	25	4
56	Ambalappuzha	Mullackal	Diistric Medical Office Homoeo Alappuzha	Nil	Nil

AYURVEDA HOSPITALS

Village/Taluk	Name of Institution and Contact Details	No.of Beds	No. of Docs	No. of Nurses
Ambalappuzha Taluk	District Ayurveda Hospital Alappuzha	50	5	8
Alappuzha Municipality	Govt.Ayurveda Panchakarma Hospital, Alappuzha	20	1	2
Cherthala Municipality	Govt.Ayurveda Hospital cherthala	20	3	3
Mavelikkara Municipality	Govt.Ayurveda Hospital Mavelikkara	20	3	2
Kayamkulam Municipality	Govt.Ayurveda Hospital, Kayamkulam	20	3	3
Chengannur Municipality	Govt.Ayurveda Hospital, Chengannur	10	2	2
Cheppad Village	Govt.Ayurveda Hospital, Cheppad	10	1	2
Mararikulam (North Panchayath)	Govt.Ayurveda Hospital,Mararikulam	10	1	2
Nedumudy Panchayath	Govt.Ayurveda Hospital Nedumudy	10	1	2
Aroor Village	Govt.Ayurveda Hospital Aroor	10	1	2
Punnapra Village	Govt.Ayurveda Hospital Punnapra	30	2	3

DETAILS OF GOVT.AYURVEDA DISPENSARIES IN ALAPPUZHA DISTRICT (AYURVEDA)

Sl. No	Name of Institutions and Contact details	Name of Doctor
1	Govt.Ayurveda Dispensary, Ala	Dr.G.S.Sangeetha
2	Govt.Ayurveda Dispensary Arattupuzha	Dr.Ganga B.S.
3	Govt.Ayurveda Dispensary Aryad	Dr.Sreeja.R.
4	Govt.Ayurveda Dispensary Bharanicavu	Dr.Y.Raseena
5	Govt.Ayurveda Dispensary Cherthala South	Dr.Linta Samuel
6	Govt.Ayurveda Dispensary Cheruthana	Dr.Anitha Varghese
7	Govt.Ayurveda Dispensary Chingoli	Dr.Sheeba.S.
8	Govt.Ayurveda Dispensary Chunakkara	Dr.K.Ramla
9	Govt.Ayurveda Dispensary, Champakulam	Dr.Mersa Jose
10	Govt.Ayurveda Dispensary Cheriyanad	Dr.S.Bindu
11	Govt.Ayurveda Dispensary Chennithala	Dr.N.T.Nisha
12	Govt.Ayurveda Dispensary Ennakkad	Dr.P.S.Nazeer
13	Govt.Ayurveda Dispensary Harippad	Dr.Jayasankar
14	Govt.Ayurveda Dispensary, Kumarapuram	Dr.Anupama s.Pillai
15	Govt.Ayurveda Dispensary, Kakkathuruthu	Dr.O.K.Sreeja
16	Govt.Ayurveda Dispensary Karuvatta	Dr.Sudhadev.D.S.
17	Govt.Ayurveda Dispensary Kavalam	Dr.Subhash
18	Govt.Ayurveda Dispensary, krishnapuram	Dr.Nicy Khan
19	Govt.Ayurveda Dispensary kainakary	Dr.Shyma.M.
20	Govt.Ayurveda Dispensary Kandallur	Dr.Rejitha sekhar
21	Govt.Ayurveda Dispensary Kanjikuzhy	Dr.P.S.Rani
22	Govt.Ayurveda Dispensary, Kadakkarappally	Dr.T.Rajeena
23	Govt.Ayurveda Dispensary karumady	Dr.Dhyanya.C.
24	Govt.Ayurveda Dispensary, Kuthiyathodu	Dr.Aswathy.M
25	Govt.Ayurveda Dispensary Muthukulam	Dr.S.Pameela
26	Govt.Ayurveda Dispensary, Mattathilbhagom	Dr.Sarija Joy
27	Govt.Ayurveda Dispensary Muhamma	Dr.Sreekumar.J.S.
28	Govt.Ayurveda Dispensary Mavelikkara Thekkekara	Dr.Renju.T.Yohannan
29	Govt.Ayurveda DispensaryMulakkuzha	Dr.M.Manoj
30	Govt.Sidha Dispensary Mannanchery	Dr.V.B.Vijayakumar
31	Govt.Ayurveda Dispensary Mannar	Dr.Ganga.A.
32	Govt.Ayurveda Dispensary Neelamperoor	Dr.Chinnthurai.M.

Sl. No	Name of Institutions and Contact details	Name of Doctor
33	Govt.Ayurveda Dispensary Onattukara	Dr.S.Manoj
34	Govt.Ayurveda Dispensary Olavaipu	Dr.P.R.Ambily
35	Govt.Ayurveda Dispensary Panavally	Dr.Jayaraj.M.
36	Govt.Ayurveda Dispensary Pathiyoor	Dr.V.Manju
37	Govt.Ayurveda Dispensary Pattanakkad	Dr.K.J.Yesudas
38	Govt.Ayurveda Dispensary Pallippuram	Dr.P.K.Thilakarajan
39	Govt.Ayurveda DispensaryPallippad	Dr.Preetha.S.
40	Govt.Ayurveda DispensaryPurakkad	Dr.Darley James
41	Govt.Ayurveda Dispensary Perumbalam	Dr.E.P.Sudheer
42	Govt.Ayurveda Dispensary Pandanad	Dr.Sreekumar.P.
43	Govt.Ayurveda Dispensary Puliyoor	Dr.Glory Alex
44	Govt.Ayurveda Dispensary Thalavady	Dr.Sreeni
45	Govt.Ayurveda Dispensary Thuravoor	Dr.R.Meera
46	Govt.Ayurveda Dispensary Thakazhi	Dr.Gowdin Selvan.S.
47	Govt.Ayurveda Dispensary Thazhakkara	Dr.Suni
48	Govt.Ayurveda Dispensary Thiruvanvandoor	Dr.Kshemalatha
49	Govt.Ayurveda Dispensary Thrikkunnppuzha	Dr.Anjana Chandran
50	Govt.Ayurveda Dispensary Thamarakulam	Dr.Sidhu Ramachandran
51	Govt.Ayurveda Dispensary Thanneermukkom	Dr.Purushothaman Nair
52	Govt.Ayurveda Dispensary Veliyanad	Dr.Jayeshkumar.P.D.
53	Govt.Ayurveda Dispensary Venmony	Dr.Preetha
54	Govt.Ayurveda Dispensary Veeyapuram	Dr.Sheshnag.M.P.
55	Govt.Ayurveda Dispensary Vallikunnam	Dr.Krishnakumar.R.
56	Govt.Ayurveda Dispensary Devikulangara	Dr.Resmi.S.

ANNEXURE 18

DETAILS OF THE PRIVATE HOSPITAL IN ALAPPUZHA DISTRICT

Sl. No	Name of Village	Private Hospital
1	Ambalappuzha	Ursula Hospital, Ambalappuzha
2		B K M Hospital , Ambalappuzha
3		Surya Hospital, Ambalappuzha
4	Mullackal	Sahrudaya, Thathampally, Alappuzha
5	Paravoor	Co-operative Hospital, Vadackal
6	Alappuzha West	Matheri Hospital, Near Medical College Jn.
7	Karumady	VNM Hospital, Puthupurackal Jn.
8	Mannanchery	Palm shade HSS, Mannanchery
9		WE One HS, Kavunkal
10	Purakkad	Matheri Hospital, Thottappally
Cherthala		
1	Kokothamangalam	KVM Hospital Cherthala
2		NNMM Hospital (Xray Hospital) Cherthala
3	Cherthala North	SV Hospital Cherthala
4	Pallipuram	St.Thomas Hospital Pallipuram
5	Kuthiythode	Kannat Hospital Parayakad
6	Thykattusseri	Mercy Hospital Poochakal
7	Arthunkal	St.Reetha's Hospital
8	Mararikulam North	Charankatt Hospital
9	Panavally	Poochakal Medical Centre
10		Deepa Hospital Poochakal
11		Assissi Hospital Panavally
12		CKV Ayurveda Hospital Poochakal
13	Aroor	Lekshmi Hospital Aroor
15	Ezhupunna	Moham Hospital Eramallur
16		Punnapuzha Hospital Eramallur
17		Nicholas Hospital Eramallur
18		VS Hospital Ezhupunna
19	Kodamthuruth	Mat India Ayurvedic
20	Vayalar East	Holicross Hospital Thanki
21	Thuravur South	Karthika ayurvedis Hospital
22	Kadakarappalli	St.Reethas Hospital
Kuttanad		
1	Thalavadi	Placheril Ayurveda Hospital

Sl. No	Name of Village	Private Hospital
2	Thalavadi	SRV Ayurveda hospital
3	Thalavadi	George John Memmorial Hospital Anaprambal(N)
4	Kainakry North	St.Antony's Hospital Kainakry
5	Thakazhy	RBM Hospital Thakazhy
6	Thakazhy	Lurde Matha Hospital, Pacha
7	Ramankary	Naveen Hospital Mambuzhakary
8	Ramankary	Lurde Horpital Ramankry
9	Chambakulam	Ebey Speciality Clinic Centre, Nedudmudi
10	Chambakulam	Pushpagiri Sub Centre, Punnakkunnam
11	Muttar	SH Convent Hospital Muttar
12	Edathua	Maha Jubilee hospital Edathua
13	Edathua	St.Antony's Hospital Thayankary
Chengannur		
1	Mulakkuzha	Century Hospital, Piralasseri
2	Venmony	Medical Mission Hospital, Venmony
3	Cheriyanad	Sanjeevani Multispeciality Hospital, Cheriyanad
4	Chengannur	Mamman Memorial Hospital, Chengannur
5		Usha Nursing Home, Chengannur
6		Pooppally Hospital, Chengannur
7		Cherry's Hospital, Chengannur
8	Puliyoor	St.Mary's Hospital, Perissery
Karthikappally		
1	Kumarapuram	Deepa Hospital Karuvatta
2		Deepa Hospital Kumarapuram
3		Huda Trust Kumarapuram
4	Arattupuzha	RV Hospital Kanakakkunnu
5	Pathiyur	St.John's Hospital
6	Karthikappally	Devine hospital Haripad
7	Kayamkulam	Our Hospital Peringala
8		Chithra Hospital Cheravally
9		City Hospital Kayamkulam
10		Ebanezar Kayamkulam
11		Thoppil Nursing Home Kayamkulam
12		Christos Hospital Kayamkulam
13	Chingoli	Shalom Clinic
14		SMM Hospital Nangiarkulangara, Chingloli
15		PHC Chingoli

Sl. No	Name of Village	Private Hospital
16		Sree Ramakrishna Pharmacy (Ayurveda)
17		Krishnedhu (Ayurveda
18	Veeyapuram	Amritha Clinic Payippad
19	Cheppad	Siva Trust Hospital, Choontupalaka Jn.
20		Sreekrishna Nursing Home, Panachamoodu
21		High Care Hospital Muttom
22	Puthuppally	MA Hospital
23		Saphalya Hospital
24	Pallipad	Chaithanya Eye Hospital
Mavelikkara		
1	Mavelikkara	Sreekandapuram, Kandiyur
2	Kannamanglam	VSM, Thattarambalam
3	Nooranad	Josco, Idapon
4		KCM, Nooranad
5	Kattanam	St.Thomas Mission Hospital

PLACES & CONTACT DETAILS OF VETERINARY INSTITUTIONS

Sl. No.	Name of Institution	Name of Officer	Designation	Office Phone Number
1	DAHO, Alappuzha	Dr. Lissy P Skariah	DAHO	04772252431
		Dr. V. Gopakumar	DD(AH)	
		Dr.Serene Xavier	VS	
2	DVC, Alappuzha	Dr. A. Shobhana	CVO	04772252635
		Dr. Sunil Kumar P.C	AD	
		Dr. Ratheesh Babu. M	VS	
		Dr. Jacob Abraham	VS	
	Clinical Lab	Dr. Afsal	VS	
3	ADCP, Alappuzha	Dr. P. Rajeev	VS	04772252636
4	Central Hatchery Chengannur			04792452277
5	Calf Feed Subsidy Program	Dr. Radhakrishna Pillai	AD	04772246834
6	RAIC, Mavelikara	Dr. Sanuja.K	APO	04792302262
		Dr. L.Smitha	VS	
7	RAIC, Chertala	Dr. R.Mini	APO	04782817801
		Dr. Geetha. S	VS	
8	MBVH, Alappuzha	Dr.Varghese Mathew	SVS	
9	MVH, Chengannur			
10	MFAU, Pattanakkad			

VETERINARY POLY CLINICS

Sl. No.	Name of Institution	Name of Officer	Designation	Office Phone Number
1	VPC, Chengannur		SVS	04792450558
		Dr. Deepu Philip Mathew	VS	
2	VPC, Cherthala	Dr. Salim Chellappan	SVS	04782816584
		Dr. Jayakumar	VS	
3	VPC, Haripad	Dr. S. Vinayakumar	SVS	04792418100
		Dr. Rekha Sagar	VS	
4	VPC, Kayamkulam	Dr. C. Prathibha	SVS	04792442949
		Dr. Rama. S	VS	
5	VPC, Mancompu	Dr. V. Chandramohanan Nair	SVS	04772615105
		Dr. Rani Gopinath	VS	
6	VPC, Mavelikara	Dr. B. Santhosh kumar	SVS	04792340325
		Dr. Manjusree	VS	

VETERINARY HOSPITALS

Sl. No.	Name of Institution	Name of Officer	Designation	Office Phone Number
1	VH, Ambalapuzha		SVS	04772270495
2	VH, Kalavoor	Dr. Suresh P Panicker	SVS	04772290098
3	VH, Kanichukulangara	Dr. G. Jayachandra Kamath	SVS	04772186276
4	VH, Karthikapally	Dr. S.J Lekha	SVS	04792487912
5	VH, Kattanam	Dr. Beena	SVS	04792331621
6	VH, Kayipuram	Dr. K.G Raju	SVS	04782186336
7	VH, Kidangara	Dr. K.R Jaya	SVS	04772753733
8	VH, Krishnapuram	Dr. Santhosh Kumar K.K	SVS	04792437679
9	VH, Mannar	Dr. Mathew Thankachan	SVS	04792313811
10	VH, Mulakuzha	Dr. Rajan K.S	SVS	04792468998
11	VH, Muthukulam	Dr. S. Santhosh	SVS	04792474225
12	VH, Nooranad	Dr. Elizabeth Daniel	SVS	04792389397
13	VH, Ottappunna	Dr. Namitha Nayak	SVS	04782552597
14	VH, Pattanakkad	Dr. Premkumar	SVS	04782595123
15	VH, Punnapra	Dr. Varghese Mathew (Charge)	SVS	04772288458
16	VH, Thamarakkulam	Dr. Harikumar. K	SVS	04792372225
17	VH, Thycattussery	Dr. Krishnakumar	SVS	04782532326
18	VH, Vathikulam		SVS	04792327292

VETERINARY DISPENSARIES

Sl. No.	Name of Institution	Name of Officer	Designation	Office Phone Number
1	VD, Ala	Dr. Renjini P	VS	04792367253
2	VD, Ambalappuzha North	Dr. Litty. M. Cheriyan	VS	04772280544

3	VD, Anaprambal	Dr. Bini V.R	VS	04772122828
4	VD, Arattupuzha	Dr. Ambika.V	VS	04792488900
5	VD, Aroor	Dr. Hema Tresa Mathew	VS	04782872052
6	VD, Arthungal	Dr. Shalini Wilkinson	VS	04782573070
7	VD, Aryad	Dr. Biju. S	VS	04772125952
8	VD, Ayaparambu	Dr. J Sulfikkar	VS	04792149983
9	VD, Budhanoor	Dr. Thomas Cheriyan	VS	04792466388
10	VD, Chempumpuram	Dr. Deepa L	VS	04772171298
11	VD, Chennithala	Dr. Princemon	VS	04793214657
12	VD, Cheppad	Dr. Issac Sam	VS	04792401300
13	VD, Cheriyanadu	Dr. R. Anilkumar	VS	04792353122
14	VD, Cherthala	Dr. Vimal xavier	VS	Nil
15	VD, Chettikulangara	Dr. Priya Sivaram	VS	04792346232
16	VD, Chingoli	Dr. Archana. S. Nair	VS	04792407100
17	VD, Chunakkara	Dr. Daniel Koshy	VS	04792379440
18	VD, Devikulangara	Dr. Madhuri	VS	04762697330
19	VD, Edathua	Dr. Sreejith N Bhaskar	VS	04772210472
20	VD, Ezhupunna	Dr. P.D Koshy	VS	04782187420
21	VD, Kadakkarapally	Dr. Rani Bharathan	VS	04782181889
22	VD, Kainakary	Dr. Arya Alphonse	VS	04772171607
23	VD, Kandalloor	Dr. C S Shyju	VS	04792431201
24	VD, Kanjikuzhy	Dr. Jayasree	VS	04782865190
25	VD, Karuvatta	Dr.Hema Nair	VS	04792491700
26	VD, Kavalam	Dr.Divya Chandran	VS	04772748449

PRIVATE HOSPITALS IN ALAPPUZHA PROVIDING DELIVERY SERVICES

Sl #	Facility Name	Type of Hospital	Health Block	Latitude	Longitude
1	KURIAKOSE CHAVAR MEMORIAL HOSPITAL	Hospital with IP care	Chunakkara	9.17549	76.62458
2	JOSCO MULTI SPECIALITY HOSPITAL	Multispecialty Hospital	Chunakkara	9.22888	76.62692
3	Sanjos hospital	Multispecialty Hospital	Chettikadu	9.54032	76.33181

Sl #	Facility Name	Type of Hospital	Health Block	Latitude	Longitude
4	MAMMEN MEMORIAL HOSPITAL	Multispecialty Hospital	Pandanad	9.31996	76.6117
5	SAGARA COOPERATIVE HOSPITAL	Multispecialty Hospital	Ambalappuzha	9.46831	76.33205
6	SANJIVANI MULTISPECIALITY HOSPITAL	Multispecialty Hospital	Pandanad	9.26975	76.59455
7	Sreekandapuram hospital	Specilaty Hospital	Kurathikad	9.25108	76.5274
8	VENNIYIL SUGUMARAPILLA MEMORIAL HOSPITAL(VSM)	Multispecialty Hospital	Kurathikad	9.24802	76.52112
9	CITY HOSPITAL KAYAMKULAM	Multispecialty Hospital	Muthukulam	9.17153	76.49823
10	MATHA MISSION HOSPITAL	Specilaty Hospital	Muthukulam	9.17301	76.49925
11	MEDICAL TRUST HOSPITAL KAYAMKULAM	Multispecialty Hospital	Muthukulam	9.16130	76.50639
12	DEEPA HOSPITAL KARUVATTA	Hospital with IP care	Thrikkunnappuzha	9.30239	76.43384
13	DEEPA HOSPITAL DANAPADY	Hospital with IP care	Thrikkunnappuzha	9.28380	76.44034
14	JJ HOSPITAL KAYAMKULAM	Specilaty Hospital	Muthukulam	9.14941	76.50936
15	KATTANAM MEDICAL CENTER	Specilaty Hospital	Chunakkara	9.17655	76.56898
16	St Thomas Mission hospital kattanam	Multispecialty Hospital	Chunakkara	9.16933	76.58169
17	Sacred heart general hospital	Multispecialty Hospital	Muhamma	9.66210	76.33914
18	St. Sebastian’s Visitation Hospital	Multispecialty Hospital	Muhamma	9.65819	76.29918
19	Sree Narayana medical mission hospital	Multispecialty Hospital	Muhamma	9.67464	76.34123
20	Kinder Women's Hospital and Fertility Center PVT.LTD	Specilaty W&C hospital	Muhamma	9.74728	76.34652

Sl #	Facility Name	Type of Hospital	Health Block	Latitude	Longitude
21	Lourdhes Matha Hospital	Specilaty Hospital	Chempumpuram	9.36286	76.45303
22	KVM HOSPITAL CHERTHALA	Multispecialty Hospital	Muhamma	9.66746	76.33930
23	SAHRUDAYA HOSPITAL	Multispecialty Hospital	Chettikadu	9.50538	76.34188
24	K M CHERIYAN INSTITUTE OF MEDICAL SCIENCES	Multispecialty Hospital	Pandanad	9.33337	76.59333
25	PROVIDENCE HOSPITAL	Multispecialty Hospital	Chettikadu	9.53197	76.3269
26	POOCHAKAL MEDICAL CENTER	Multispecialty Hospital	Arookutty	9.79786	76.3515
27	USHA HOSPITAL	Specilaty W&C hospital	Pandanad	9.32271	76.62418
28	Ebenezer Hospital, Kayamkulam	Specilaty Kayamkulam	Muthukulam	9.17392	76.49984
29	Huda Trust Hospital, Haripad	Specilaty Kayamkulam	Thrikkunnappuzha	9.28324	76.44262
30	Sunrise Institute of Medical Sciences Pvt Ltd	Multispecialty Hospital	Thuravoor		

HEALTH INSTITUTIONS UNDER DIRECTORATE OF HEALTH SERVICES

Sl. No.	Name of the Institution	Phone Number	Name of Taluk	Name of the Corp/ Muni/Grama Panchayath	email-id	Lattitude	Longitude	NIN
1	GH Alappuzha	0477-2253324	Ambalappuzha	Alappuzha	ghalappuzha@gmail.com	9.490480 0	76.340227	1115312785
2	DH Mavelikara	0479-2303394	Mavelikkara	Mavelikara	dhmvkoff@gmail.com	9.255961 6	76.551649	473645832 6
3	DH Chengannur	0479--2999167	Chengannur	Chengannur	dhchengannur@gmail.com	9.328560 3	76.616582	588251748 4
4	THQH Cherthala	0478-2812683	Cherthala	Cherthala	thqhcherthala@gmail.com	9.681613 1	76.339945 9	254418858 0
5	THQH Pulinkunnu	0477-2707742	Kuttanad	Pulinkunnu	pulincunnuthqh@gmail.com	9.435067 8	76.436506	427343835 0
6	THQH Haripad	0479-2412765	Karthikappally	Haripad	thqhharipad2765@gmail.com	9.280228 1	76.459587	387352428 8
7	THQH Kayamkulam	0479-2447275	Karthikappally	Kayamkulam	thqhkayamkulam@gmail.com	9.171700 0	76.4997	576818187 6
8	TH thuravoor	0478-2562490	Cherthala	Kuthiyathode	thuravoorchc@yahoo.co.in	9.770068 6	76.317692	866253678 1
9	TH CHETTIKAD (RURAL HEALTH TRAINING CENTRE ,CHETTIKAD)	0477-2248668	Ambalappuzha	Mararikulam South	rhtcchettikadu@gmail.com	9.531394 7	76.314297	352821113 3
10	W & C Hospital, Alappuzha	0477-2251151	Ambalappuzha	Alappuzha	wcalpy@gmail.com	9.490070 0	76.32119	547364682 5
11	CHC THYCATTUSSERY	0478-2532694	Cherthala	Thykkattussery	chctsy@gmail.com	9.775120 0	76.340198 3	111533618 0

Sl. No.	Name of the Institution	Phone Number	Name of Taluk	Name of the Corp/ Muni/Grama Panchayath	email-id	Latitude	Longitude	NIN
12	CHC Champakkulam	0477-2737587	Kuttanad	Champakkulam	chcchampakulam@gmail.com	9.406635 8	76.412585 8	1115558270
13	CHC Muhamma	0477-2985296	Cherthala	Muhamma	mochcmuhamma@gmail.com	9.606533 3	76.354946 6	5252332167
14	CHC Thanneermukkom	0478-2584404	Cherthala	Thanneermukkom	motkmchc@gmail.com	9.676245 5	76.393266 3	1674668288
15	CHC Ambalpuzha (URBAN HEALTH TRAINING CENTER AMBALAPPUZHA)	0477-2270096	Ambalappuzha	AMBALAPPUZHA SOUTH	chcambalappuzha@gmail.com	9.384126 7	76.354106 6	3548757818
16	CHC CHUNAKKARA	0479-2382305	Mavelikkara	Chunakkara	chcchunakkara@gmail.com	9.179599 6	76.605008	6112345134
17	CHC KURATHIKAD	0479-2328476	Mavelikkara	THEKKEKARA	chckurathikad@gmail.com	9.206293 3	76.560007	3477282754
18	CHC MUTHUKULAM	0479-2472193	Karthikappally	muthukulam	chcmuthukulam@gmail.com	9.216878 3	76.455906 6	7477627413
19	CHC Veliyanadu	0477-2753238	Kuttanad	Veliyanad	chcveliyanad123@gmail.com	9.424921 2	76.489275	6876672665
20	CHC CHEMPUMPURAM	0477-2736318	Kuttanad	NEDUMUDI	chcchempumpuram@gmail.com	9.421438 3	76.384445	1115337659
21	CHC EDATHUA	0477-2210750	Kuttanad	Edathua	chcedathua@gmail.com	9.823987 1	76.351034 9	7675763465
22	CHC PANDANAD	0479-2466678	Chengannur	PANDANAD	chcpandanad@gmail.com	9.324113 3	76.576577	8633623478
23	CHC MANNAR	0479-2313920	Chengannur	MANNAR	chcmannar@gmail.com	9.312679 5	76.533471	1856784366

Sl. No.	Name of the Institution	Phone Number	Name of Taluk	Name of the Corp/ Muni/Grama Panchayath	email-id	Latitude	Longitude	NIN
24	CHC THRIKKUNNAPPUZHA	0479-2482097	Karthikappally	THRIKKUNNAPPUZHA	thrikkunnappuzhachc@gmail.com	9.259630 1	76.411017	558827634 4
25	CHC AROOKUTTY	0478-2872931	Cherthala	AROOKUTTY	chcarookutty@gmail.com	9.867916 7	76.320783 3	388244661 4
26	FHC Perumbalam	0478-2512366	Cherthala	Perumbalam	phcperumbalam@gmail.com	9.867916 7	76.320783	871611155 7
27	FHC MANNANCHERRY	0477-2292008	Ambalappuzha	Mannanchery	phcmannancherry@gmail.com	9.561565 4	76.343492 2	421486842 6
28	FHC KODAMTHURUTH	0478-2565944	Cherthala	KODAMTHURUTH	mokodamthuruthphc@gmail.com	9.796439 6	76.317558	871284643
29	FHC CHEPPAD	0479-2400911	Karthikappally	Cheppad	arogyakendramcheppad@gmail.com	9.245107 8	76.481919	111533564 6
30	FHC Muttar	0477-2707732	Kuttanad	Muttar	muttarphc@gmail.com	9.412208 9	76.475512 4	867358182 6
31	FHC BUDHANOOR	9947211870	Chengannur	BUDHANOOR	phcbudhanor@gmail.com	9.282360 0	76.563662	442137440
32	FHC KUMARAPURAM	0479-2995215	Karthikappally	kumarapuram	kumaraphc@gmail.com	9.283634 1	76.427196 5	458442624 3
33	FHC HARIPAD	0479-2404641	Karthikappally	Haripad	moharipadphc@gmail.com	9.294106 0	76.463301	784747131 0
34	FHC PALLIPAD	0479-2409096	Karthikappally	PALLIPAD	mophcpallipad@gmail.com	9.280554 5	76.476834	111533822 8
35	FHC CHERTHALA SOUTH	0478-2572533	Cherthala	cherthala South	mocherthalasouthphc@gmail. com	9.654141 5	76.299395 3	743128767 6
36	FHC VAYALAR	0478-259827	Cherthala	VAYALAR GRAMA PANCHAYATH	mophcvayalar@gmail.com	9.718778 3	76.340988	857635278 8

Sl. No.	Name of the Institution	Phone Number	Name of Taluk	Name of the Corp/ Muni/Grama Panchayath	email-id	Latitude	Longitude	NIN
37	FHC PALLITHODE	0478-2562590	Cherthala	Kuthiyathode	phcpallithode@gmail.com	9.776540	76.283745	674518383737
38	FHC VALLIKUNNAM	0479-2338300	Mavelikkara	VALLIKUNNAM	vallikunnamphc@gmail.com	9.132063	76.569417	644458224848
39	FHC NOORANAD	0479-2375958	Mavelikkara	NOORANAD	phcnooranad@gmail.com	9.193754	76.636171	535244883030
40	FHC CHETTIKULANAGARA	623858598181	Mavelikkara	CHETIKULANAGARAGP	chettikulangaraphc@gmail.com	9.224500	76.519546	168451878888
41	FHC Thakazhy	0477-2275900	Kuttanad	Thakazhy	phcthakazhy@gmail.com	9.377435	76.405350	483684117373
42	FHC CHERIYANAD	984644848482	Chengannur	CHERIYANAD	phccheriyanad@live.com	9.270950	76.59261	388665285252
43	FHC KARTHIKAPPALLY	0479-2482509	Karthikappally	KARTHIKAPPALLY	phckarthikappally@gmail.com	9.262412	76.438375	552542516060
44	FHC KARUVATTA	0479-2491934	Karthikappally	KARUVATTA	karuvattaphc@gmail.com	9.307639	76.425639	3324111651
45	FHC ARYAD	0477-2249070	Ambalappuzha	Aryad	aryadphcalpy@gmail.com	9.543177	76.331257	576786147878
46	FHC THOTTAPPALLY	0477-2297369	Ambalappuzha	PURAKKAD	phcthottapally@gmail.com	9.317385	76.381018	368324433333
47	FHC PURAKKAD,PURAKKAD	0477-2270798	Ambalappuzha	PURAKKAD	phcpurakkad@gmail.com	9.349140	76.369326	385768575858
48	FHC PUNNAPRA SOUTH	0477-2280161	Ambalappuzha	Punnapra South	phcpunnapara@gmail.com	9.431235	76.338923	11156716777
49	FHC AMBALAPPUZHA NORTH	949654782820	Ambalappuzha	AMBALAPPUZHA NORTH	phcambalappuzhanorth@gmail.com	9.405586	76.378663	1115558635

Sl. No.	Name of the Institution	Phone Number	Name of Taluk	Name of the Corp/ Muni/Grama Panchayath	email-id	Latitude	Longitude	NIN
50	FHC MARARIKULAM NORTH	0478-2968600	Cherthala	Mararikulam North	momararinorth@gmail.com	9.620808 9	76.32655	687212787 47
51	PHC VALLETHODE	0478-2561465	Cherthala	Kodamthuruth	phcvallethode@gmail.com	9.794351 5	76.302453	531128225 4
52	FHC PANAVALLY	0478-2524299	Cherthala	Panavally	mopanavally2021@gmail.com	9.808475 5	76.353148	865246342
53	FHC THURAVOOR SOUTH	0478-2565662	Cherthala	THURAVOOR	thuravoorsouthphc@gmail.com	9.757198 3	76.318273 3	468744132 1
54	PHC KADAKKARAPPALLY	0478-2812692	Cherthala	KADAKKARAPPALLY	phckadakkarappally@gmail.com	9.702139 2	76.299658 3	682845258 8
55	FHC THAMARAKULAM	0479-2370310	Mavelikkara	THAMARAKULAM	phcthamarakulam@gmail.com	9.137627 0	76.62101	124163351 8
56	FHC THAZHAKKARA	0479-2967370	Mavelikkara	THAZHAKKARA	phcthazhakkara@gmail.com	9.242705 0	76.577621 6	837531738 8
57	FHC BHARANICAVU	0479-2961829	Mavelikkara	BHARANICAVU	mophcbharanicavu@gmail.com	9.187783 3	76.546592	666317838 9
58	FHC KRISHNAPURAM	0479-2438154	Karthikappally	KRISHNAPUAM	mophckrishnapuram@gmail.com	9.142472 4	76.525918 6	448154574 9
59	FHC DEVIKULANGARA	0476-2698686	Karthikappally	DEVIKULANGARA	moicphcdvk@gmail.com	9.144179 7	76.497114 2	457274848 18
60	FHC PATHIYOOR	0479-2436120	Karthikappally	PATHIYOOR	mo.phc.pathiyoor@gmail.com	9.209900 0	76.494841 6	252213665 0
61	FHC KAVALAM	0477-2968182	Kuttanad	KAVALAM	kavalamphc2@gmail.com	9.472961 7	76.461085 0	422517521 7
62	FHC veeyapuram	0479-2318533	Karthikappally	veeyapuram	phcveeyapuram@gmail.com	9.325000 0	76.46	622522811 0

Sl. No.	Name of the Institution	Phone Number	Name of Taluk	Name of the Corp/ Muni/Grama Panchayath	email-id	Latitude	Longitude	NIN
63	FHC RAMANKARY	0477-2707731	Kuttanad	RAMANKARY	phcramankary@gmail.com	9.407413 4	76.465521 9	3884 2573 24
64	FHC KUPPAPURAM	0477-2176462	Kuttanad	KAINAKARY	phc.kuppapuram@yahoo.com	9.478504 6	76.38 6895	5472 4885 26
65	FHC VENMONY	0479-2354998	Chengannur	VENMONY	venmonyphc2gmail.com	9.242865 0	76.63 07349	2512 5366 53
66	FHC Eramallikkara	0479-2427002	Chengannur	Thiruvanvandoor	phcermallikkara@gmail.com	9.345000 0	76.56 29133	6762 2738 75
67	FHC PULIYOOR	0479-2466555	Chengannur	PULIYOOR	phcpuliyoor@gmail.com	9.301806 7	76.58 0957	1477 6845 32
68	FHC MULAKKUZHA	9496092215	Chengannur	MULAKKUZHA	phcmulakkuzha@gmail.com	9.274281 8	76.64 3691	7835 5188 33
69	FHC KADAMPOOR	0479-2466815	Chengannur	BUDHANOOR	phckadampooralpy@gmail.com	9.309913 3	76558790 0	4762 4734 54
70	FHC CHINGOLI	9610716401	Karthikappally	CHINGOLI	chingoliphc@gmail.com	9.246513 0	76.44 5779	4684 2527 70
71	FHC Ezhupunna	0478-2877699	Cherthala	Ezhupunna	ezhupunnaphc@yahoo.in	9.831602 4	76.29 73063	5187 3418 87
72	FHCKALAVOOR	0478-2860979	Ambalappuzha	MANNANCHERRY	fhckalavoor@gmail.com	9.587735 9	76.32 8909	3328 7276 43
73	FHC Aroor	0478-2874192	Cherthala	AROOR	phcaroor@gmail.com	9.869746 4	76.30 48179	5336 4476 43
74	FHC VETTACKAL	0478-2592193	Cherthala	Pattanakkad	fhcvettackal@gmail.com	9.729393 8	76.29 88454	6737 7853 26
75	FHC, ARATTUPUZHA	0479-2488201	Karthikappally	ARATTUPUZHA	mophcarattupuzha@gmail.com	9.214493 0	76.42 81833	4773 5534 43
76	FHC KANDALLOOR	0479-2430365	Karthikappally	KANDALLOOR	phckandalor@gmail.com	9.189982 6	76.47 0828	3734 4851 74

Sl. No.	Name of the Institution	Phone Number	Name of Taluk	Name of the Corp/ Muni/Grama Panchayath	email-id	Latitude	Longitude	NIN
77	FHC PALLIPPURAM	0478-2553972	Cherthala	CHENNAMPALLIPPURAM	mophcpallipuram@gmail.com	9.736493	76.356507	747463821 5
78	FHC KANJIKUZHY	0477-2980700	Cherthala	KANJIKUZHY	mokanjikuzhyphc@gmail.com	9.607846 7	76.356507	566273838 3
79	FHC PUNNAPRA NORTH	0477-2266538	Ambalappuzha	Punnapra North	phcpunnapranorth@gmail.com	9.454888 3	76.334683	216127163 6
80	FHC, PALAMEL	0479-2386242	Mavelikkara	PALAMEL GRAMA PANCHAYATH	phcpalamel@gmail.com	9.185430 9	76.65487	682456284 4
81	FHC CHENNITHALA	0479-2323897	Mavelikkara	Chennithala	phcchennithala@gmail.com	9.279883 6	76.520562	272667864 8
82	FHC NEELAMPEROOR	0477-2746200	Kuttanad	NEELAMPEROOR	phcneelamperoor@gmail.com	9.468230 6	76.489802	731638347 5
83	FHC THALAVADY	0477-2210940	Kuttanad	Thalavady	thalavadyphc@gmail.com	9.368680 0	##########	537324867 2
84	FHC ALA	9446552533	Chengannur	ALA	mophcala2011@gmail.com	9.279131 7	76.61841	127858464 2
85	FHC CHERUTHANA	0479-2318455	Karthikkapally	CHERUTHANA	cheruthanaphc@gmail.com	9.327568 5	76.437210 3	464737641 9
86	GFH PALLANA	0477-2297644	Karthikkapally	Thrikunnapuzha	gfhpallana@gmail.com	9.283692 9	76.389811	111613754 6
87	GFD, ARATTUPUZHA	0479-2488200	Karthikkapally	ARATTUPUZHA	gfdarattupuzha@gmail.com	9.214493 0	76.428183 3	111567173 5
88	DISTRICT TB CENTRE, ALAPPUZHA	0477-2252861	Ambalappuzha	ALAPPUZHA	dtoalpy@gmail.com	9.491355 3	76338963	111764411 0
89	T B CLINIC KARUVATTA	0479-2491933	Karthikkapally	KARUVATTA	tbclinic517@gmail.com	9.315267 4	76.426214	

Sl. No.	Name of the Institution	Phone Number	Name of Taluk	Name of the Corp/ Muni/Grama Panchayath	email-id	Latitude	Longitude	NIN
90	Leprosy Sanitorium, Nooranad	0479-2382331	Mavelikkara	Thamarakkulam	lsnooranad@gmail.com	9.193754 2	76.636171 4	1117645133

MAJOR DIAGNOSTIC CHAINS (MULTIPLE LOCATIONS)

Lab Name	Primary Locations in Alappuzha
DDRC Agilus Diagnostics	Alappuzha (General Hospital Jn), Vandanam, Cherthala, Haripad, Ambalapuzha, Poochakkal, Thuravoor, Mavelikara, Kayamkulam.
Metropolis Healthcare	Alappuzha Town (Vazhicherry, AN Puram), Vandanam (Near Medical College), Punnapra (Medical Trust Hospital), Mavelikkara.
Medivision Scans & Labs	Alappuzha (Opp. General Hospital), Mavelikara (Near Govt Hospital), Kayamkulam (Puthiyidom), Chengannur.
Thyrocare	Alappuzha Town (MO Ward), Cherthala, Kayamkulam (Home collection services widely available).
Neuberg Diagnostics	Vandanam (Near T.D. Medical College).

Alappuzha Town & Nearby

- **MDC Diagnostics & Scans:** Court Road (Near Malabar Gold).
- **Sankar's Health Care Scans & Diagnostics:** Vellakkinar Junction and Pathirappally.
- **Aswathi Fully Automated Lab:** Vellakkinar Junction.
- **Nas Hi Care Lab:** Iron Bridge, Alappuzha.
- **Midas Scan:** Palace Road, Kodiveedu.
- **Graphic Neuro Care (EEG/Scanning):** Railway Station Road.
- **Athira Scan:** Vellakkinar Junction.

Cherthala & North Alappuzha

- **Sanjeevani Labs:** Police Station Road, Cherthala.
- **Grace Medilab:** Market Road, Cherthala.
- **Care Diagnostic Centre:** Poochakkal and Panavally.
- **Medizio Polyclinic & Lab:** Arookutty.
- **Shankars Lab:** Near Civil Station, Cherthala.

Kayamkulam, Mavelikara & South Alappuzha

- **Biovision Speciality Diagnostics:** Mavelikara (Govt Hospital Jn).
- **AB Scans and Laboratory:** Kayamkulam (Govt Hospital Road).
- **New Desinganad Scans:** Near Puthiyidom Temple, Kayamkulam.
- **Amma Scan Centre:** Pattanakkad / Kayamkulam.
- **Emirates Medical Diagnostic Center:** Mavelikara.
- **Microlab Laboratories:** Chengannur.

SL NO	Name of the Agency	Area	category
1	Gasco Industrial Gas Pvt Ltd Alappuzha	Alappuzha Town	Major Refilling & Manufacturing Units
2	Oxygen Plant, Kunnupuram	Kunnupuram	Major Refilling & Manufacturing Units
3	Sultan Industrial Gases Alappuzha	Alappuzha Town	Major Refilling & Manufacturing Units
4	Oxygen Digital Shop - Alappuzha	Alappuzha Town	Major Medical Oxygen Suppliers & Dealers
5	Southern Surgical	Alappuzha Town	Major Medical Oxygen Suppliers & Dealers
6	Janasevana Medicals	Cherthala	Major Medical Oxygen Suppliers & Dealers
7	Southern Surgicals	Alappuzha Town	Major Medical Oxygen Suppliers & Dealers
8	Medizone Health Specialities	Mavelikkara	Major Medical Oxygen Suppliers & Dealers
9	Carezone Surgicals	Chengannur	Major Medical Oxygen Suppliers & Dealers

10	Evergreen Surgicals	Neerkunnam	Major Medical Oxygen Suppliers & Dealers
11	Medicity Pharmaceuticals	Haripad	Major Medical Oxygen Suppliers & Dealers

List of NGOs

SL No.	Organisation Name	Office Address
1	Kaniv Vaduthala	C/ Sahayi welfare society Mythri bhavan, Vaduthala, Arookutty Alappuzha Dt
2	Seva Bharathi Cherthala	ESWARI BHAVANAM CMC .12 , CHERTHALA P O ALAPPUZHA , Pin. 688524
3	Shahul Hameed Pain & Palliative Care	Thyckal P O Cherthala, Alappuzha 688530
4	Alpha Charitable Trust Kuttanad	Alpha charitable trust, kuttanad Thalavady P.O Alappuzha Dist, Pin689572
5	Kripa	Koottala House, Neerkunnam Vandanam. PO, Alappuzha. 5
6	Mythri Life Care and Palliative	Panoor Pally Junction, Panoor, Pallana- PO Thrikunnapuzha, Alapuzha- 690515
7	Seva Bharathi Thalavady	Seva Bharathi Thalavady, Bld No:372/A Thalavady P.O, PIN:689572
8	Seva Bharathi Thrikkunnapuzha	Vedavyasa vidyapeedom Pathiyankara, Thrikkunnapuzha P O Alappuzha Dist 690515
9	Seva Bharathi Pathiyoor	Seva Bharathi pathiyoor Keerikkad P O, Pathiyoor 690508
10	Seva Bharathi Karthikappally	SEVABHARATHI KARTHIKAPPALLY BUILDING, VALIYAKULANGARA, KARTHIKAPPALLY, 690516
11	Seva Bharathi Puliyoor	Seva bharthi puliyoor. PO Chengannur Alappuzha
12	Seva Bharathi Chettikulangara	Asrayakendram, Erezha North Chettikulangara P O, Mavelikara
13	Seva Bharathi Kayamkulam	Kesava sadhan , Puthiyidom Kayamkulam
14	Seva Bharathi Chengannur	Sangha Vihar, Thittamel Chengannur 689121
15	Seva Bharathi Kavalam	Seva Bharathi kavalam, kavalam,reg no.ALP/TC/183/2021,bldg no 4/112, kavalam PO, alappuzha -688506,kerala.

SL No.	Organisation Name	Office Address
16	Oommen Chandy Foundation and Palliative Care	Pandialakkal, MO Ward, Pin 68801
17	Seva Bharathi Chennithala	Seva Bharathi Chennithala, Chennithala PO Mavelikara, Alappuzha
18	Seva Bharathi ambalapuzha	TD medical college vandanam Vandanam
19	Seva Bharathi	Sanga Mandir, Haripad 690514
20	Seva Bharathi Alappuzha nagar	Reg.no Alp/TC/189/2020 No6/270,Punnamada ward Avalookunnu.P.o,Alappuzha,688006
21	Seva Bharathi	Sreegosala Krishna Seva Sangham Building, Thiruvanvandoor P O Thiruvanvandoor
22	Seva Bharathi Cheppad	President/Secretary Seva Bharathi Cheppad Cheppad PO, Pin 690507, Alappuzha District
23	Seva Bharathi venmoney	Attuvalambil building, venmoney
24	Seva Bharathi Mavelikara unit	Seva Bharathi office Mamparayil house Kottakkakam Mavelikara - 690101
25	Seva Bharathi Krishnapuram	Seva Bharathi Krishnapuram Near Kurakkavu Temple Kappil Mekku Krishnapuram Pin.690533
26	Seva Bharathi Panavally	SEVABHARATHI Panavally ,10/323, Near Kottady Amman Kovil, Kuttikkara Rd,Panavally P.O,Alappuzha- 688526
27	Indira Gandhi Pain and Palliative care Society	Kayamkulam Alappuzha
28	NM Trust Palliative Care	Near irshad masjid vellakinar Alappuzha
29	SRK Gramasevasamithy Pain and Palliative Care	SRK gramasevasamithy Reg no. A/1238/11 H.O. Sree Sree buildings, market junction kanichukulangara p.o. Cherthala, Alappuzha, 688582
30	Seva Bharathi Thekkekkara	Puthenpurayil, Pallickal East, Thekkekkara P. O., Mavelikara 690107, Alappuzha Dist.
31	Alappuzha initiative in palliative care	Cheppankaripurayidom, Valiyamaram ward, Alappuzha 688001

SL No.	Organisation Name	Office Address
32	AMA palliative care center	Alappattu building, Pattaniidukku, Sanathanam ward, Alappuzha
33	Santhwanam Cultural and Charitable Trust	Santhwanam cultural and charitable trust, krishnapuram kayamkulam
34	Santhwanam Charitable Society Muttom	Muttom P O, Haripad, 690511
35	Karunya pain and palliative care	Mullakal Alappuzha
36	Alpha palliative care Kuttanad Link centre, an initiative of Alpha Charitable Trust	Alpha Charitable Trust IX / 627, Edamuttam, Thrissur Palappetty, Kerala, India Email us at communications@alphapalliativecare.org. at the numbers provided on our
37	Suseela Gopalan Palliative care	Near Muhamma CHC Muhamma PO, Alappuzha
38	Santhwanam Pain & Palliative care Society ; Alappuzha	Abdul Khader Memorial Bld: Near Jaffer Juma Masjid vattappally; zack Karia ward; Alappuzha
39	K. K. KUMARAN PAIN & PALIATIVE CARE SOCIETY	K. K. Kumaran Pain & Palliative Care Society, S. L Puram. P. O, Cherthala, Alappuzha
40	Assisi Hospice & Palliative Care Centre	Punnapra, Alappuzha – 688004
41	AMMA PALLIATIVE CARE	Puthenpurackal, Thathampally Alappuzha
42	EK NAYANAR SMARAKA PAIN AND PALLIATIVE SOCIETY,AYKKABHARATHAM.	KARTHIKA,BUILDING NO.AP18/335 Avalukkunnu PO, Alappuzha, 688006
43	LIFE PALLIATIVE CARE	LIFE PALLIATIVE CARE, VANDANAM P O, ALAPPUZHA
44	Alpha palliative care link center	Jyothis house, Pazhaveedu P. O, Alappuzha
45	Sathyapatham Charitable Society (സത്യപഥം ചാരറ്റബിൾ സൊസൈറ്റി)	Nooranad P. O Alappuzha Pin- -690504 Reg No -ALP/TC/299/2016
46	SMILE Foundation Nooranad	Nooranad P.O alappuzha, Pin-690504
47	Karuna Pain &Palliative Care Society	CSI Church Building,Near CSI Chruch,Engineering College Road ,Chengannur
48	Palliative Care Society	Chunakkara Grama Panchayat Palliative Care Society
49	Karuna Pain And Palliative	Karuna Pain and Palliative, Venmony P O
50	Prahladaa Social Service Trust	Prahladaa Social Service Trust Thuravoor PO, Alappuzha District
51	Santhibhavan Sarvodaya Panguvekkal CharitableTrust	Punnapra PO, Alappuzha Kerala 688004

SL No.	Organisation Name	Office Address
52	KANIVU PAIN AND PALLIATIVE SOCIETY	Kanivu Pain And Palliative Society,Avalookkunnu P O, Alappuzha
53	Sabarmati Family Clinic & Palliative Care	Building No.1/22 St. Thomas Church Shopping Complex, Thumpolly.P.O , Alappuzha- 688008
54	Rajeev Gandhi Memorial foundation	Kggtowers, tb road, Cherthala, 68524
55	Samarian palliative care	St Michael's church, mathru-pithru vethi, thathampally, appeppey-688013
56	Rajeev Gandhi Foundation	Rajeev Gandhi Foundation, Aroor panchayath unit, Aroor Kerala
57	Seva Bharathi Cheppad Unit	W III 248 Building Muttom- Cheppad Road Muttom PO, Pin 690511, Alleppey District
58	Karuna Pain And Palliative Care Society Regd.no.ALP/TC/429/2014	C.S.I.Church Building, Near YMCA College of Engineering Road Chengannur 689121
59	Karuna Pain And palliative Care Society Alp/TC/429/2014	C.S.I.Church Building Near YMCA College of Engineering Road Chengannur 689121
60	Karuna Pain And Palliative Care Society Reg.No.ALP/TC429/2014	C.S.I.Church Building Near YMCA College of Engineering Road Chengannur 689121
61	രാജീവ് ഗാന്ധി ഫൗണ്ടേഷൻ	രാജീവ് ഗാന്ധി ഫൗണ്ടേഷൻ മണ്ണഞ്ചേരി. പി. ഒ ആലപ്പുഴ -9447771333
62	Abhaya Pain And Palliative	Thampakachuvadu, Aryad North P O, Alappuzha
63	Friends organisation for charity	Kunnappally , Mannancherry P O Alappuzha Pin 688538
64	Al Shifa Help and Care Charitable Trust	Al Shifa Help and Care Charitable Trust, Mannancherry P O, Alappuzha
65	Snehapurvam Jeevakarunya Souhridha Samithi	Paingamadom, Punnapra P.O., Alappuzha -4
66	Kaniv Pain And Palliative Society	Kaniv Pain and Palliative society South Aryad Alappuzha, Avalookkunnu. PO
67	Aroor Pain And Palliative Care	Sreenarayana puram Ezhupunna Cherthala
68	Abhayam Pain And Palliative Care Society	Mavelikara Thaluk Chethuthozhilali Union Office, Mavelikara.PO
69	JEEVANAM	SriSadhanam building Valiya Veedu North Aryad, Mannanchery
70	Sandwanam pain & palliative care society	SANDWANAM PAIN & PALLIATIVE CARE SOCIETY, CHERTHALA

SL No.	Organisation Name	Office Address
71	K K Kumaran pain palliative care society	S L PURAM P. O. KANJIKUZHI ALAPPUZHA
72	DYFI	Youth centre Perumbalam Cherthala Alappuzha
73	Sandwanam	Sandwanam Thykkattussery po Cherthala
74	സാന്ത്വനം പെയ്ൻ & പാലിയേറ്റീവ് പെരുമ്പളം യൂണിറ്റ്	പെരുമ്പളം, 688570
75	Santhwanam pain and palliative care society	CPIM Poochackal localcommittee office Panavally. P. O Cherthala
76	KKC SMARAKA PAIN AND PALLIATIEVE CARAE SOCIETY	N S SMARAKAM.KAYAMKULAM. KAYAMKULAM P O. ALAPPUZHA DISTRICT
77	സാന്ത്വനം പെയിൻ ആൻഡ് പാലിയേറ്റീവ് കെയർ സൊസൈറ്റി പള്ളിപ്പുറം യൂണിറ്റ്	E.K. NAYANAR സ്മാരക മന്ദിരം ഒറ്റപ്പുന്ന jn., പള്ളിപ്പുറം ചേർത്തല Pin 688541
78	AROOR PAIN AND PALIATIVE CARE	VYSAKH EZHUPUNNASOUTH PO CHERTHALA 688537
79	Benny Smaraka Paliyative care society (Karunya Kiranam)	Janathamarket, Pollathai. PO Alappuzha
80	C G Francis Smaraka Trust	CPM LC office Pathirappally Pathirappally P O Alappuzha-688522
81	CK.Vasu Palliative & Pain (Snehasparsam)	MUHAMMA NORTH MEKHALA,KAYIPPURAM
82	Chethana palliative and charitable society	Chethana janakeeya lab Vandanam P O, Alappuzha PIN 688005
83	Chethana palliative care and charitable society	Ambalappuzha south panchyath ambalappuzha, alappuzha
84	Chethana Palliyative Care and charitable Society	Chethana Janakeeya lab , vandanam P0 Alappuzha 5 Pin 688005
85	Jeevathalam pain and palliative	CPI(M) area committee office bernad , kalavoor
86	P KRISHNAPILLAI SMARAKA TRUST	CPIM Local Committee Office Chiyamveli, Mannancherry PO, Alappuzha

SL No.	Organisation Name	Office Address
87	Seva Bharathi Mannanchery	Mannancherry PO, Alappuzha
88	Abhayam pain and palliative care society	Chettu thozhilaly union .Budha Junction Mavelikkara Alappuzha
89	KANIVU	Kanivu Vayalar Vayalar P.O., Cherthala
90	Chethana punnapara zonal	Punnapara P.O. alappuzha 688004
91	Chethana punnapara east	Punnapara P.O. alappuzha 688004
92	Chethana Palliative Care and Charitable Society Reg.no 824/2015	Chethana Janakeeya Lab Vandanam.P O., Alappuzha PIN 688005
93	Sujamol.m	Puthenkalathil,Ayapurambu.p.o Anary north

Contact points:

District	DMO Office	Collectorate Control Room	DISHA
Alappuzha	0472 251650 0472 252329	0477 2238630 9495003640, 0477 2236837	1056