

Jaseema Jaleel Vismaya P P Athira Mungath Reena Sunija Vinay Goyal Harikumar Remya T K Dileepkumar Sheeba George Sachin Kc Viswanathan Arun Kumar Gana P P Arun Jithesh Lenin Tk Divya Suresh Ajan Mahesh Murali Mb Roshan Jose Rahul Krishna Sharma Anagha S Reetha Akhil Raj P Bijoy Sachin KC Murali MB Akhil Raj P Prathibha P Ajan Dileepkumar Anagha S Harikumar Reetha Murali Mb Akhil Raj P Sheeba George Reena Murali MB Roshan Jose Athira Mungath Vismaya P P Jaseema Jaleel Bijoy Arun Arun Kumar Akhil Raj P Mahesh Gana P P Jithesh Remya T K Vinay Goyal Divya Suresh Lenin Tk Sachin Kc Sachin Kc Rahul Krishna Sharma Viswanathan Prathibha P Sunija Akhil Raj P Divya Suresh Arun Kumar Jithesh Mahesh Ajan Athira Mungath Reetha Arun Rahul Krishna Sharma Murali Mb Viswanathan Sachin Kc Jaseema Jaleel Bijoy Dileepkumar Anagha S Vinay Goyal Sunija Akhil Raj P Lenin Tk Vismaya P P Sheeba George Sachin KC Roshan Jose Reena Murali MB Remya T K Prathibha P Harikumar Gana P P Viswanathan Sheeba George Gana P P Murali Mb Harikumar Akhil Raj P Sachin KC Vismaya P P Remya T K Vinay Goyal Ajan Murali MB Arun Kumar Roshan Jose Anagha S Rahul Krishna Sharma Sunija Jaseema Jaleel Athira Mungath Lenin Tk Reena Akhil Raj P Prathibha P Divya Suresh Jithesh Bijoy Sachin Remya Akhil Raj Murali Lenin Sachin Kc Dileepkumar Arun Mahesh Reetha Prathibha P Jaseema Jaleel Arun Bijoy Athira Mungath Sachin Kc Vinay Goyal Reena Divya Suresh Gana P P Dileepkumar Jithesh Roshan Jose Akhil Raj P Murali Mb Lenin Tk Viswanathan Sunija Murali MB Rahul Krishna Sharma Remya T K Sachin KC Anagha S Vismaya P P Mahesh Reetha Arun Kumar Ajan Akhil Raj P Sheeba George Harikumar Akhil Raj P Rajan Khobragade Viswanathan Lenin Tk Anagha S Athira Mungath Dileepkumar Murali Mb Sachin KC Sunija Divya Suresh Vismaya P P Jaseema Jaleel Arun Kumar Ajan Rahul Krishna Sharma Arun Vinay Goyal Reetha Mahesh Akhil Raj P Murali MB Sachin Kc Gana P P Bijoy Reena Harikumar Sheeba George Jithesh Roshan Jose Remya T K Prathibha P Divya Suresh Mahesh Murali MB Sachin KC Ajan Akhil Raj P Reena Athira Mungath Vismaya P P Vinay Goyal Murali Mb Anagha S Arun Kumar Sachin Kc Lenin Tk Reetha Viswanathan Jithesh Jaseema Jaleel Bijoy Dileepkumar Remya T K Roshan Jose Gana P P Sheeba George Akhil Raj P Arun Rahul Krishna Sharma Harikumar Sunija Prathibha P Murali MB Dileepkumar Arun Kumar Rahul Krishna Sharma Harikumar Reetha Anagha S Vismaya P P Arun Akhil Raj P Athira Mungath Lenin Tk Jithesh Akhil Raj P Jaseema Jaleel Ajan Reena Sachin KC Sunija Mahesh Sachin Kc Divya Suresh Viswanathan Vinay Goyal Bijoy Roshan Jose Sheeba George Remya T K Murali Mb Gana P P Prathibha P Bijoy Vismaya P P Divya Suresh Prathibha P Ajan Murali MB Jaseema Jaleel Gana P P Viswanathan Reetha Roshan Jose Akhil Raj P Sachin Kc Rahul Krishna Sharma Akhil Raj P Remya T K Sunija Lenin Tk Mahesh Athira Mungath Harikumar Arun Vinay Goyal Murali Mb Sheeba George Anagha S Arun Kumar Jithesh Sachin KC Reena Dileepkumar Reetha Remya T K Bijoy Mahesh Vinay Goyal Lenin Tk Murali MB Sachin KC Anagha S Ajan Harikumar Divya Suresh Viswanathan Arun Kumar Roshan Jose Gana P P Dileepkumar Athira Mungath Rahul Krishna Sharma Jithesh Sheeba George Sachin Kc Reena Sunija Akhil Raj P Akhil Raj P Arun Vismaya P P



Department of Health Services

May 2026

Jaseema Jaleel Vismaya P P Athira Mungath Reena Sunija Vinay Goyal Harikumar Remya T K Dileepkumar Sheeba George Sachin Kc Viswanathan Arun Kumar Gana P P Arun Jithesh Lenin Tk Divya Suresh Ajan Mahesh Murali Mb Roshan Jose Rahul Krishna Sharma Anagha S Rajan Khobragade Reetha Akhil Raj P Bijoy Sachin KC Murali MB Akhil Raj P Prathibha P Ajan Dileepkumar Anagha S Harikumar Reetha Murali Mb Akhil Raj P Sheeba George Reena Murali MB Roshan Jose Athira Mungath Vismaya P P Jaseema Jaleel



# PANDEMIC MANAGEMENT PLAN

## Kannur

Bijoy Arun Arun Kumar Akhil Raj P Mahesh Gana P P Jithesh Remya T K Vinay Goyal Divya Suresh Lenin Tk Sachin Kc Sachin KC Rahul Krishna Sharma Viswanathan Prathibha P Sunija Akhil Raj P Divya Suresh Arun Kumar Jithesh Mahesh Ajan Athira Mungath Reetha Arun Rahul Krishna Sharma Murali Mb Viswanathan Sachin Kc Jaseema Jaleel Bijoy Dileepkumar Anagha S Vinay Goyal Sunija Akhil Raj P Lenin Tk Vismaya P P Sheeba George Sachin KC Roshan Jose Reena Murali MB Remya T K Prathibha P Harikumar Gana P P Viswanathan Sheeba George Gana P P Murali Mb Harikumar Akhil Raj P Sachin KC Vismaya P P Remya T K Vinay Goyal Ajan Murali MB Arun Kumar Roshan Jose Anagha S Sachin Remya Akhil Raj Murali Lenin Rahul Krishna Sharma Sunija Jaseema Jaleel Athira Mungath Lenin Tk Reena Akhil Raj P Prathibha P Divya Suresh Jithesh Bijoy Sachin Kc Dileepkumar Arun Mahesh Reetha Prathibha P Jaseema Jaleel Arun Bijoy Athira Mungath Sachin Kc Vinay Goyal Reena Divya Suresh Gana P P Dileepkumar Jithesh Roshan Jose



Department of Health and Family Welfare

Government of Kerala

[www.health.kerala.gov.in](http://www.health.kerala.gov.in)

**KERALA.HEALTH**



# PANDEMIC MANAGEMENT PLAN

## KANNUR DISTRICT 2026

Kannur District, Kerala

PREPARED BY  
DISTRICT MEDICAL OFFICE KANNUR  
KERALA

## 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 MPox 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 by 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 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**

**Addl Chief Secretary**

**Health and Family Welfare Dept.**

## 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 inflexion point for public health systems worldwide. It 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 learned 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.

**Director of Health Services**

**Date: 4/6/2026**

## Message



Pandemic preparedness begins at the grassroots level, where the health system directly connects with the community. At this level, priority is given to early detection of cases, effective surveillance, timely treatment, and appropriate referral services. Efforts are being made to strengthen the preparedness of all health institutions in the district through regular training of healthcare personnel, ensuring the availability of essential medicines and equipment, and enhancing coordination with Local Self Government Institutions and community health workers. Public awareness and community participation are key pillars of an effective pandemic response. By promoting preventive practices and encouraging timely health-seeking behavior, we can effectively manage and mitigate public health emergencies.

Through collective action and proactive planning, we can safeguard the health and well-being of our community and build a resilient healthcare system.

Dr Sachin KC  
District Medical Officer  
Kannur District Kerala

## **LIST OF CONTRIBUTORS**

<b>SL. NO.</b>	<b>CONTRIBUTORS</b>
<b>1.</b>	<b>DR. SACHIN KC, DMO(I/C), DSO, KANNUR</b>
<b>2.</b>	<b>DR REMYA T K, JAMO</b>
<b>3.</b>	<b>DR. AKHIL RAJ P, DISTRICT EPIDEMIOLOGIST</b>
<b>4.</b>	<b>SRI. MURALI MB, TECHNICAL ASSISTANT GR.II</b>
<b>5.</b>	<b>SRI. LENIN TK, DISTRICT DATA MANAGER</b>

## **EXECUTIVE SUMMARY**

The District Medical Office (DMO) serves as the central administrative authority for the planning, implementation, coordination, and supervision of all public health activities within the district. Functioning as the nodal point of health governance, the DMO ensures that national and state health policies and programmes are effectively translated into action at the field level. From an administrative perspective, the DMO is responsible for strategic planning, resource allocation, and overall management of the district health system. It oversees a comprehensive network of healthcare institutions, including Primary Health Centres (PHCs), Community Health Centres (CHCs), Taluk Hospitals, and the District Hospital, ensuring uniform standards of service delivery and operational efficiency.

The office plays a crucial role in interdepartmental coordination, monitoring programme implementation, and maintaining accountability across all health institutions. It supervises human resources, logistics, supply chain management, and infrastructure development to ensure uninterrupted healthcare services.

District Medical Office works closely with multiple stakeholders such as government Hospitals, Private Hospitals and Clinics Laboratories (Government and Private) Local Self Government Institutions (Panchayaths, Municipalities, Corporations) National Health Mission (NHM), ICDS), Centres (ICDS), ASHA Workers and Field Health Staff Educational Institutions (Schools and Colleges), Water Authority and Sanitation Departments, Veterinary Department (for zoonotic disease surveillance), Police and Revenue Departments (during outbreaks and emergencies), Non-Governmental Organizations (NGOs) and Community-Based Organizations etc. to ensure effective implementation of public health programmes, disease surveillance, and healthcare delivery. Regular review meetings and data-based planning help in improving service delivery and timely interventions. Despite challenges such as increasing patient load, infrastructure limitations, and manpower constraints, the DMO continues to strengthen healthcare services through better planning, digital health initiatives, and capacity building. Special emphasis is given to preventive healthcare, early detection of diseases, and timely referral services.

Kannur district, with its coastal belt, midland regions, and hilly areas, has a distinct public health risk profile shaped by heavy rainfall, seasonal flooding, and dense population clusters. The district is prone to vector-borne diseases such as dengue and chikungunya, water-borne illnesses, and leptospirosis, especially during monsoon periods. In addition, factors like migrant population movement, urbanization, occupational exposures (including fisheries and plantation work), and changing climatic patterns contribute to the evolving epidemiological scenario.

The Kannur District Pandemic Preparedness Plan integrates preparedness activities across all Local Self Government levels into a coordinated and action-oriented framework. The plan aims to strengthen prevention, early identification of outbreaks, timely response, effective containment, and post-outbreak recovery.

Key focus areas include:

- Strengthening disease surveillance and early warning mechanisms
- Effective functioning of Rapid Response Teams (RRTs)
- Assessment and strengthening of health system capacity, including manpower and logistics
- Coordination with local self-government institutions and line departments
- Public awareness, risk communication, and community participation
- Ensuring uninterrupted delivery of essential health services during emergencies

The district continues to implement major national health programmes such as the National Health Mission, National Tuberculosis Elimination Programme, NPCDCS, and surveillance activities under the Integrated Disease Surveillance Programme, enabling systematic monitoring and timely public health interventions. The plan also identifies operational gaps such as the need for better digital data integration, improved infrastructure, enhanced emergency surge capacity, and streamlined supply chain management. Future strategies focus on real-time data monitoring systems, strengthening laboratory support, conducting regular training and mock drills, and periodic review of preparedness measures.

Overall, Kannur district is focused on developing a responsive and resilient health system that can effectively manage pandemics and other public health emergencies, while maintaining essential health services. Through coordinated efforts, evidence-based strategies, and strong community engagement, the district aims to ensure better health outcomes and improved public health security. District Medical Office plays a vital role in protecting public health, reducing disease burden, and improving the quality of life of the population in the district

**LIST OF ABBREVIATIONS**

<b>LSGD/LSGI</b>	<b>Local Self Government Department / Local Self Government Institution</b>
<b>DMO</b>	<b>District Medical Officer</b>
<b>IDSP</b>	<b>Integrated Disease Surveillance Programme</b>
<b>NDMA</b>	<b>NATIONAL DISASTER MANAGEMENT AUTHORITY</b>
<b>PPE</b>	<b>PERSONAL PROTECTIVE EQUIPMENT</b>
<b>ICMR</b>	<b>INDIAN COUNCIL OF MEDICAL RESEARCH</b>
<b>CD</b>	<b>COMMUNICABLE DISEASES</b>
<b>NCD</b>	<b>NON-COMMUNICABLE DISEASES</b>

## TABLE OF CONTENTS

INTRODUCTION	9
Background of the PPP	9
District AT A GLANCE	9
<b>Maps - LSG-based (Mention source also)</b>	10
INTEGRATED HEALTH INFRASTRUCTURE MAP OF <a href="#">Kannur</a> District	11
Health Infrastructure Map	12
GENERAL PROFILE OF THE District	15
Background of the District	15
Demographic and Vulnerable Population	16
Clinical Vulnerability	17
INFRASTRUCTURE & RESOURCE INVENTORY	19
Health Facility Directory & Basic Capacity in the DISTRICT	19
Private Clinics	20
Healthcare Education & Training Institutions	20
Specialised Services & Emergency Inventory	21
Oxygen & Diagnostic Capacity	21
Diagnostics facility mapping at the DISTRICT level	22
Laboratory Identification & Basic Details	22
Social and Community Infrastructure for the surge plan	23
Human resources	25
<b>Medical &amp; Clinical Personnel</b>	25
<b>Public Health &amp; Field-Level Workforce</b>	25
Community & Support Cadre	26
Community Organizations	27
Administrative & Emergency Services	28
Information regarding resources	28
ONE HEALTH & ENVIRONMENTAL SURVEILLANCE	29
Animal & Bird Population	29
Veterinary Infrastructure	30
Veterinary Doctors & Workforce	31
High-Risk Interface Points (Surveillance Sites)	32
Environmental Risk Mapping	33
Disease Seasonality Mapping	34
Vulnerability Mapping	35
	14

EPIDEMIOLOGICAL TRENDS (2021–2025)	36
Disease Burden among human beings(Last 5 Years)	36
Seasonal Trend Analysis	38
Outcome-Based Trend Analysis- 2025	40
Transmission Trend- 2025	41
Integrated Disease Hotspot Map (2021–2025)	43
<b>Assessing Core Capacities</b>	46
<b>Mapping of existing plans and committees</b>	46
<b>Assessment of Core capacities</b>	46
<b>Build &amp; Organise critical capacities</b>	47
<b>Governance &amp; Structure</b>	48
<b>Planning Principles &amp; Legal Considerations</b>	48
<b>Plan Development &amp; Approach</b>	49
<b>State Systems &amp; Emergency Coordination</b>	49
<b>Surveillance &amp; Laboratory Systems</b>	49
<b>Community Protection &amp; Communication</b>	50
<b>Clinical Care &amp; Essential Services</b>	50
<b>Access to Countermeasures</b>	51
<b>10. Plan Activation &amp; Operational Triggers</b>	51
<b>Health system surge</b>	51
<b>Supplies and logistics</b>	52
<b>Map and formalize supply chains with contingency routes, framework agreements, and a simple inventory tracking format.</b>	53
<b>Preparedness and Response Protocol at District Level</b>	53
Constitution of One Health Committee	54
<b>Pandemic Response Workforce</b>	56
Activities and Measures before and during Pandemic	58
PHASE 1 - Alert / Preparation	58
<b>Identification of Quarantine and Isolation Facilities</b>	60
<b>Risk Communication and Community Preparedness</b>	60
<b>Protection of Vulnerable Groups</b>	61
<b>Clinical Dependency Mapping</b>	62
PHASE 2 - Active Response	62
Standard Screening Protocol	64
<b>CONTROL ROOM MANDATES</b>	66
<b>PHASE 3 - Surge Capacity</b>	91
<b>Conversion of Community Facilities</b>	91

<b>Recovery and rehabilitation phase</b>	92
CONCLUSION	92
RECOMMENDATIONS	94
<b>MOCKDRILL SCENARIOS</b>	95
<b>Communication</b>	96
Communication strategies	97
<b>Pandemic Preparedness Capacity Building &amp; Training Plan</b>	98
ANNEXURE	102
1.IMPORTANT PHONE NUMBERS	102
<b>Annexure 1: LSG Baseline Data Collection Format</b>	108
<b>A. Baseline data</b>	108
<b>B. Demography</b>	108
<b>C. Vulnerable Populations &amp; Social Risks</b>	109
<b>D. Health System &amp; Service Readiness</b>	109
<b>E. Points of Entry &amp; Mobility</b>	110
<b>F. Water, Sanitation &amp; Hygiene (WASH)</b>	110
<b>G. Zoonotic Risks &amp; One Health</b>	111
<b>H. Climate &amp; Disaster Risks (Pandemic Amplifiers)</b>	111
<b>I. Critical Infrastructure &amp; Logistics</b>	112
<b>J. Risk Communication &amp; Community Networks</b>	112
<b>K. Preparedness Planning &amp; Governance</b>	113
<b>L. Surveillance &amp; Data Systems</b>	114
<b>M. Additional Notes &amp; Observations</b>	114

## INTRODUCTION

Pandemics are large-scale outbreaks of infectious diseases that can spread rapidly across countries and continents, affecting health systems, economies, and daily life. The recent experience of the COVID-19 pandemic highlighted the importance of being well-prepared to handle such emergencies in a timely and effective manner. A Pandemic Preparedness Plan is essential to ensure that health systems are ready to prevent, detect, and respond to emerging public health threats. It provides a structured framework for coordinated action among healthcare institutions, government departments, and community stakeholders. A pandemic affects not only health but also livelihoods, mental health, and education

This plan focuses on strengthening key areas such as disease surveillance, early warning systems, laboratory services, case management, infection prevention and control, and risk communication. It also emphasizes the role of frontline health workers and community participation in early detection and containment of diseases.

Kannur district, known as the “Land of Looms and Lores,” has a special health situation in Kerala. The district stretches from the Lakshadweep Sea to the Western Ghats, with different types of land and living conditions. It has a high population density, which increases the risk of fast spread of diseases. In Kannur, there is no clear separation between urban and rural areas. People travel frequently, and the road and transport systems are well connected. So, a disease starting in a coastal area can quickly spread to highland regions like Iritty. Kannur also has an important international airport, Kannur International Airport, which brings travelers from different parts of the world. This increases the risk of new diseases entering the district. Therefore, the district must always be prepared. A pandemic plan should not be fixed—it should be updated regularly based on data and past experiences like Nipah and COVID-19. The District Medical Office plays a central role in protecting the health of the population, especially during public health emergencies such as pandemics. In recent years, global events like the COVID-19 pandemic have shown how quickly infectious diseases can spread and affect all aspects of life, including health systems, livelihoods, and the economy. This Pandemic Preparedness Plan has been developed to ensure that the district is ready to prevent, detect, and respond effectively to any future outbreaks. It provides a clear framework for coordinated action among healthcare institutions, government departments, and community-level workers. The plan focuses on

strengthening surveillance systems, early warning mechanisms, laboratory capacity, and clinical management. Special attention is given to a decentralized healthcare system, where Primary Health Centres and Family Health Centres play a major role in early detection and management, reducing the burden on higher-level hospitals.

The healthcare system in Kannur is based on a three-tier system:

- Primary Health Centres (PHCs) and Family Health Centres (FHCs)
- Secondary hospitals
- Tertiary hospitals like Government Medical College, Pariyaram

PHCs and FHCs act as the first point of care. Public Health members play an important role at the community level. During outbreaks, they help in surveillance and containment at the ward level. This system helps manage mild cases locally, so that major hospitals are not overcrowded.

Kannur follows the One Health approach, which means human health, animal health, and environmental health are all connected. Since the district has forests and agriculture, diseases can spread from animals to humans (zoonotic diseases).

To prevent this, the District Medical Office works together with veterinary and environmental departments. A central digital system will provide accurate information to avoid misinformation. Tools like GIS mapping help identify affected areas, and real-time dashboards track hospital beds and oxygen availability.

This plan is not just a document. It is a promise by the administration to protect the health and well-being of the people, even during difficult times. The document also highlights the need for interdepartmental coordination, risk communication, and use of technology such as digital reporting systems and real-time data monitoring to ensure transparency and timely decision-making.

Overall, this plan serves as a practical guide and strategic framework to enhance the district's preparedness, ensuring that essential health services continue uninterrupted while effectively managing any public health crisis

**Table 1: DISTRICT PROFILE**

Head quarters	Kannur
Location (of the Headquarters)	North Latitudes - 11° 40' to 12° 48' East Longitudes- 74° 52' to 76° 56'
Total area(district)	2966 Sq.Km.
District boundaries	North -Kasaragod district, South –Koorg district of (KarnatakaState), Kozhikode and Wayanad districts, West – LakshadweepSea, East - Western Ghats

**Table 2: ADMINISTRATIVE DIVISIONS OF THE DISTRICT**

Revenue divisions	2
Taluks	5
Blocks	11
Villages	132
DistrictPanchayats	1
Gram Panchayats	71
Municipalities	9
Corporations	1

● Ward division -

District total Wards	Houses	Population	Migrants	Wells	Hot spots	Ed. Institutions	Hosp pvt/govt.
1647	5.8lks	2968202	86837	493226	223	1595	1025

DISTRICT AT A GLANCE

Figure : 1 GEOGRAPHICAL BOUNDARIES OF KANNUR DISTRICT ,KERALA

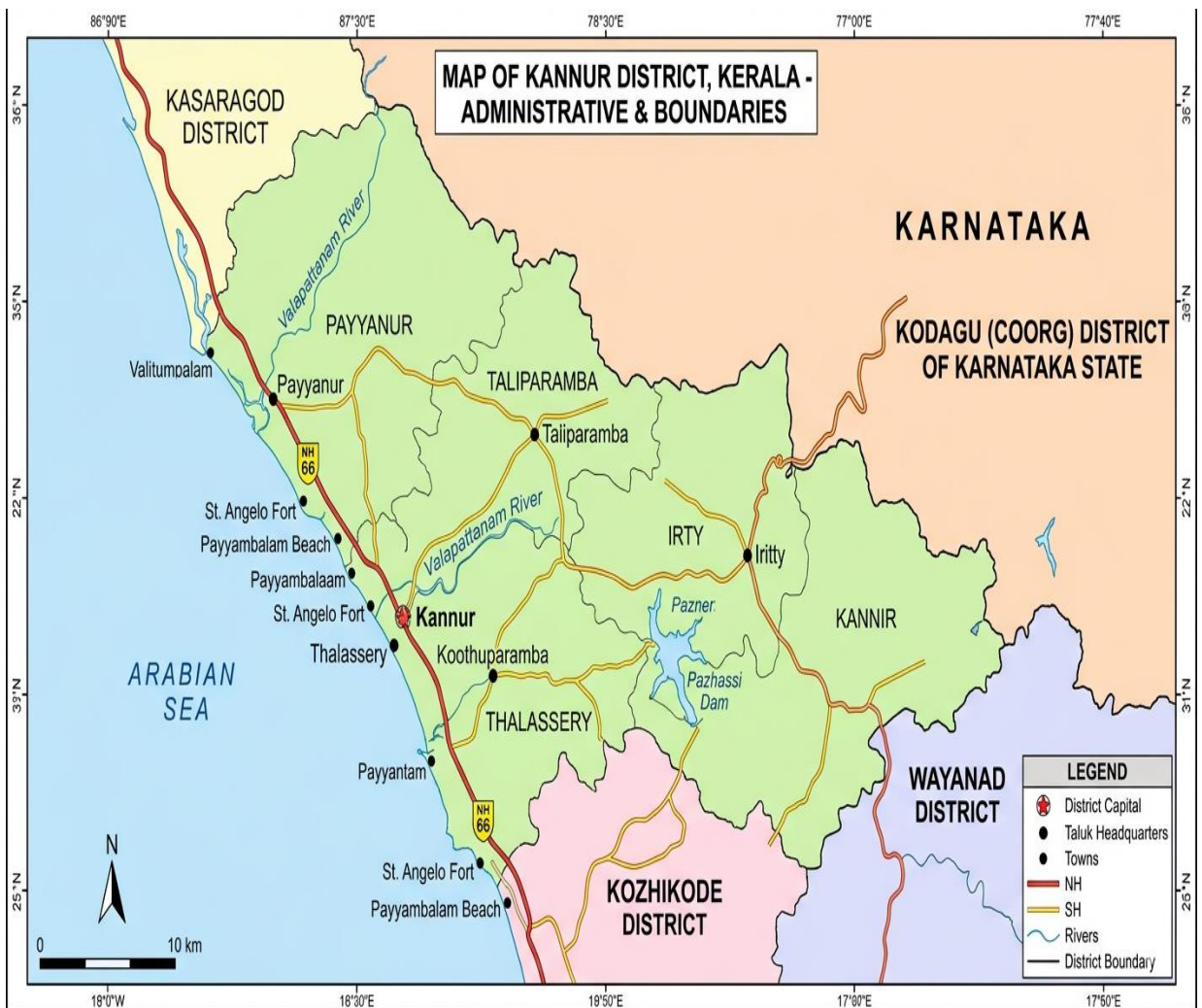






Figure 3: TRANSPORTATION NETWORK MAP OF KANNUR DISTRICT



Figure : 4 River map Kannur kerala

INTEGRATED HEALTH INFRASTRUCTURE MAP OF DISTRICT

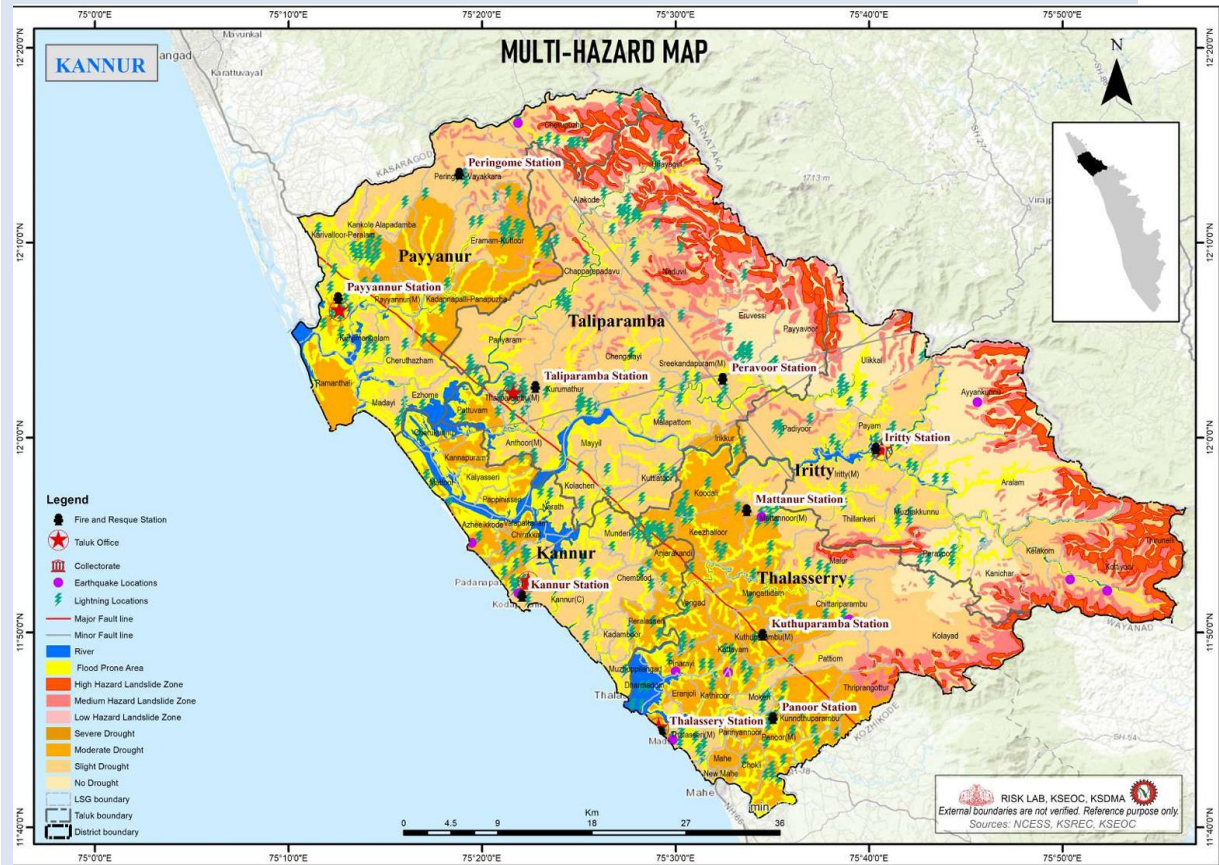


Figure : 5 DISASTER -PRONE AREAS KANNUR KERALA

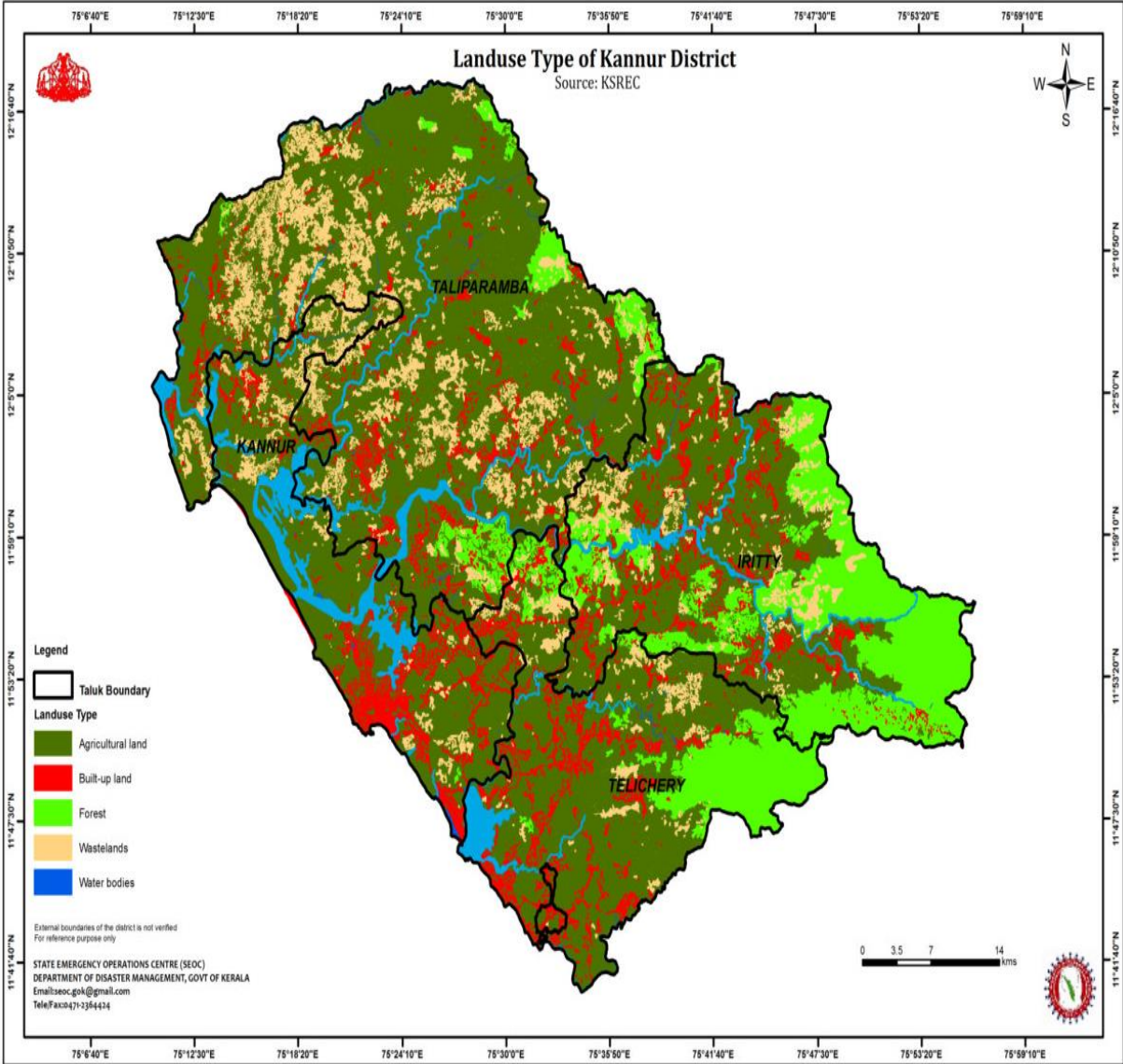


Figure 6: LAND USE TYPES MAP OF KANNUR DISTRICT

HOT SPOT MAP

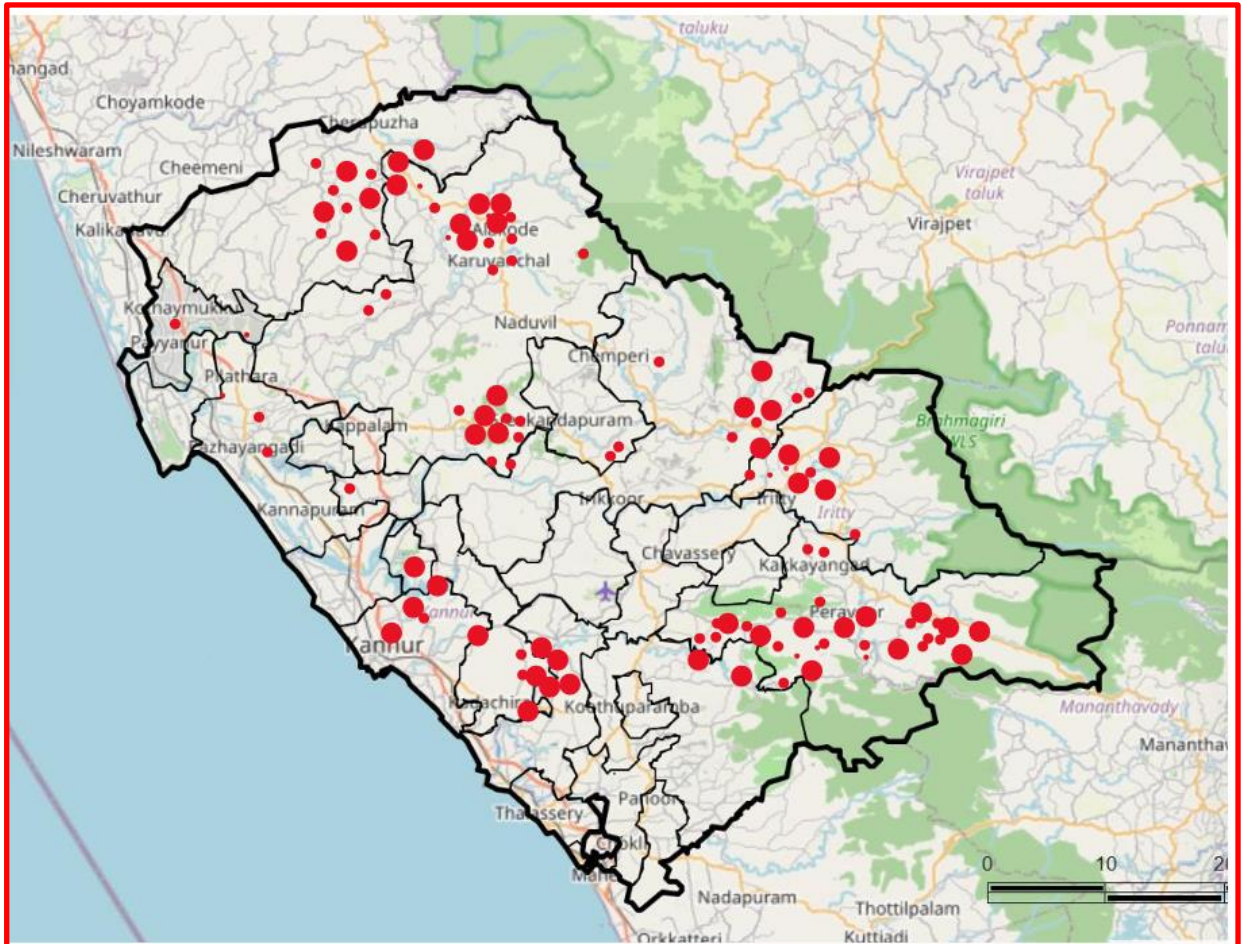


Figure 7 : Dengue Hot Spot 2025

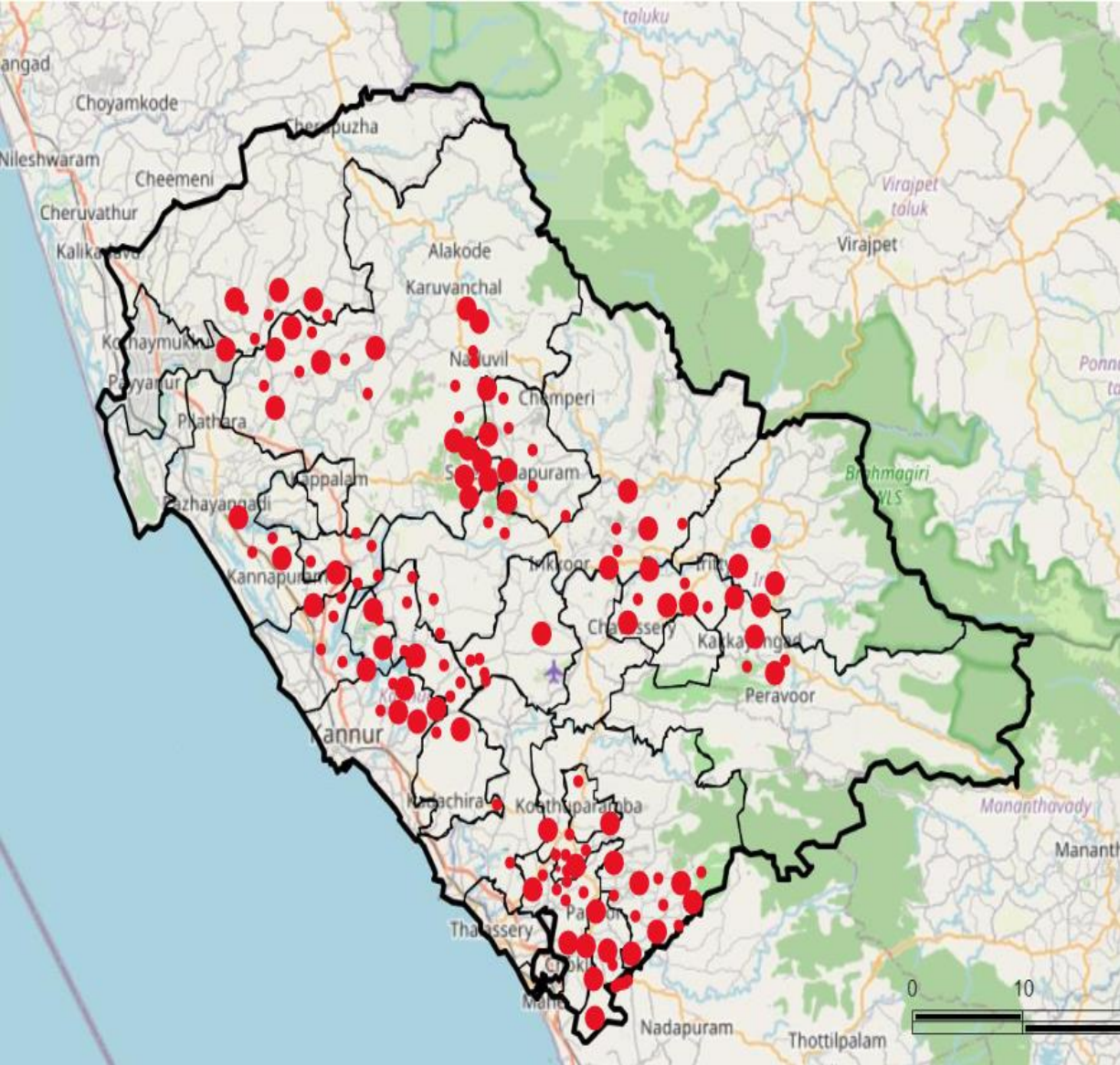


Figure : 8 Hepatitis A Hot Spot 2025

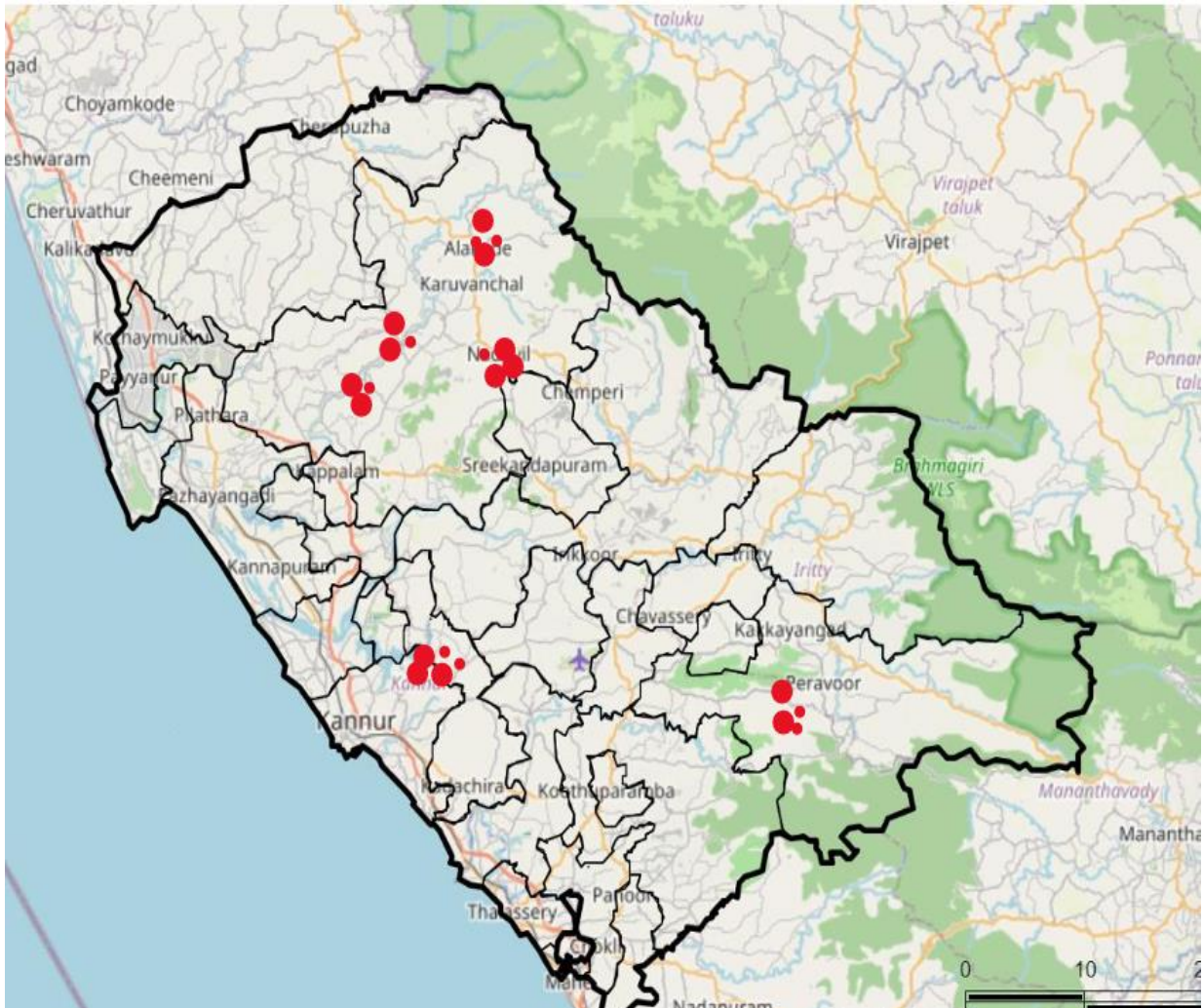


Figure : 9 Leptospirosis Hot Spot 2025

## GENERAL PROFILE OF THE DISTRICT

### BACKGROUND OF THE DISTRICT

Kannur district derives its name from its headquarters, Kannur town. The earlier name “Cannanore” is an anglicized form of the Malayalam word “Kannur.” Geographically, the district is divided into three distinct regions: highlands, midlands, and lowlands. The highland region mainly consists of mountainous terrain, the midlands are characterized by undulating hills and valleys, and the lowlands are relatively narrow, comprising rivers, deltas, and coastal belts along the Arabian Sea.

The district experiences a humid tropical climate with a hot season extending from March to May. This is followed by the South-West monsoon, which lasts until September and contributes the majority of the annual rainfall. October and November represent the retreating monsoon season, followed by the North-East monsoon extending up to February, although rainfall usually declines after December. During April and May, the mean daily maximum temperature reaches around 35°C. The district receives an average annual rainfall of approximately 3438 mm, with more than 80% occurring during the South-West monsoon period. July typically records the heaviest rainfall, accounting for nearly 68% of the annual total.

Agriculture is the primary livelihood for a significant proportion of the population. Major crops cultivated include paddy, arecanut, coconut, pepper, cashew, and plantation crops such as rubber. However, agricultural productivity is often affected by plant diseases such as brown leaf spot, blast, and stack burn in paddy; bunchy top and leaf spot in banana; bud rot, leaf rot, and stem bleeding in coconut; and abnormal leaf fall and pink disease in rubber.

The district is also prone to the occurrence of communicable diseases and seasonal epidemics, including viral fevers, leptospirosis, hepatitis, chikungunya, dengue, cholera, filariasis, and typhoid. Coastal, urban, and hilly regions are particularly vulnerable, with tribal settlements in high ranges and fishing communities along the coast experiencing increased risk during the monsoon season. In light of global experiences from pandemics such as COVID-19, strengthening district-level preparedness has become a critical priority. Kannur district has been progressively enhancing its capacity to prevent, detect, and respond to public health emergencies through an integrated approach.

The geographical landscape of many Panchayats within Kannur district is predominantly low-lying, characterized by extensive paddy fields, river networks, canals, and backwaters. This terrain significantly influences the local microclimate and presents challenges for transportation, emergency response, and service delivery, particularly during periods of heavy rainfall and flooding. Administratively, Panchayats are divided into multiple wards, with populations largely dependent on traditional livelihoods such as agriculture, fishing, coir processing, and coconut-based industries. In recent years, tourism and service-sector employment have shown gradual growth. The area also accommodates a diverse workforce, including migrant labourers engaged in construction and allied sectors.

From a public health and disaster management perspective, the Local Self Government Institution (LSGI) remains vulnerable to seasonal flooding, waterborne diseases, and vector-borne diseases such as dengue and leptospirosis. Major flood events, including the 2018 Kerala floods, have caused significant damage to life, livelihoods, and infrastructure, highlighting the need for enhanced preparedness and coordinated response mechanisms. In this context, the development of a localized, data-driven Auxiliary Infrastructure and Logistical Resource Map is crucial for effective planning, timely emergency response, and sustainable development. Such mapping facilitates identification of critical resources, improves accessibility during disasters, and strengthens the overall resilience of the community.

TABLE 1: BACKGROUND OF DISTRICT	
Description	Details
Name of DISTRICT	Kannur
Number of LSGs	81
Total area (sq. km)	2584.134
Population(Projected)	2968202
Population density	persons/sq km
Terrain (coastal/low-lying/backwaters/foothills, etc.)	Backwater & wetland, hilly , plains and wetlands, Coastal planes, low-lying

TABLE 1: BACKGROUND OF DISTRICT

Description	Details
Number of rivers passing through DISTRICT	107
Number of water bodies in the DISTRICT	2679
Number of educational institutions	1595
Factories / small-scale industries	634
Flood-prone wards and LSGs	215
Landslide-prone wards and LSGs	171
Death Management and Disposal Facilities (mortuaries/crematorium, including electric)	260
Auditoriums/Marriage halls/convention centres/community halls	330

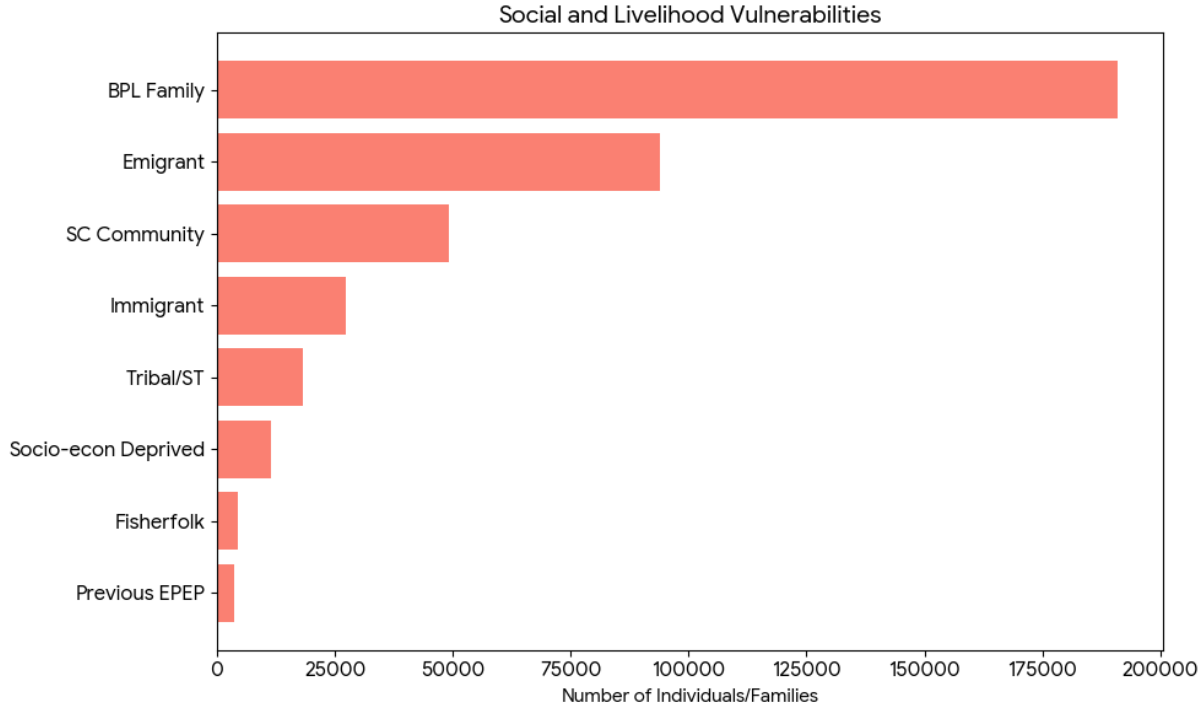
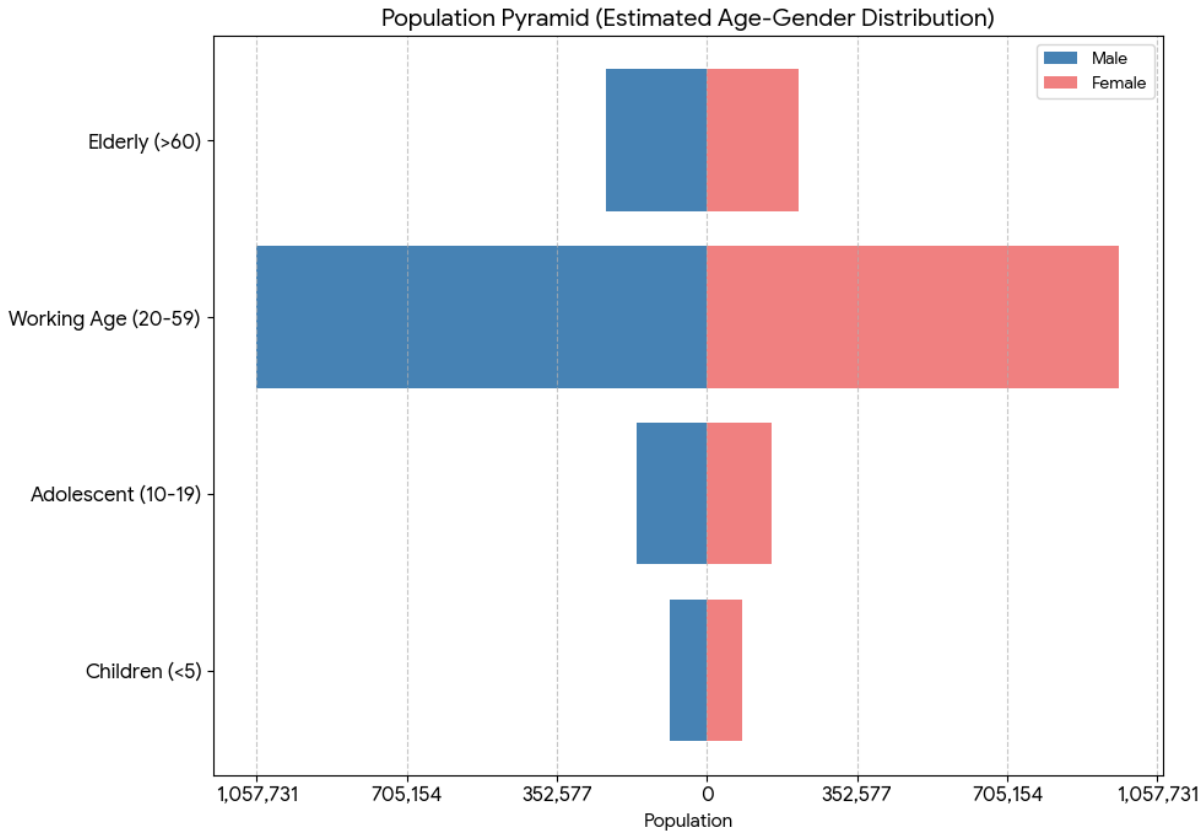
DEMOGRAPHIC AND VULNERABLE POPULATION

Understanding the demographic composition and vulnerable population groups is essential for pandemic preparedness. Children, 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)
<b>DEMOGRAPHIC PROFILE</b>	
Total population	2968202
Male	1837392
Female	1682091
Transgender	350
Children under 5	170720

Description		Details (in numbers)
<b>DEMOGRAPHIC PROFILE</b>		
Adolescent		318498
Elderly (>60)		452723
<b>SOCIAL/LIVELIHOOD VULNERABILITY</b>		
Previous EPEP family		3561
BPL family		191029
Tribal communities		18194
Migration	Immigrant	27375
	Emigrant	94048
Socio-economically deprived		11491
Fisherfolk		4513
SC Community		49298
ST Community		18194

**Graphs:** Population pyramid (if possible) for seeing if your DISTRICT has a high "dependency ratio" (lots of children and elderly compared to working adults).



## 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	19505
Lactating mothers	34004
Bedbound patients	10817
Patients under palliative care other than bedbound	14857
Patients on Haemodialysis	2550
Patients on CAPD	1230
Cancer patients (currently on treatment)	5344
Haemophilic patients	6704
Mentally challenged	3883
Differently abled	9368
Diabetic patients	173706
Hypertensive patients	230896
TB patients	702

## Major Festivals &amp; Events specific to the KANNUR DISTRICT

<b>SL NO</b>	<b>Fairs and Festivals Name</b>	<b>Month</b>
1	<b>Theyyam Season (Various Temples)</b>	November to May
2	<b>Puthari Thiruvappana (Parassinikadavu)</b>	Early December
3	<b>Athiikkavu Vela</b>	January
4	<b>Karamel Muchilottu Perumkaliyattam</b>	January
5	<b>Andalur Kavuv Festival</b>	February/March (Medam)
6	<b>Trichambaram Utsavam (Taliparamba)</b>	March (Kumbham 22 - Meenam 6)
7	<b>Sundareswara Temple Festival (Talap)</b>	March/April
8	<b>Kottiyor Vysakha Mahotsavam</b>	May to June
9	<b>Jagannath Temple Festival (Thalassery)</b>	June/July
10	<b>Onam Fair (Police Maidan)</b>	Aug-Sept (Chingam)
11	<b>Aqua Fest (Police Maidan)</b>	Variable (Often early year)

## INFRASTRUCTURE & RESOURCE INVENTORY

### HEALTH FACILITY DIRECTORY & BASIC CAPACITY IN THE DISTRICT

This section provides an overview of the healthcare infrastructure available within the DISTRICT area. It outlines the distribution and basic capacity of health facilities that form the backbone of service delivery during routine times and public health emergencies.

Family Health Centres (FHCs) and Community Health Centres (CHCs) generally function as the first point of contact for the community, providing essential outpatient and inpatient services. General Hospitals (GH) and Medical College Hospitals (MCH), where accessible, serve as the main referral centres for advanced diagnostics, specialist care, and critical services during public health emergencies. This inventory helps identify existing strengths, gaps, and potential surge capacity that can be mobilised during a pandemic or disaster.

Sl.no.	Health Facility	Type of Facility (MCH/GH/CHC/FHC/SC etc.)	Contact Number	Total beds	ICU Beds	Oxygen-Supported Beds	No. of Ventilator Support Beds	No. of ambulances
Government Healthcare Facilities								
1	GH Thalassery	GH	04902327450	541	17	159	12	3
2	DH Kannur	DH		616/566	10	248	18	3
3	CTC ANJARAKANDY	FHC	04972852530	2	0	0	0	0
4	THQH Thaliparamba	THQH	04602203298	157	0	0	0	3
5	TH Payyannur	TH	04985205716	150	0	150	0	2

TABLE 5. HEALTH FACILITY RESOURCE SUMMARY								
Sl.no.	Health Facility	Type of Facility (MCH/GH/CHC/FHC/SC etc.)	Contact Number	Total beds	ICU Beds	Oxygen-Supported Beds	No. of Ventilator Support Beds	No. of ambulances
6	TH Peravoor	TH	04902445355	100	0	4	1	3
7	THALUK HOSPITAL	TH	04902364150	206	13	4	1	4
8	W&C Mangattuparamba	W&C	0497 278 0280	135	12	47	5	1
9	TH Iritty	TH	04902493180	48	0	0	0	2
10	ESI Hospital Thottada	ESI	04972835258	50	0	0	0	0
Private Healthcare Facilities								
1	Malabar Cancer Center	PVT		220	12	5	5	0
2	SPECIALITY HOSPITAL	PVT		15	2	1	1	5
3	DHANALAKSHMI HOSPITAL	PVT		50	10	5	3	4
4	BMH Chala	Super speciality		170	63	170	24	0
5	KANNUR MEDICAL COLLEGE ANJARA KANDY	MCH		170	30	8	8	0

TABLE 5. HEALTH FACILITY RESOURCE SUMMARY								
Sl.no.	Health Facility	Type of Facility (MCH/GH/CHC/FHC/SC etc.)	Contact Number	Total beds	ICU Beds	Oxygen-Supported Beds	No. of Ventilator Support Beds	No. of ambulances
6	BM HOSPITAL	PVT		20	0	0	0	0
7	Co-operative Hospital cherupuzha	PVT		25	0	25	0	0
8	St' Sebastian Hospital cherupuzha	PVT		25	0	9	0	1
9	AMALA HOSPITAL	PVT		150	10	5	3	1
10	WELNESS HEALTHCARE	PVT		0	0	0	0	0
11	SKY HOSPITAL	PVT		140	3	5	3	1
12	SM HOSPITAL			20	0	0	0	0
13	KARUNYA HOSPITAL	PVT		35	0	0	0	1
14	LM HOSPITAL	PVT		44	3	5	0	0
15	SM HOSPITAL	PVT		30	2	2	0	.0
16	H@C HOSPITAL	PVT		52	5	14	0	1
17	MISSION HOSPITAL	PVT		40	3	5	0	0

TABLE 5. HEALTH FACILITY RESOURCE SUMMARY								
Sl.no.	Health Facility	Type of Facility (MCH/GH/CHC/FHC/SC etc.)	Contact Number	Total beds	ICU Beds	Oxygen-Supported Beds	No. of Ventilator Support Beds	No. of ambulances
18	ASHRAY HOSPITAL	PVT		32	5	6	0	0
19	TRUST LINE MULTY SPECIALITY CLINIC	PVT		3	0	1	0	0
20	CO OP HOSPITAL KUTHUPARAMBA  CHRISSTURJA HOSPITAL	PVT		15,20	2	1	0	0
21	Koyili hospital	PVT		350	15	15	5	5
22	Jyothish eye hospital	PVT		3	0	5	0	0
23	Sunrises	PVT		5	0	0	0	0
1	46 AYUSH HOSPITALS							
2	127 AYUSH DISPENSARIES							

**PRIVATE CLINICS**

Private clinics are an essential part of pandemic preparedness, as they are often the first place people seek care when symptoms begin. In many communities, private clinics manage a significant share of outpatient visits and therefore play a critical role in early case detection, timely referrals, and disease surveillance. Having an up-to-date understanding of where these clinics are located, the services they provide, and how they are linked to the public health system helps ensure that no cases are missed during an outbreak. It also allows health authorities to engage private practitioners more effectively for reporting, risk communication, and coordinated response, strengthening the overall capacity of the health system to manage public health emergencies.

TABLE 6. PRIVATE CLINIC RESOURCE SUMMARY

Sl No .	Name of Clinic	Registered (Y/N)	Clinic (General / Speciality)	Speciality (if any)	Address	Diagnostic Facility (Y/N)	Ambulance Linkage (Y/N)
1	Karmal Clinical Labourtary	Yes	General	Lab	Thattaparambil Trade Point, Opp. Kerala Gramina Bank, Cherupuzha	Yes	No
2	Indian Medical Lab	Yes	General	Lab	Thirumeni Road, Cherupuzha	Yes	No
3	Neethy Diagnostic	Yes	General	Lab	Diagnostic Center Cherupuzha	Yes	No
4	Sini Memmorial	Yes	Speciality	Dental	Main Road Cherupuzha	No	No
5	Unity Dental Care	Yes	Speciality	Dental	Anjoor, Thozhiyoor, Kottapadi	No	no

					road		
6	Smile and Shine	Yes	Speciality	Dental	Dr. Muhammed Nizab, Near Bus stand, Cherupuzha	No	No
7	Marry Matha Kandavanam	No	Speciality	Dental	Dr. Sijo Sebastian, Thattassery Building,	No	No
8	V Care	No	Speciality	Dental	Dr. Tilvin Tom, Cherupuzha	No	No
9	Nithya Chaithanya	No	Speciality	Dental	Dr. Sha Menon, Cherupuzha	No	No
10	Co-operative Hospital	Yes	General	Hospital	Cherupuzha	Yes	Yes
11	St' Sebastian Hospital	No	General	Hospital	Cherupuzha	Yes	Yes
12	Leader Hospital		General	Hospital	Cherupuzha	Yes	Yes
13	Prasanth	No	Speciality	Dental	Cherupuzha	No	No
14	Dr. CK's Dental Care	No	Speciality	Dental	Cherupuzha	No	No
15	Karunya Medical	No	General	Hospital	Pulingome	Yes	NO

16	Indian Medical Lab	Yes	General	Lab	Cherupuzha	Yes	No
17	Uno Med Medical Labourtary	Yes	General	Lab	Cherupuzha	Yes	No
18	SMILE LOUNGE DENTAL CLINIC	PVT	DENTAL	DENTAL	<b>Iritty Road Chavassery</b>	Y	N
19	Shanthisanthi Health Care	pvt	general		Shanti Health Care, Near Muslin Palli, Iritty Main Road, Punnad		
20	Sherry health care	Y	Speciality	Dental	Chalad	Y	N
21	Meditech	Y	Speciality	Dental	chalad	Y	N
22	Dr Fadhils clinic	Y	Speciality	Dental	chalad	Y	N
23	Dr frbia crtho reheb sports medicine	Y	Speciality	Physio therapy	Madappally road ,pallikunnu	Y	N
24	Thanal veed	Y	Speciality	dialysis	padannappal am	Y	Y

#### HEALTHCARE EDUCATION & TRAINING INSTITUTIONS

This section tracks the educational infrastructure available, which is vital for human resource planning in the health sector.

Category of Institution	Govt	Private	AYUSH	Total
Medical Colleges	1	1	1	3
Nursing Colleges	1	7	0	8
Dental Colleges	1	2	0	3
Para-medical / Allied Health	2	4	0	6
Pharmacy Colleges	1	5	0	6

### SPECIALISED SERVICES & EMERGENCY INVENTORY

This section provides a detailed view of the specialized medical resources available to the community, focusing on emergency response and critical care capabilities. This table tracks the vital assets required for managing severe illnesses and emergencies across the Government, Private, and AYUSH sectors.

Item	Govt	Private	AYUSH	Total
Hospital beds	2656	4128	284	7068
Oxygen-generating systems(Y/N)	17	38	0	55
Oxygen-supported beds(Numbers)	38	1532	0	1570
Ventilator-supported beds	649	1532	0	2181

Item	Govt	Private	AYUSH	Total
ICU beds	374	256	0	630
Burns units	1	8	0	9
Blood centres	6	5	0	11
BLS ambulances	21	64	1	86
ALS ambulances	7	21	0	28
Dialysis facilities	19	40	0	59
Dispensaries	127	86	127	340
Medical store	30	350	26	411

#### OXYGEN & DIAGNOSTIC CAPACITY

Monitoring **oxygen and diagnostic capacity** is a critical component of public health preparedness, ensuring that the DISTRICT can handle both chronic care and sudden surges in respiratory or infectious diseases.

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
Government Healthcare Facilities							
FHC	NO	YES	YES	NO	NO	NO	NO

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
KURUMATHUR							
GH THALASSERY	1	YES	YES	YES	YES	0	1
CHC PINARAYI	NIL	NIL	1	0	0	0	0
PHC DHARMADAM	NO	NO	YES	NO	NO	NO	NO
FHC ULIKKAL	YES	NO	1	0	0	0	0
TH KUTHUPARAMBA	YES	YES	YES	NO	YES	NO	YES
FHC PERUVA	YES	YES	YES	NO	NO	NO	NO
FHC CHOKLI	NO	NO	YES	NO	NO	NO	NO

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
Private Healthcare Facilities							
MISSION HOSPITAL, TH ALASSERY	0	0	YES	YES	YES	CT	1
NEETHI LAB,PINARAY I	NIL	NIL	1	0	0	0	0
MPC HOSPITAL, ULIKKAL	YES	NO	1	1	1	0	0

**DIAGNOSTICS FACILITY MAPPING AT THE DISTRICT LEVEL**

The diagnostic capacity of every **G.P in kannur district** represents the "intelligence network" of our healthcare system. The speed and accuracy of disease identification depend entirely on the distribution and technical level of these facilities.

Item	Govt	Private	AYUSH	Total
General labs	92	454	8	554
Microbiology labs	15	79	0	94
RT-PCR labs	5	19	0	24

USG units	8	36	0	44
CT/MRI units	4	20	0	24

**LABORATORY IDENTIFICATION & BASIC DETAILS**

Sl. No.	Name of Laboratory	Ownership (Govt / Private / Academic)	Address	24x7 Services (Yes/No)	NABL / Govt Approved (Yes/No)
1	Karmal Clinical Labourary	Private	Thattaparambil Trade Point, Opp. Kerala Gramina Bank, Cherupuzha	No	No
2	Indian Medical Lab	Private	Thirumeni Road, Cherupuzha	No	No
3	Neethy Diagnostic	Private	Diagnostic Center Cherupuzha	No	No
4	Indian Medical	Private	Cherupuzha	No	
5	Medinova lab peringathur	Private	Medinova lab peringathur	No	
6	Asraya poly clinic and lab	Private	Asraya poly clinic and lab	No	
7	PHC Lab	Govt	Naduvil	No	
8	PHC Mekkunnu	Govt	Mekkunnu	No	

9	Nucleus	Private	Mekkonnu	Yes	
10	CHC Pinarayi	Govt	Pinarayi	No	
11	PHC Dharmadam	Govt	Dharmadam	No	
12	FHC Ulikkal	Govt	Ulikkal	No	
13	TH Kuthuparamba	Govt	Kuthuparamba	No	
14	TH Peringome	Govt	Peringome	No	
15	TH IRITTY LAB	GOVT	TH IRITTY, KEEZHUR	N	
16	Queen's Health Mall Referral diagnostic laboratory	PVT	New, Bus Stand Rd, opposite Juma masjid, Iritty	N	
17	Apollo Medical Lab	PVT	Payancheri Mukku, Iritty, Kerala 670703	N	
19	Biolab Medical Laboratory	PVT	Payancheri Mukku, Iritty,	N	
20	Doctor's lab	pvt	chalad	No	Y
21	Noble Diagnostics	pvt	chalad	No	Y
22	TH IRITTY LAB	GOVT	TH IRITTY, KEEZHUR	N	
23	Queen's Health Mall Referral diagnostic laboratory	PVT	New, Bus Stand Rd, opposite Juma masjid, Iritty	N	
24	Apollo Medical Lab	PVT	Payancheri Mukku, Iritty, Kerala 670703	N	
25	Biolab Medical Laboratory	PVT	Payancheri Mukku, Iritty,	N	

This table serves as our **logistics and shelter inventory**. By mapping these locations, we can quickly identify where to house displaced citizens, where to set up temporary medical clinics, and how to manage the deceased with dignity during a crisis.

Category	Total Count	Ward	Est. Capacity (Persons)	Contact details
Educational Institutions				
Anganwadis	2377	Distributed across all 11 Blocks	~25–40 per unit	WCD District Cell: 0497-2700707
Schools	1476	All Taluks (Govt/Aided/Unaided)	~100–1,500 per school	DDE Kannur: 0497-2705149
Colleges	91	Arts & Science, Professional	~500–3,000 per college	Kannur University: 0497-2715185
Healthcare Educational Institutions				
Medical colleges (Govt/Private)	2	Pariyaram (Govt), Anjarakandy (Pvt)	~500 beds (GMC)	GMC Kannur: 0497-2808111
Nursing colleges (Govt/Private)	1	GMC Pariyaram Campus	~400 Students	Nursing College Office

Dental colleges (Govt/Private)	2	Pariyaram (Govt), Anjarakandy (Pvt)	~100–250 per facility	Dental Admin Office
Paramedical institutes (Govt/Private)	6	Kannur City, Thalassery, Pariyaram	~50–150 per institute	AKG/CIHS Office
<b>Community Gathering Spaces</b>				
Community halls	166	Unity Centre, Madayi Hall	~150–1,200 per hall	Municipal Secretaries
Auditoriums	164	Rubco, CR Auditorium	~500–1,000 per facility	Management Contact
Religious buildings	1076	Parassinikadav Kottiyoor, Churches	~200–5,000 (Events)	Devaswom/Church Boards
<b>Vulnerable Group Support Facility</b>				
Destitute homes	23	Managed by NGOs/Social Justice	~30–100 per home	Social Justice Office: 0497- 2712255
Elderly homes	55	Old age homes across the district	~25–60 per home	SJD Kerala
DISTRICT owned other buildings	105	Rest Houses, Collectorate	Varies (10– 200)	PWD/Revenue Dept

		Annexes		
Mass Fatality Management (MFM) Infrastructure				
Mortuary	14	DH, GH, Medical College, Taluk Hosp.	2–30 bodies per unit	Hospital Superintendents
Crematorium	246	Municipal/Gra ma Panchayat sites	~2–5 bodies/day	<a href="#">LSGD Offices</a>

\*refer annexure 1 for contact details



**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.

**MEDICAL & CLINICAL PERSONNEL**

This table tracks the "Frontline" providers responsible for diagnosis, treatment, and clinical management. Narrative sentence: eg., "Total health workforce: 450 personnel, with 60% in government facilities serving as primary surge capacity." A detailed directory with the contact numbers of all workers is maintained (**Annexure in 1**).

<b>Cadre</b>	<b>Govt (No.)</b>	<b>Private (No.)</b>	<b>Total</b>
Doctors—Modern Medicine	571	1028	1599
Doctors – AYUSH	184	205	389
Doctors – Veterinary	91	18	109
Doctors – Dental	57	413	470
Nursing officers	1032	1616	2648
Lab technicians	209	571	780
Optometrist			0
Pharmacists	244	567	811
Psychologists	12	15	27
Counsellors	0	0	0

**PUBLIC HEALTH & FIELD-LEVEL WORKFORCE**

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

<b>Cadre</b>	<b>Health services</b>	<b>Municipal common services</b>	<b>Total</b>
HS (Health Supervisors)	13	32	<b>87</b>
HI (Health Inspectors)	75	35	<b>110</b>
LHS (Lady Health Supervisor)	63	—	<b>63</b>
LHI (Lady Health Inspectors)	84	—	<b>84</b>
JPHN (Jr Public Health Nurses)	372	—	<b>372</b>
JHI (Jr Health Inspectors)	224	90	<b>314</b>
MLSP (Mid-Level Service Providers)	348	—	<b>348</b>
Palliative Nurses	105	—	<b>105</b>
RBSK Nurses	86	—	<b>86</b>
PRO	16	—	<b>16</b>

<b>Cadre</b>	<b>Health services</b>	<b>Municipal common services</b>	<b>Total</b>
Epidemiologist	11	—	<b>11</b>
Data Manager	11	—	<b>11</b>

**COMMUNITY & SUPPORT CADRE**

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

<b>Cadre</b>	<b>Number</b>
ASHA Workers	1825
AWW (Anganwadi Workers)	6451
Emergency Medical Volunteers (Trained)	1676
Kudumbashree	20197
MNREGS	84689
Purusha Swayam Sahaya Sangham	1400
Ex-Servicemen	3567

<b>Cadre</b>	<b>Number</b>
Retired Police Officers	2153
NCC/NSS Volunteers	7682
Red Cross volunteers	1828
One Health Community Volunteers	1589
One Health Community Mentors	737

#### COMMUNITY ORGANIZATIONS

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 Local Self-Government Institution (DISTRICT). These groups enhance grassroots mobilization, resource distribution, and support networks crucial for pandemic response and community resilience.

<b>Category</b>	<b>Total Count</b>
NGOs	1315
Religious based organizations	434
Foreign based organizations	467

Category	Total Count
Sports Club/youth clubs	1402
Kudumbashree SHGs	11190
Ayalkootams	11168
Political organizations	875
Residential organizations	265

#### 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	Contact details
Police Stations	46	<a href="#">District Police Office</a> : 0497-2763337 <a href="#">Kannur City PS</a> 0497-2731187
Fire & Rescue Stations	21	<a href="#">District Fire Office</a> : 0497-2706900 Emergency: 101

Water Pumping Points	<b>219</b>	Kerala Water Authority (KWA): 0497-2707704 Groundwater Dept: 0497-2709892
Public Distribution System (PDS)	<b>3,698</b>	<a href="#">District Supply Office</a> : 0497-2700243 Civil Supplies: <a href="http://civilsupplieskerala.gov.in">civilsupplieskerala.gov.in</a>

**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, amphibian ambulances, and motorized 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	1014
Crane	66
Heavy Trucks	247
Tractor	218
Ambulances	233

Mobile mortuaries	31
Boats	124
Taxi service	1958

**Note:** For specific details regarding vehicle owners and contact information, please refer to **Annexure [X]**.

### ONE HEALTH & ENVIRONMENTAL SURVEILLANCE

The One Health method integrates environmental, animal, and human health to enable proactive pandemic preparedness. Panchayat-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 like Iritty , Valapattanam and the edakkad river basin.

### ANIMAL & BIRD POPULATION

Mapping animal and bird populations at the Panchayat 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 all enhance One Health-based pandemic preparedness.

Category	Item	Estimated Population	Wards
Animal Population	Livestock (Cattle/Goats/Buffalo)	2,56,360	Includes 1,10,944 cattle, 1,41,363

Category	Item	Estimated Population	Wards
			<p><b>goats</b></p> <p>, and <b>4,053</b></p> <p><b>buffaloes</b></p> <p>.</p>
	Pet Animals (Dogs/Cats)	<b>~71,721 (Dogs)</b>	Total registered/estimated pets in the district.
	Stray Dog Population	<b>22,666</b>	Official count from the last census; recent surges noted.
	Pig Farms (Number of heads)	<b>3,177</b>	Total pig population has seen a decline from the previous 7,657 count.
	Small Units (Sheep / Goats – clustered)	<b>1,52,880</b>	<p>Combined total of <b>1,41,363</b></p> <p><b>goats</b> and <b>11,517</b></p> <p><b>sheep</b></p> <p>.</p>
Bird Population	Poultry Units (Birds)	<b>2,01,328</b>	Total poultry count, including backyard and commercial units.

Category	Item	Estimated Population	Wards
	Poultry- (FOWL)	<b>1,72,000</b>	Specifically chickens  /  fowls  within the broader poultry category.
	Wild/Migratory Birds (Observed)	<b>Frequent</b>	Regular sightings in wetlands like Kattampally and <b>Ezhome</b> .
	Crow Mortality Events (Reported)	<b>Sporadic</b>	Seasonal events tracked by RDDDL Kannur for avian flu surveillance.

The main risk of zoonotic diseases in Kannur district is concentrated in LSGs such as Irritty, Taliparamba, and Payyanur, 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 (like Azhikode and Ayikkara), 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, especially in the Kattampally and Kunhimangalam wetlands. 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 in the Valapattanam and Kuppam river basins.

#### 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.

Facility Type	Name of Facility	Ownership Govt / Pvt	Location (Ward No)	Contact number
Veterinary Dispensary	Kalliasseri Dispensary	Govt	Kalliasseri	0497-2780820
Veterinary Hospital / Polyclinic	District Veterinary Centre	Govt	Kannur City	0497-2731118
Private Veterinary Clinics	Taliparamba Polyclinic	Govt	Taliparamba	0460-2200234
Mobile / Emergency Vet Service (incl. night services)	Cure & Care Pet Clinic	Pvt	Talap, Kannur	0497-2767070
Pet Homes / Animal Shelters	<b>11 Units</b> (Incl. Night Service)	Govt	District-wide	1962 (Toll-Free)
Slaughterhouse-linked Veterinary Inspection Unit	<b>10 Centers</b> (e.g., <a href="#">ABC Centre</a> )	Govt/NGO	Padiyoor, Kanhirode	9496049017

Veterinary Institutions - Contact Details

SL NO	Institution Name	Telephone
-------	------------------	-----------

1.	Clinical Lab, Kannur	
2.	DAHO Office	0497-2700267
3.	DIST. ADCP Office	04972702952
4.	District Animal Husbandry Office, Kannur	
5.	District Veterinary Centre, Kannur	0497-2700184
6.	Goat Farm, Komeri	
7.	Livestock Management Training Centre, Mundayad	0497-2721168
8.	PF Mundayad	0497-2721169
9.	Veterinary Dispensary, Arayankeezhu	0490 2400148
10.	Veterinary Dispensary, Ayyappantode	0490 2309184
11.	Veterinary Dispensary, Chittariparamba	0490 2301706
12.	Veterinary Dispensary, Eranholi	0490 2353824
13.	Veterinary Dispensary, Kandakkai	0460 2277500
14.	Veterinary Dispensary, Kolacherimukku	0460 2244010
15.	Veterinary Dispensary, Komeri	0490 2515153
16.	Veterinary Dispensary, Kudiyamala	0460 2809180
17.	Veterinary Dispensary, Kuttiyeri	0460 2201706

18.	Veterinary Dispensary, Muriyathode	0460 2220688
19.	Veterinary Dispensary, Palayad	0490 2347166
20.	Veterinary Dispensary, Parassinikkadavu	0497 27B4487
21.	Veterinary Dispensary, Pinarayi	0460 2383252
22.	Veterinary Dispensary, Uuzhappala	0497 3851562
23.	Veterinary Dispensary, Vengara	0497 2752077
24.	Veterinary Hospital, Alakkode	0460-2256222
25.	Veterinary Hospital, Cheruvanchery	0490 2304388
26.	Veterinary Hospital, Kuthuparamba	0490 2366615
27.	Veterinary Hospital, Mattanur	0490 2473970
28.	Veterinary Hospital, Mavilayi	0497-2828092
29.	Veterinary Hospital, Pappinissery	0497 2786140
30.	Veterinary Poli Clinic, Chempenthotty	0460-2267616
31.	VPC Iritty	0490-2491900
32.	VPC Payyannur	0498-5206310
33.	VPC Thalassery	0490 2341060
34.	VPC Thaliparamba	0460-2208655

**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.

<b>Category</b>	<b>Number Available</b>	<b>Type (Govt/Pvt)</b>	<b>Contact number</b>
Government Veterinary Doctors	<b>84</b>	Government	DVC Kannur: 0497-2731118
Private Veterinary Doctors	<b>17</b>	Private	Pet Clinic Network
Livestock Inspectors	<b>124</b>	Government	Local Veterinary Dispensary
Para-veterinary Staff / Attenders	<b>85</b>	Government	District Veterinary Office
Contract / On-call Veterinary Support (if any)	<b>24</b>	Mixed / Projects	1962 (Mobile Units)

**HIGH-RISK INTERFACE POINTS (SURVEILLANCE SITES)**

High-risk interface points for zoonotic disease surveillance in Iritty ,edakkad include *wetland–livestock–human contact zones, backyard poultry farms, cattle sheds near water bodies, fish markets, and areas of high human–animal interaction such as community slaughter points and*

*migratory bird congregation sites*. These are the primary surveillance sites where zoonotic spillover risks are elevated.

<b>Type of Habitat</b>	<b>Type of High-risk interface</b>	<b>Geographical vulnerability</b>
Wetlands & Backwaters	461	High vulnerability in Kattampally, Ezhome, and Kunhimangalam during Nov–Dec.
Backyard Poultry Farms	2880	Widespread in Iritty, Pattuvam, and Cherukunnu; difficult to monitor during outbreaks.
Fish & Meat Markets	121	Critical in Thalassery Market, Ayikkara Fish Landing, and Kannur City hubs.

<b>Category</b>	<b>Total Count</b>	<b>Key Locations (LSGs)</b>
Poultry Farms		Kalliasseri, Mayyil, Narath, Dharmadam
Backyard / Clustered Poultry Units	3340	Kalliasseri, Narath, Kadambur
Duck Rearing Units (open water access)	128	Kannur Corporation, Taliparamba, Thalassery
Slaughterhouses/ Slaughter Points	34	Kannur, Thalassery, Payyannur, Taliparamba
Meat/Fish Markets	137	Kannur, Thalassery, Taliparamba
Live Bird Sale Points	47	Taliparamba, Iritty
Cattle Markets / Weekly Animal Fairs	36	Kannur, Thalassery
Pet Shops / Breeders	39	Kannur Corporation area
Animal Shelters / Pet Homes	11	kannur,thalassery,thali paramba

Waste Disposal Sites near Animal Units	9	
--	---	--

ENVIRONMENTAL RISK MAPPING

Environmental risk mapping identifies monsoon- and flood-prone hotspots for vector-borne (dengue, chikungunya) and waterborne (leptospirosis, diarrhoea) diseases, as well as zoonotic diseases, in Kerala's wetlands. Systematic surveillance supports early warnings, targeted interventions, and Panchayat pandemic preparedness.

**Waterborne exposure:** Flood-prone areas and stagnant water bodies facilitate *leptospira survival*, raising leptospirosis risk.

**Traditional practices:** Informal slaughter and fish markets lack standardized hygiene, creating *spillover opportunities*.

<b>Risk Factor</b>	<b>High-Risk Wards</b>	<b>Key Locations</b>	<b>Risk Level (High/Med/Low)</b>
Flood-prone areas	205	Kalliasseri, Narath, Azhikode, Pappinissery, Iritty, Irikkur	Low-lying coastal & riverbank households
Water bodies/wetlands	486	Kalliasseri, Kadambur, Dharmadam, Kattampally wetlands, a large swamp on the Valapattanam floodplains, and the Kunhimangalam	Paddy fields, Kole lands, waterlogged areas
Solid waste accumulation	17	Kannur (C), Thalassery, Payyanur	improper disposal of lead, mercury, and cadmium
Animal waste disposal issues	9	Rural areas like Mangattidam, suburban fringes of Kuthuparamba	Organic waste mismanagement leading to local odor issues and pathogen risk.

Rodent infestation zones	32	<a href="#">Kannur City</a> (urban cores), Thalassery Market, areas with blocked sewers	Moderate
Industrial effluent discharge	5	Anjarakandy River, <a href="#">Azhikode</a> (coastal areas near ports)	Moderate
Construction sites / abandoned buildings	85	Rapidly urbanising zones in <a href="#">Kannur Municipal Corp,</a> <a href="#">Thaliparamba</a>	Moderate
Poor drainage/blocked canals	44	Low-lying urban valleys, <a href="#">Kannur city center,</a> <a href="#">Thalassery</a>	High
Drinking water source contamination risk	60	<a href="#">Edat, Peravoor,</a> <a href="#">Ramanthali,</a> <a href="#">Madayi</a> (mining zones)	High

<b>Disease</b>	<b>Peak Risk Season</b>	<b>Key Drivers</b>	<b>High-Risk Locations</b>	<b>Surveillance Focus</b>
Avian Influenza	Nov–Jan	Migratory birds, backyard poultry, water contamination	Coastal wards (Azhikode, Dharmadam, Kalliasseri), ponds, paddy fields	Bird die-offs, poultry mortality, animal husbandry coordination
Leptospirosis	Jun–Sep	Flooding, rodent contamination, occupational exposure	Flood-prone wards, river belts (Valapattanam, Chirakkal)	Fever surveillance, doxycycline prophylaxis, waterlogging monitoring
Dengue/Chikungunya	May–Jul & Sep	Aedes breeding, stagnant water, urbanization	Urban areas (Kannur Corporation, Taliparamba, Thalassery)	Vector indices, fever surveillance, source reduction
Acute Diarrheal Diseases	Apr–Jun & Monsoon	Contaminated water, poor sanitation	Coastal wards, slums, flood-affected areas	Water testing, ORS distribution, outbreak detection
Rabies	Year-round (post-monsoon peak)	Stray dogs, low vaccination, waste	Markets, fish landing sites, bus stands	Animal bite surveillance, PEP, dog vaccination

Anthrax (rare)	Sporadic	Livestock exposure, carcass handling	Rural livestock areas	Animal death surveillance, veterinary coordination
----------------	----------	--------------------------------------	-----------------------	--

**VULNERABILITY MAPPING**

Vulnerability mapping pinpoints high-risk populations, occupations, and areas exposed via environment, livelihoods, socio-economics, and poor service access. Paired with environmental/seasonality mapping, it enables risk-based surveillance, targeted actions, and optimal resource use in One Health and pandemic planning.

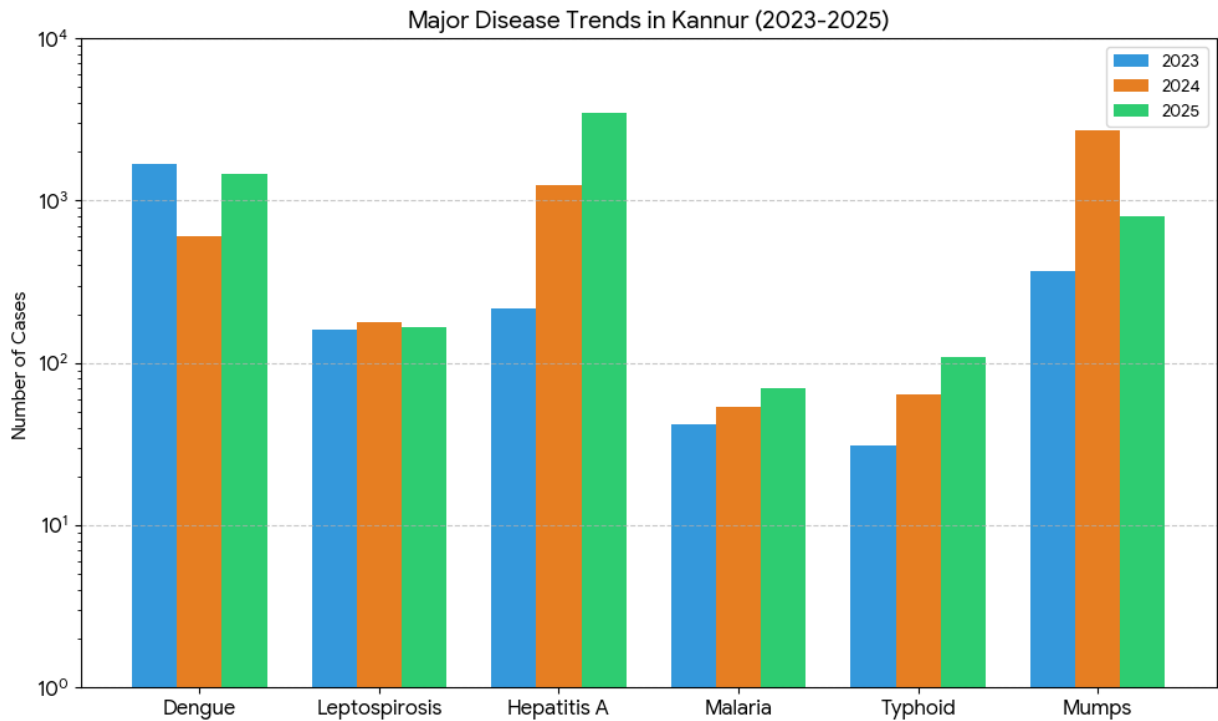
<b>Vulnerability Factor</b>	<b>High-Risk LSGs</b>	<b>Key Groups / Locations</b>	<b>Risk Level</b>
Flood-prone households	Iritty, Irikkur, Kalliasseri, Valapattanam	Houses on riverbanks and low-lying plains	High
Wetland-adjacent communities	Kattampally, Kunhimangalam, Ezhome	Households near mangroves and marshlands	Moderate
Backyard poultry/duck rearing	Pattuvam, Mattool, Cherukunnu	Rural households with unorganized farming	Moderate
Livestock-rearing households	Ulikkal, Payyavoor, Edoor	Dairy farmers in hilly and midland regions	Moderate

Slaughterhouse & meat workers	Kannur Corp, Thalassery, Payyanur	Workers in municipal and private abattoirs	High
Fisherfolk & fish markets	Azhikode, Ayikkara, Thalassery	Coastal communities and market vendors	High
Sanitation workers	Kannur Corp, Mattanur, Thaliparamba	Municipal cleaning staff and waste handlers	High
Daily wage / Migrant workers	Valapattanam, Pappinisseri, Payyanur	Labor camps near industrial and construction sites	High
Elderly & Chronically ill	Whole District (Concentrated in urban centers)	Palliative care patients and geriatric groups	High
Pregnant Women	Rural Panchayats with limited transport	High-risk pregnancies in remote hill areas	Moderate

Children (Schools/Anganwadis)	Flood-prone wards in Iritty and Irikkur	Schools located in inundation-prone zones	High
Limited water/sanitation access	Madayi, Ramanthali, Edat	Mining-affected and saline-intruded zones	Critical

**EPIDEMIOLOGICAL TRENDS (2023–2025)**

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.



**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 Panchayat level.

<b>Disease</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>Trend (Increasing / Stable / Decreasing)</b>
Dengue	4877	5628	1693	599	1457	
Leptospirosis	333	301	160	179	165	
Hepatitis A	48	50	215	1236	3479	
Malaria			42	54	70	
Scrub Typhus			19	35	34	
Typhoid			31	64	109	
H1N1			5	7	9	
H3N2			0	0	1	
ADD			8779	10510	11074	

Mumps			366	2722	806	
Measles			67	38	10	
Hepatitis B			2	6	6	
Hepatitis C			0	0	0	
Tuberculosis			965	952	989	
Leprosy			10	20	27	
COVID-19			104	0	1	

\*(use the above table data to create the graph/diagram)

## 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 Panchayat level.

### 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 – LSG-WISE YEARLY DISTRIBUTION (2021–2025)

Ward	Dengue – LSG-wise Yearly Distribution					
	2021	2022	2023	2024	2025	Total
1	52	36	129	919	273	1409
2	14	5	37	270	72	398
3	238	27	162	436	346	1209
4	106	35	126	350	253	870
5	253	89	194	748	973	2257
6	65	58	136	532	444	1235
7	59	32	144	236	129	600

8	18	9	71	159	128	385
9	81	61	124	214	231	711
10	16	19	58	155	90	338

---

### 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)

Ward	Leptospirosis – LSG-wise Yearly Distribution					
	2021	2022	2023	2024	2025	Total
1	15	17	24	67	40	163
2	6	11	3	18	26	64
3	9	4	12	13	17	55
4	17	14	10	13	25	79
5	32	39	35	49	45	200

6	13	11	10	15	13	62
7	3	3	9	8	9	32
8	7	7	3	11	13	41
9	7	4	3	4	16	34
10	5	3	6	6	12	32
11	18	33	14	39	38	142
12	8	9	8	10	40	75
13	15	11	4	14	19	63

---

**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)**

LSG	Hep A – LSG-wise Yearly Distribution					
	2021	2022	2023	2024	2025	Total

1	5	1	10	84	85	185
2	0	1	9	28	69	107
3	29	4	3	75	76	187
4	0	1	3	105	300	409
5	4	7	32	125	625	793
6	3	3	7	17	207	237
7	2	3	28	57	637	727
8	1	11	33	457	512	1014
9	1	0	11	54	221	287
10	0	1	2	49	97	149
11	1	3	4	35	84	127
12	0	0	52	48	190	290
13	0	2	9	50	112	173

**TRANSMISSION TREND- 2025**

For effective management of public health issues, it is important to track the trend of disease transmission mode. 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 the strategies adequately based on the trend that follows.

<b>Mode of Transmission</b>	<b>No. of cases</b>	<b>No. of Deaths</b>
Vector Borne Diseases	3982	
Water Borne Diseases	5430	
Air Borne Diseases	2306	
Blood Borne Diseases	8	
Food Borne Diseases	1446	

**VECTOR-BORNE DISEASE**

<b>Disease</b>	<b>No. of Cases</b>	<b>No. of Deaths</b>
Dengue	3975	
Malaria	65	

Chikungunya	1	
-------------	---	--

---

**WATER BORNE DISEASE**

<b>Disease</b>	<b>No. of Cases</b>	<b>No. of Deaths</b>
Cholera	0	
Typhoid	88	
Hep- A	3126	
Dysentery	423	
Amoebiasis	10	
E- Coli infections	109	

---

**AIR BORNE DISEASE**

<b>Disease</b>	<b>No. of Cases</b>	<b>No. of Deaths</b>
Influenza	225	
H1N1	9	

TB	954	
Chickenpox	1575	
Measles	16	
Covid-19	380	3
Pertussis	3	
Mumps	1110	

---

**BLOOD-BORNE DISEASE**

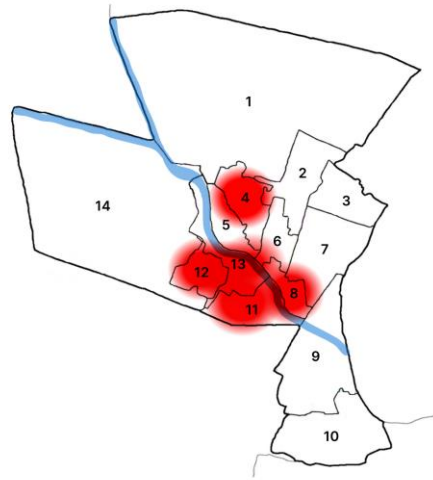
<b>Disease</b>	<b>No. of Cases</b>	<b>No. of Deaths</b>
AIDS	4	
Hep- B	4	
Hep- C	4	

---

**ZOONOTIC DISEASE**

<b>Disease</b>	<b>No. of Cases</b>	<b>No. of Deaths</b>
Rabies	0	
Leptospirosis	272	
Avian influenza	0	
West Nile	2	
Anthrax	0	
Nipah	0	
Scrub Typhus	24	

INTEGRATED DISEASE HOTSPOT MAP (2021–2025)



LSG Name	Dengue Total (2021-25)	Leptospirosis Total (2021-25)	Hepatitis A Total (2021-25)	Total Cases
1	1409	163	185	
2	398	64	107	
3	1209	55	187	
4	870	79	409	
5	2257	200	793	
6	1235	62	237	
7	600	32	727	
8	385	41	1014	
9	711	34	287	

10	338	32	149	
11	2700	142	127	
12	386	75	290	
13	577	63	173	

By overlaying five years of data, we have identified 83 'Red Zone' Wards. These are wards where at least two different categories of diseases (e.g., Dengue and Lepto) recurred in consecutive years. Ward **4** is categorized as the **Highest Priority Hotspot** due to its combination of flood vulnerability and high vector density. Future health infrastructure, such as the proposed **R.O plants at .....**should be prioritized.

## ASSESSING CORE CAPACITIES

### Key Points:

- **Core Capacities:**
  - Surveillance
  - Laboratory access
  - Clinical surge (beds, oxygen, ventilators, triage)
  - Supply chain
  - Risk communication
  - Logistics
  - Social support (volunteers, NGOs, welfare schemes)

## MAPPING OF EXISTING PLANS AND COMMITTEES

- **Committee Harmonization:** A table mapping the members of the LSG Disaster Management Committee (LDMC) to their specific roles in the Pandemic Task Force.
- **HEOC Integration:** A clear flow-chart showing how a local signal (at the Ward level) is communicated up to the District Health Emergency Operations Centre.
- **IDSP Liaison:** Identification of the specific "Reporting Officer" responsible for sending daily data to the Integrated Disease Surveillance Programme.
- **SOP Adaptation:** A list of COVID-19 protocols (e.g., dead body management, quarantine rules) that have been formally adopted and simplified for local language use.
- **Resource Sharing Agreements:** Signed MOUs or documented protocols for sharing ambulances or equipment with neighboring LSGs during a surge.

## ASSESSMENT OF CORE CAPACITIES

- **Clinical Triage Plan:** A mapped pathway for how a patient moves from "Home Isolation" to a "Primary Health Centre" to a "District Hospital."
- **Oxygen & Life Support Log:** A verified list of local oxygen cylinder suppliers, refilling stations, and the number of oxygen-supported beds available within 10km.
- **Laboratory Logistics:** A schedule for sample collection and transport, including the contact details of the nearest designated testing lab and courier.
- **Supply Chain Buffer:** A 30-day "Minimum Stock Level" (MSL) defined for essential medicines, masks, and sanitizers.
- **Volunteer Force (Kudumbashree/Arogyasena/NDRF):** A registered database of "Trained Volunteers" categorized by skill (e.g., nursing, food preparation, data entry, driving)

## BUILD & ORGANISE CRITICAL CAPACITIES

- 
- Surveillance and data
- Strengthen IDSP and event-based surveillance with clear reporting from PHCs, private facilities, labs, and LSGs.
- Regular IDSP meetings
- Monitor routing of IDSP meetings
- Linelist OF non reporting institutions public and private,labs,LSGD

- o Lab turnover time
- o **Define simple ward-level indicators (e.g., ILI clusters, mortality alerts) and SOPs for field verification and response.**
- o ILI cluster and mortality alerts
- o Development of SOPs
- o Strengthen IDSP
- o Community-based surveillance
- o Vaccination coverage
- o Cold chain integrity
- o Risk communication
- o Community engagement-RRT, Kudumbashree, one health
- o Community level meetings-neighbourhood, WHSNC,JAS,MASI .
- o
- **Vulnerable Groups:**
  - o High-density settlements
  - o Migrant clusters
  - o Major workplaces
  - o Institutions
  - o High-risk panchayats (based on past outbreaks/hazard mapping)
- Visual:**
- Use a two-column table or infographic: one side for capacities, one for vulnerable groups.

## GOVERNANCE & STRUCTURE

### Key Points:

- **Defining Roles:**
  - o From District Collector to ward-level volunteer
  - o Use existing disaster management and LSG structures
- **District Level:**
  - o Public Health Emergency & Pandemic Task Force under DDMA
  - o Integrates health, revenue, LSG, police, animal husbandry, ICDS, education, transport
  - o Incident management: trigger points, activation, reporting lines, decision authority
- **Panchayat Level:**
  - o Formalize health vigilance committees (Arogya Jagratha Samithis)
  - o Micro-define responsibilities: home isolation, surveillance, IEC, quarantine, essential services
- Visual:**
- Hierarchical flowchart showing governance from district to ward level
- Responsibility matrix for panchayat committees.

## PLANNING PRINCIPLES & LEGAL CONSIDERATIONS

### Key Points:

- **Principles:**
  - o Equity, gender, human rights, inclusiveness, coherence
  - o Balancing rights, setting priorities, equitable access to life-saving measures
- **Legal/Policy:**
  - o Legislative frameworks for health emergency preparedness

- o Roles and responsibilities (including technical advisory groups)
- o Compliance with International Health Regulations (2005)
- o Data sharing, research, and innovation policies

**Visual:**

- List with icons for each principle
- Policy framework diagram.

## PLAN DEVELOPMENT & APPROACH

### Key Points:

- **Development Methods:**
    - o Planning committee terms of reference
    - o Multisector/multilevel consultations
    - o Analysis of existing systems
  - **Approach:**
    - o Needs-based, scalable, integrated, regularly updated
    - o Indicators and milestones for preparedness
  - **Operational Stages:**
    - o Planning assumptions, funding, national/subnational considerations
- Visual:**
- Flow diagram of plan development steps
  - Timeline or Gantt chart for operational stages.

## STATE SYSTEMS & EMERGENCY COORDINATION

### Key Points:

- **Emergency Coordination:**
    - o Integration with other emergency plans
    - o Roles at all levels
    - o Command-and-control structures
    - o Multi-agency coordination
    - o Emergency funding triggers and mechanisms
  - **Exercises & HR Surge:**
    - o Plans for cross-sector exercises
    - o Methods to address skills shortages
    - o Use of emergency medical teams
- Visual:**
- Organizational chart for emergency coordination
  - **Table for HR surge strategies.**

## SURVEILLANCE & LABORATORY SYSTEMS

### Key Points:

- **Collaborative Surveillance:**
  - o One Health mechanisms, verification, alert teams
  - o Data synthesis for action
- **Laboratory Access:**

- o Networks, specimen transport, biosafety, data integration
- **Multi-source Data:**
  - o Hospital capacity, supply chain, infodemic monitoring, disaster risk data
- Visual:**
- Process flow for surveillance and lab systems
- Data integration diagram.

## COMMUNITY PROTECTION & COMMUNICATION

### Key Points:

- **Protection Mechanisms:**
  - o Infection prevention, vaccination, PPE, social welfare, essential services
- **Communication:**
  - o Two-way mechanisms, community engagement, media outreach, language adaptation
- **Misinformation:**
  - o Monitoring, resilience, scientific literacy
- **Travel & Trade:**
  - o Risk communication for travellers, screening, quarantine, and essential travel management
- Visual:**
- Infographic for community protection strategies
- Communication flowchart.

## CLINICAL CARE & ESSENTIAL SERVICES

### Key Points:

- **Clinical Care:**
  - o Scaling facilities, diagnostics, case management, telemedicine, safe burials, waste management
- **Essential Services:**
  - o Maintenance, workforce supplementation, monitoring, recovery
- **Protection:**
  - o Infection control, WASH, health worker safety, sectoral roles
- Visual:**
- Table for clinical care pathways
- Diagram for essential services maintenance.

## ACCESS TO COUNTERMEASURES

### Key Points:

- **Supplies & Stockpiles:**
  - o Essential supplies lists, rapid scaling, national/international stockpiles
- **Regulatory & Supply Chains:**
  - o Regulatory frameworks, liability, upstream/downstream supply chains, R\&D

environment

**Visual:**

- Supply chain flowchart
- Checklist for countermeasure access.

## 10. PLAN ACTIVATION & OPERATIONAL TRIGGERS

### Key Points:

- **Activation:**
  - Decision-making bodies, stakeholder roles, communication protocols
- **Operational Stages:**
  - Prevent & prepare, respond (contain, control, mitigate), recover (scale down, sustain)
- **Visual:**
- Decision tree for plan activation
- Timeline for operational stages.

## HEALTH SYSTEM SURGE

### 1. Gap analysis for beds, oxygen, critical care, paediatric/obstetric care, and referral transport; pre-plan “expansion beds” using existing infrastructure.

- Specialized Care Audit: Identify the specific number of functional neonatal ventilators, pediatric ICU beds, and labor rooms that can be isolated for infectious obstetric cases.
- Oxygen Autonomy Calculation: Calculate the total "liters-per-minute" (LPM) capacity of local plants/concentrators versus a peak-load projection (e.g., if 5% of active cases need oxygen).
- Secondary Infrastructure Mapping: Create a floor plan for "Expansion Beds" in non-health facilities (hostels, auditoriums), ensuring they have separate entry/exit points for ambulances.
- Referral Transport Matrix: Categorize available vehicles into "Type A" (Basic) and "Type B" (Advanced Life Support/Oxygen), with pre-negotiated fuel-credit lines at local petrol pumps.
- Staff-to-Bed Ratio Analysis: Determine the "Surge Staffing" gap—how many extra nurses and respiratory therapists are needed to manage the expansion beds identified above.

### 2. Standardize triage, cohorting, and IPC practices across levels using concise checklists and on-site mentoring

This ensures that the care provided is safe, standardized, and doesn't lead to "Super-Spreader" events within hospitals.

- Physical Cohorting Zones: Clearly demarcate healthcare facilities into "Green" (Non-COVID/Clean), "Yellow" (Suspected/Triage), and "Red" (Confirmed Infectious) zones.
- Triage "Door-to-Bed" Protocols: A concise 5-point checklist for the "Entry Gate" staff to sort

patients by respiratory rate and oxygen saturation ( $SpO_2$ ) within 3 minutes of arrival.

- On-Site Mentoring Roster: A schedule for "Shadow Training," where specialists from the District Hospital visit LSG clinics to provide hands-on training for ventilator use and PPE donning.
- IPC Compliance Checklists: A daily "Safety Walk" tool for supervisors to verify hand-hygiene stations, waste segregation, and environmental surface cleaning.
- Healthcare Worker Prophylaxis: A formal system to monitor the health, vaccination status, and mental well-being of the medical staff to prevent "burnout-induced" IPC lapses.

#### SUPPLIES AND LOGISTICS

- Pre-position essential PPE, diagnostics, and medicines based on realistic consumption norms; include local production options where feasible (e.g., masks, sanitizers).
- Consolidated Consumption Norms: Establish a "Per-Patient, Per-Day" consumption rate for PPE, oxygen, and antibiotics to prevent over-stocking or under-stocking.
- Local MSME/Self-Help Group (SHG) Registry: Pre-certify local tailoring units (like Kudumbashree) and chemical units to produce standardized masks and WHO-grade hand sanitizer.
- Diagnostics "Cold-Chain" Audit: Verify the storage capacity (refrigerators/freezers) for diagnostic kits at the LSG level to ensure reagents remain viable.
- Kit-Based Distribution: Create pre-packed "Home-Care Kits" (basic meds, masks, instructions) that can be dispatched immediately to households with positive cases.
- Emergency Procurement Bylaws: Formalize the legal framework that allows the local body to purchase supplies from local vendors during a "State of Emergency" without traditional 30-day tenders.

#### MAP AND FORMALIZE SUPPLY CHAINS WITH CONTINGENCY ROUTES, FRAMEWORK AGREEMENTS, AND A SIMPLE INVENTORY TRACKING FORMAT.

- Contingency Routing Maps: Identify "Plan B" transport routes for medical supplies in case primary roads are blocked by lockdowns, floods, or protests.
- Framework Agreements (Rate Contracts): Sign pre-fixed price agreements with vendors for the next 12–24 months to prevent "Price Gouging" during the height of a pandemic.
- Simplified Digital Ledger: Implement a "One-Page" inventory tracker (mobile-friendly) where local staff can log incoming and outgoing stock with a single click.
- Buffer Stock Trigger Points: Set "Re-Order Levels" (e.g., when stock hits 25% of capacity) that automatically alert the District Health Emergency Operations Centre.
- Last-Mile Volunteer Network: Identify a "Bicycle/Two-Wheeler Brigade" capable of delivering life-saving medicines to remote or high-density areas where ambulances cannot enter.

### 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.

#### 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	Contact Number
1	District collector	DISTRICT	Chairperson	04972700243
2	District Medical Officer(Health)	Health Dept	Member Secretary	04972700194
3	District Animal Husbandry Officer	Animal Husbandry	Member	04972700197
4	Deputy Director, Panchayats	LSGD	Member	0497-2700081
5	District Agriculture Officer	Agriculture Dept	Member	0497-2706154
6	District Fisheries Officer	Fisheries Dept	Member	0497-2731081
7	District Forest Officer	Forest Dept	Member	0497-2704808

8	District Food Safety Officer	Food Safety Dept	Member	<b>0497-2760930</b>
9	District Surveillance Officer	Health Dept	Member	0497-2700191
10	District NKKP2 Nodal Officer (Convener)	Health Dept	Member	<b>9446606178</b>
11	Civil society Representative			
12	<b>Line Department representations</b>			

---

KEY RESPONSIBILITIES:

- Review disease surveillance data (human + animal)
- Conduct ward-wise risk assessment and vulnerability mapping
- Approve quarantine/isolation centre locations
- Coordinate with 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)

**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.

**Total Response Workforce Available: persons**

Team Name	Composition	Key Responsibilities	Team Leader
<b>Surveillance and Contact Tracing Team</b>	HI, JHI, JPHN, ASHAs and Volunteers	Case detection, contact listing, home visits, reporting	HI
<b>Case Management Team</b>	Doctors, Nurses, MLSP, Palliative Nurses	Patient care & referral	DOCTOR
<b>Quarantine &amp; Isolation Team</b>	DISTRICT staff, Volunteers	Facility management	JHI
<b>Psychosocial support</b>			
<b>Logistics &amp; supply chain Team</b>	DISTRICT staff, Storekeepers, Drivers 3	Supplies & transport [PPE, medicines, oxygen, transport, waste management]	Ward Member
<b>Communication Team</b>	Ward members, Kudumbashree, Youth clubs, AWW workers and other self help	IEC, community meetings, countering misinformation	M.O in charge

	groups		
<b>Transportation</b>	KSRTC, Educational bus drivers, Private taxis	Patient transport, moving medical supplies	LSG Secretary
<b>Media Surveillance</b>	Information & Public Relations (IPRD) staff	Monitoring news/social media for misinformation	District Information Officer
<b>Intersectoral coordination and convergence</b>	District Panchayat, Revenue, Police, Health	Resolving operational gaps and joint decision- making	District Panchayat President
<b>Collaborative surveillance</b>	Veterinary Doctors, Health Dept, Environmentalists	One Health monitoring of zoonotic spillover	Veterinary Surgeon

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.

Define governance, roles and structure

Clarify who leads what, from the district collector to the ward level volunteer, using existing disaster management and LSG structures.

- District level:
  - o Notify/strengthen a District Public Health Emergency & Pandemic Task Force under DDMA, integrating health, revenue, LSG, police, animal husbandry, ICDS, education and transport.
  - o Define incident management: trigger points, activation of HEOC/control room, reporting lines, decision-making authority, and linkages to state IRT/HEOC.
- Panchayat/ULB level:

- o Re activate or formalise Arogya Jagratha Samithis/health vigilance committees as the local pandemic committee, chaired by the LSG president, with the MO PHC as convenor.
- o Micro define responsibilities: home isolation support, community surveillance, IEC, quarantine support, and essential services continuity.

## ACTIVITIES AND MEASURES BEFORE AND DURING PANDEMIC

### PHASE 1 - ALERT / PREPARATION

#### **Surveillance and Reporting-Enhanced syndromic surveillance:**

**1. Data sources for surveillance:**

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

**3. Zoonotic and animal health surveillance**

**4. Logistics and Stock Preparedness**

- ☉ Identify and empanel local vendors and define emergency procurement mechanisms in accordance with existing DISTRICT 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:
  - PPE kits – numbers
  - Pulse oximeters – \_\_\_ numbers

- Hand sanitizers – \_\_\_ litres
- Masks, gloves, disinfectants – adequate quantity

Identify critical logistics gaps and immediately communicate requirements to the Block and District authorities to ensure 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 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 if case numbers increase.

#### RISK COMMUNICATION AND COMMUNITY PREPAREDNESS

- Disseminate early 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
  - Dialysis patients

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.

## 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, in accordance with 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 travellers 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**

1. TEMPERATURE CHECK (Non-contact)	2. VISUAL SYMPTOMS (Cough/Fever/Breathless)	3. TRAVEL HISTORY (Last 14 days)
↓	↓	↓
4. QUICK RISK ASSESSMENT High Risk → Test/Quarantine Suspect → PHC Referral	5. ACTION TAKEN Normal → Allowed IEC + Mask provided	

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.

---

### 3. 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 DISTRICT teams, health facilities, and community sources to enable rapid decision-making.

---

#### CONTROL ROOM INFRASTRUCTURE AND LOCATION

**Primary Location:** District medical Office Kannur

**Backup Location:** DH Kannur

---

#### HEALTH SYSTEM CONTROL ROOM FRAMEWORK

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

##### **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.

##### **Data Management & Analytics Team**

##### **Human Resource Deployment Team**

##### **Laboratory Surveillance Team**

##### **Vaccination Cell (If Required)**

##### **Infrastructure & Patient Occupancy Team**

BMWM

##### **Communication team**

*Logistics and supply chain*

*Transportation (interfacility & emergency transport)*

*Media surveillance Call centre*

*Management of the deceased*

*Intersectoral coordination and convergence*

*Surveillance committee*

*Sample transportation, testing, result management*

*Contact tracing, line list management*

*Patient transport management*

*Materials and logistics management*

*IEC , media management*

*Data analysis*

*Psychological support team*

*Intersectoral coordination*

*Field level activity monitoring*

*Infection control and training*

*Private hospital coordination*

*Welfare committee*

*Animal surveillance*

*Wild life surveillance*

*Telemedicine*

*IT support*

---

KEY CONTROL ROOM TEAM

The Control Room Team coordinates all pandemic response activities within the DISTRICT and serves as the single command and communication hub during activation. It integrates information, field actions, logistics, and policy execution across all participating departments and health facilities.

**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

- 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 log 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
- 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 communications 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

---

### SURVEILLANCE TEAM

---

#### HOSPITAL SURVEILLANCE

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

### 24 X 7 CALL CENTRE MANAGEMENT TEAM

- **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 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 center, each workstation has the following items:
- Headset for hands-free answering;

- Reference materials (issued upon activation of call center 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 close proximity to power, telephone, and data sockets/ports.
- Call Center Supervisors are to utilize a sign-in/sign-out sheet to keep track of Call Center Operators.

MANDATES FOR CALL CENTRE

- Maintenance of discipline
- Time management
- Call centre will be operational 24\*7
- Documentation of all the activities happening in call centre
- Daily consolidation report at 4.30 pm.
- Establishing call centre with sufficient connectivity
- Linkage with DISHA system
- To answer medical queries, logistics and administrative issues regarding health and health related problems
- Daily maintenance of second and third level call referral.
- Compilation format

Total number of calls till today	No: of calls on the date--/- /2020	Total	Case follow up till today	Case reported on --/-- /2020	Total fever

- DISHA Calls .....

---

**HR MANAGEMENT**

- Human resource management mostly happens at the district level but at any point if district needs any additional support the needs can be communicated to state.
- The team should have a thorough knowledge of all district HR distribution.
- The team should also communicate with the district regarding the optimum redistribution policies according to the needs.

- HR details of the isolation facilities should be managed and timely decisions at state level if necessary should be taken from the control room.
- The HR data of isolation facilities/nodal centres should be compiled on daily basis and ensure there is no shortage in any category.

---

**TRAINING AND AWARENESS GENERATION**

- The district should train all the necessary cohorts in a timely manner, and the data should be compiled at the state level. 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)
- Identify the segments in the Government and Private sectors
- Prepare segment-specific relevant modules
- Preparation of training manuals
- Dissemination of the prepared IEC materials including audiovisual aids/training materials to health workers/volunteers/public/media
- Preparation of FAQ'S and its answers
- Online / Telephonic trainings for district level officers/health workers/volunteers as and when required
- Training to call centre duty staff
- Team of Master trainers
- Conduct of training and demonstration sessions
- **DATE:**

Sl No	Segment	Subject	Place	Number of persons attended
	<b>Govt sector</b>			
	Doctors			
	Paramedical staff			
	Attendants			
	<b>Private sector</b>			
	Doctors			

	Paramedical Staff			
	Attendants			
	<b>Others</b>			
	ASHA			
	Line departments staff			
	LSGD representatives			
	Kudumbashree			
	Anganwadi Teachers			
	Ambulance Drivers			

---

**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 has 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.

● **DATE :**

**INSTITUTION:**

SI No	Items	Opening stock	Distribution	Balance


- 
- 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 wise
- Ensure the supply chain management of healthcare and other items requirement

**Infrastructure (isolation ward and facilities) management team**

- Identify an isolation place in each district for at least for 50 patients
- Ensure all the required things 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 strict protocol of infection control is followed in each district
- Identify spatially all the field units fever clinics arrangements done in all districts
- Ensure and compile the referral of contacts from field/call centres /DISHA to isolation facilities in the district
- Verify and compile the needs of additional isolation place 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

● **DATE**

**INSTITUTION**

SI No	Describe and give data	
	Whether isolation ward identified and all required things are set up	
	Whether the specific teams have been identified and trained  Number of Doctors	

	Number of Paramedical staff Number of Attendants	
	Whether stand by team identified and trained Number of Doctors Number of Paramedical Staff Number of Attendants	
	Duty roster prepared	
	Whether all inventory is ensured	
	Number of beds	
	Number of Patients admitted and their details	
	Infection control measures taken Details	
	Bio medical waste disposal mechanism from Isolation ward	
	Institution requirements details	

---

**MEDIA SURVEILLANCE TEAM**

- Print, visual and social media surveillance with the support of State and District team.
- Collection of information regarding demand and supply of logistics, Human resources etc. circulated in the media, and addressing the needs by bridging the gaps after validating the information.
- Surveillance of issues regarding 2019-nCoV disease circulating in the media.
- Validating the information collected from the media for negative outcomes and execute timely preventive and control measures.
- Reply queries to the general public regarding health related events and information through phone numbers circulated at the state level.
- District level compilation of media surveillance data should also happen timely
- Reporting format of cyber space monitoring

Sl no :	Description	Details
1	Whether any misinformation 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	

•

---

#### **SAMPLE TRACING TEAM**

- The team should keep a watch on sample sent to each lab(NIV pune/Alappuzha) from all districts and answer all queries regarding the sending of samples in coordination with the PH lab.
- The team should hand hold the district in transportation of samples, filling formats, collecting reports and intimate the authorities regarding the status of results Monitor sample collection and facilitate
- All sample test results to be reported to the respective Superintendent of MCH, District Collector, DHS, DME and Prl Secretary on daily basis

•

#### **DATE**

SI No	Description	Number	Results received	Positive
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**

- Preparation of IEC materials related to the preventive and promotive activities to be done at the field level for the management of 2019-nCov disease spread, decrease the anxiety of the general public and to disseminate factual information regarding the disease
- Dissemination of same in PRD, TV channels , AIR , social media etc
- Timely updating of website with regard to IEC
- Preparation of daily reports for media
- Arrangements of press conferences as per direction
- To act as media spokesperson for DHS
- Review format

Press note	
Press brief	

Social media dissemination content	
------------------------------------	--

**DOCUMENTATION TEAM**

- Document all meetings related to 2019-nCov disease management at Minister, Principal Secretary and DHS level
- Ensure proper communication of all decisions to district’s and Public health institutions for implementation of the decisions made in meetings
- Proper communication to various teams of the control room regarding meetings, guidelines, SOPs, etc.
- Communication to the concerned teams for website and social media updates.
- Daily compilation of activity reports by various teams

**Private hospital surveillance team**

- Team should compile the data regarding the general public visiting private hospitals from all districts and suspect and identify any missed out contacts of contacts reaching the facilities.
- Good rapport should be ensured with the private hospitals/associations
- Reporting format

	Cumulative
Number of persons visited private hospitals	
Suspected cases/contacts identified from Jan 15 2020 onwards	

**EXPERT STUDY COORDINATION TEAM**

- They should work with NHM admin and arrange and facilitate the visits of expert agencies provided they are coming with
- Approval from the head of the institution
- Letter to the principal secretary, health and family welfare for the sanction of the same
- Their own logistical support
- Should be ready to give their input regarding the present scenario and work with the current state and district team
- The team should brief the principal secretary health and family welfare regarding the feasibility, pros and cons of approval in each case after studying their back grounds.

•

Sl no		Details
1	Expert / Expert Group  Institution  Govt or private	
2	Names:	
3	Activities undertaken	

•

**TRANSPORTATION AND AMBULANCE MANAGEMENT TEAM**

- The teams should compile data on ambulance driver training, availability, and spacing, as well as on vehicles carrying patients from home isolation to hospital isolation facilities and back. It should be ensured that there should be continuous availability of vehicles 24 x 7 in all districts. The data should be compiled in the following format in all districts. All possible challenges at the district should be addressed there itself, and decisions taken at the state could be compiled and addressed during the control room presentation.

Sl no	Vehicle number	Driver	From	To	Post trip sanitization

•

**INTER DEPARTMENTAL AND COORDINATION TEAM**

- There should be regular connections with all line departments like LSGD, Animal husbandry, tourism , police, kudumbasree, Suchitwa mission etc

**COMMUNITY LEVEL VOLUNTEER COORDINATION TEAM**

- The field level activity monitoring should be done by this team.
- Grass route level support including food kit management when more people are at quarantine should also be done with the help of kudumbasree , and senior consultant ASHA program in NHM should review these activities and gaps on daily basis and present it on control room meeting .
- Collect information of Contacts and addresses
- Prepare the food kits to provide to the Contacts in Home Quarantine

- Reporting format

SI No	Description	Details
1	Number of Contacts under Home Quarantine	
2	Number of Kits prepared and provided to Homes where contact is quarantine	
3	Kits stock	
4	Kits distribution	
5	Kits balance	

- 

---

#### PSYCHOLOGICAL SUPPORT TEAM

- The team should arrange a district /field team for managing posttraumatic stress-related events and stress during quarantine. The field-level activities should be compiled and presented during daily control room meeting

---

#### DATA MANAGEMENT

- Stat wing should utilise all Google tools to compile all the above data formats and assist the presentation of teams in the daily control room meeting.
- The technical support of MIS manager NHM should be utilized in the same.
- For all these parameters district district-specific sheets with auto-consolidated compilation sheets should be made
- The sheets should be dynamic, and compilation should be given access to all state team leaders, SMD and the principal secretary.
- Districts should be supported for a timely update in the sheet in the specified format

---

#### FINANCE AND BUDGETING TEAM

- The state team for finance should discuss and forsee various areas of fund requirement and pool resources for all possible needs arising from time to time.
- The decision regarding fund expenditure and necessary AS should be prepared timely so as not hinder any processes happening in the state and districts

SI no	Name of team	Team Leader	Members

	<b>Over all coordination</b>		
<b>1</b>	<b>Surveillance team</b>		
<b>2</b>	<b>Call Centre management team</b>		
<b>3</b>	<b>HR management</b>		
<b>4</b>	<b>Training and awareness generation</b>		
<b>5</b>	<b>Material management team</b>		
<b>6</b>	<b>Infrastructure (isolation ward and facilities) management team</b>		
<b>7</b>	<b>Sample Tracing team</b>		
<b>8</b>	<b>Media Surveillance team</b>		
<b>9</b>	<b>IEC/BCC and Media Management team</b>		
<b>10</b>	<b>Documentation team</b>		
<b>11</b>	<b>Private hospital surveillance team</b>		
<b>12</b>	<b>Expert study coordination team</b>		
<b>13</b>	<b>Transportation and ambulance management team</b>		
<b>14</b>	<b>Inter departmental and coordination team</b>		
<b>15</b>	<b>Community level volunteer coordination team</b>		
<b>16</b>	<b>Psychological support team</b>		
<b>17</b>	<b>Data Compilation</b>		
<b>18</b>	<b>Budget and financing</b>		

---

**DAILY MONITORING INDICATORS**

To ensure timely decision-making and effective response, the following key indicators shall be monitored and updated on a daily basis by the Pandemic Control Room:

**1. EPIDEMIOLOGICAL INDICATORS:**

New cases reported today, Total active cases, Test Positivity Rate (TPR), Case Fatality Rate (CFR)

**2. 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)

**3. Logistics and Infrastructure Indicators:**

Hospital / CFLTC beds occupied, Oxygen cylinders/concentrators available, Ambulances on standby

**4. 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 Pophint (Red Flag)	Immediate Action
<b>Clusters</b>	<b>Geographical or facility-based:</b> 5+ cases linked to one location (office, school, street).	Declare a micro-containment zone; perimeter control and active case finding.
<b>Testing</b>	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.
<b>Lab</b>	Test Positivity rate increases	Increase testing sites in that

		ward.
<b>Hospital</b>	>80% Oxygen bed occupancy	Activate backup/CFLTC beds.
<b>Travel</b>	Cluster of cases from a single flight/train or high-risk arrival group.	Trace all passengers in adjacent seats; implement mandatory institutional quarantine.
<b>Animal</b>	Mass poultry/wildlife death or unusual sickness	Notify Animal Husbandry, sample the area, and dispatch RRT for environmental sampling and zoonotic check.
<b>Mortality</b>	Sudden spike in home deaths or brought-in-dead (BID) cases	Audit the deaths and Active Case Search drive
<b>Additional investigations like Whole Genome Sequencing (WGS)</b>	Detection of a <b>Variant of Concern (VOC) or Variant of Interest (VOI)</b>	Implement strict micro-containment; update clinical protocols to match variant severity.

---

**4. 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 operate under the coordination of the control room's Nodal officers and serve 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	Contact
---------	--------------------	---------

LSG-level announcements		
Social media		
Local Cable TV/Radio		

- All messages disseminated through the Hub shall align with advisories issued by the Health Department and District authorities.
- Community leaders shall be sensitized to support behavior change, reduce stigma, and counter misinformation.
- Special efforts shall be made to reach vulnerable and hard-to-reach populations using locally appropriate communication methods.

**Rumor Tracking:** A designated volunteer will monitor local social media/WhatsApp groups daily to identify misinformation and issue official clarifications via the Communication Hub.

---

**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.

---

**KEY DETAILS:**

- **Nodal Officer for Reporting:**
- **Contact Number:**

Reporting Schedule and Protocols:

<b>To Whom</b>	<b>What to Report</b>	<b>Frequency</b>	<b>Nodal Person</b>
<b>Block PHC</b>	Complete Situation Report (Cases, Quarantine, Beds, Screening, Deaths)		
<b>District IDSP Unit</b>	Outbreaks/Clusters/Unusual Events (>5 cases same ward)		
<b>Veterinary Officer</b>	Animal health events/Zoonotic alerts		
<b>State Cell</b>	Zoonotic cross-sector events		

---

**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 DISTRICT 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 DISTRICT funds alongside state supplies.

RESOURCE INVENTORY AND CONTACTS

<b>Resource Category</b>	<b>Source (District/State/Private)</b>	<b>Contact</b>
<b>PPE Kits/Masks/Gloves</b>	KMSCL	
<b>PPE Kits/Masks/Gloves</b>	Local Vendors	
<b>Oxygen Cylinders/Concentrators</b>	KMSCL	
<b>Medicines/Antivirals</b>	KMSCL	
<b>Medicines/Antivirals</b>	Neethi Shops	
<b>Test Kits (RTPCR/Rapid)</b>	KMSCL	

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	CBO		

---

**INTERDEPARTMENTAL COORDINATION**

Coordination among departments during a pandemic shall be ensured through regular review meetings convened by the DISTRICT President. These meetings will provide a structured platform for sharing situational updates, assessing resource availability, resolving operational gaps, and taking joint decisions to ensure a coordinated and timely response.

Department	Representative	Key Role	Contact
Health (PHC)	Staff Nurse	Case management & vitals monitoring	<a href="#">Arogya Keralam, Kannur</a> : 0497 2709920
Veterinary	Veterinary Surgeon	Animal & zoonotic disease surveillance	<a href="#">Animal Husbandry Dept:</a> 1962 (24/7)

<b>ICDS</b>	Supervisor: <b>Sindhu</b>	Nutrition support & Anganwadi oversight	<a href="#">District ICDS</a> <a href="#">Cell:</a> 0497 2700707
<b>Education</b>	Head Teacher	School coordination & facility usage	Local School Office
<b>Police</b>	Circle Inspector / Station House Officer	Containment enforcement & law/order	<a href="#">Kannur Police</a> <a href="#">HQ:</a> 0497 2700243 (Collectorate)
<b>Water Authority</b>	Assistant Engineer	Ensuring uninterrupted water supply	Kerala Water Authority, Kannur
<b>District Engineering</b>	Executive Engineer	Developing quarantine infrastructure	<a href="#">PWD/LSGD</a> <a href="#">Engineering</a>

**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.

<b>Name of facility</b>	<b>Facility Type</b>	<b>No. of Buildings</b>	<b>Ward</b>	<b>Surge Capacity (Beds)</b>	<b>Nodal Person</b>


**RECOVERY AND REHABILITATION PHASE**

**- Recovery**

- Damage & impact assessment
- Restoration of health services
- Rehabilitation of affected population
- Psychosocial & mental health support
- Disease surveillance during recovery phase
- Environmental cleanup & sanitation
- Livelihood restoration
- Community engagement & confidence building
- Documentation & after-action review
- Lessons learned & best practices
- Health system strengthening

- Policy revision & preparedness enhancement
- Research

## CONCLUSION

### **Additional points**

- tech support
- relief based commodities
- ham reading operators
- hazard vulnerability mapping
- Kseb & other power source
- HR specific responsibility

## RECOMMENDATIONS

### 1. STRENGTHENING HEALTHCARE INFRASTRUCTURE

- Establish a primary health response unit within the Panchayat with trained staff.
- Ensure availability of basic medical supplies (masks, sanitizers, PPE kits, oxygen cylinders).
- Create tie-ups with nearby hospitals in \_\_\_\_\_ for emergency referral and transport.

### 2. 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.

### 3. EMERGENCY RESPONSE & COORDINATION

- Form a Pandemic Preparedness Committee at 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.

### 4. SUPPLY CHAIN & FOOD SECURITY

- Identify and support local suppliers and farmers to ensure uninterrupted food supply.
- Create community kitchens during emergencies to serve vulnerable populations.
- Stockpile essential commodities in Panchayat-run outlets for crisis periods.

### 5. DIGITAL PREPAREDNESS

- Promote digital platforms for telemedicine consultations.
- Use Panchayat's website/social media for real-time updates on health advisories.
- Encourage online grievance redressal to reduce crowding in offices.

### 6. TRAINING & CAPACITY BUILDING

- Organize 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.

---

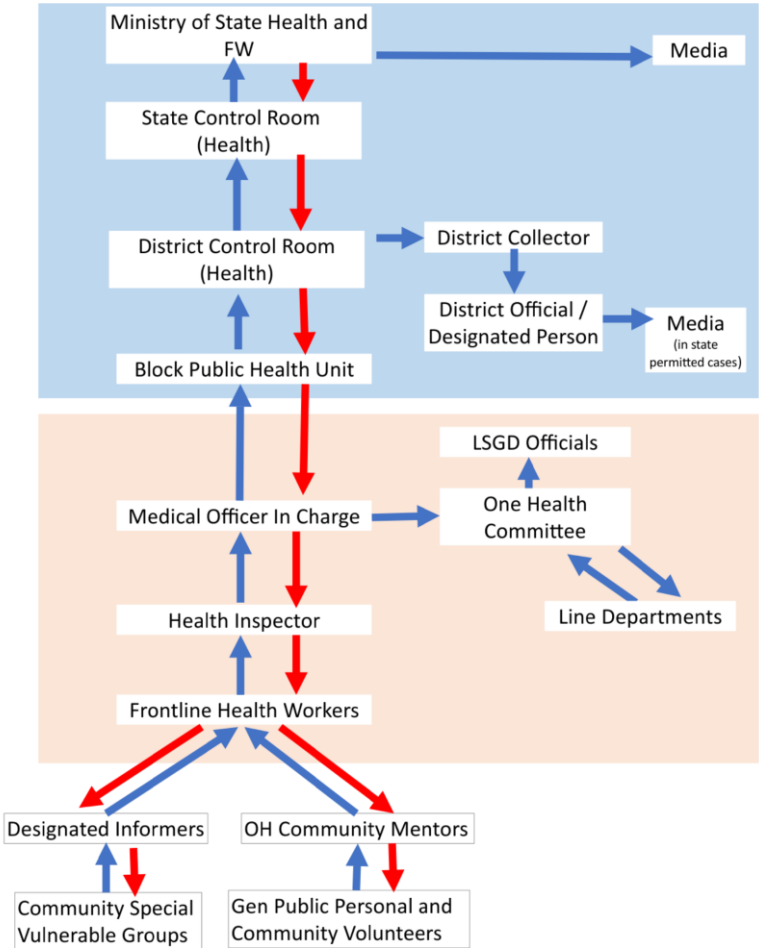
## 7. LONG-TERM RESILIENCE

- Integrate pandemic preparedness into the Panchayat Development Plan.
- Allocate a dedicated budget for health emergencies.
- Encourage community participation in planning and monitoring preparedness measures.

## **MOCKDRILL SCENARIOS**

COMMUNICATION

COMMUNICATION PLAN FLOW CHART  
LSGD >>>> INSTITUTION >>>>>>



COMMUNICATION STRATEGIES

- ▶ **Ward level RRTs, Grama sabhas and Vulnerability groups** have active participation in preparing and executing the pandemic plan (to identify unique issues, prevention, preparedness, response, recovery).
- ▶ Local community leaders involvement
- ▶ **Special trained informers** in Vulnerability groups
- ▶ **multilingual workers**
- ▶ NGOs and Resident Associations
- ▶ **Simple reporting system for public** – IHIP or other application – a snap pic reporting, messages
- ▶ **Home Isolation Monitoring members from the public**
- ▶ Ward level RRTs, Grama sabhas and Vulnerability groups have active participation in preparing and executing the pandemic plan (to identify unique issues, prevention, preparedness, response, recovery).
- ▶ Local community leaders involvement
- ▶ Special trained informers in Vulnerability groups
- ▶ multilingual workers
- ▶ NGOs and Resident Associations
- ▶ Simple reporting system for public – IHIP or other application – a snap pic reporting, messages
- ▶ Home Isolation Monitoring members from public

#### Benefits

- ▶ **Sustainability:** Solutions are more likely to last because they are locally owned.Faster
- ▶ **Response:** Local networks provide quicker initial responses.
- ▶ **Trust & Collaboration:** Builds bridges between communities and external agencies.

## PANDEMIC PREPAREDNESS CAPACITY BUILDING & TRAINING PLAN

### Background & Rationale

- Pandemics pose serious threats to public health, safety, and livelihoods.
- Preparedness requires skilled human resources across sectors.

- Capacity building ensures coordinated, timely, and effective response.
- District-level preparedness is critical for early containment.

### **Objectives of Capacity Building**

- Strengthen readiness of 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 organizations
- Religious & community leaders

### **Modes and Methods of Training**

#### Modes of Training

- 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, Deng	
Training for HCWs				
Training for Public				
Budgeting				
Monitoring & E				

- The schedule aligns training and preparedness activities with seasonal climate and disease patterns.

**Expected Outcomes**

- Improved district-level preparedness
- Skilled and confident workforce
- Effective inter-sectoral coordination
- Reduced morbidity and mortality

**13. Conclusion**

A comprehensive communication and capacity-building plan is vital for effective pandemic preparedness and response. Community engagement, targeted training, and continuous evaluation ensure resilience and sustainability in managing public health emergencies.

**ANNEXURE**

**1. 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 at the time of 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 co-ordination support to reduce the impact of pandemic.

---

**1.1. DETAILS OF LSGS**

Sl.No	Name of the LSG	Name of the President	Contact number
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

1.2. OTHER IMPORTANT PHONE NUMBERS OF GRAMA PANCHAYAT/MUNICIPALITY/CORPORATION AREA

Sl. No.	Name	Contact number
1.		

2.		
3.		
4.		
5.		
6.		
7.	Excise department	
8.	Forest department	

---

### 1.3. IMPORTANT OFFICES OF GRAMA PANCHAYAT/MUNICIPALITY/ CORPORATION

Sl.No	Name of the office	Contact person	Contact number
1.	Village Office	Village Officer	085476 17002
2.	Agriculture Office	Agriculture Officer	<b>0497 270 6154</b>
3.	Animal Husbandry Office	Animal Husbandry Doctor	<b>0497 270 0267</b>
4.	Police Station	Police Officer	<b>094979 96900</b>
5.	BSNL Office	Officer	<b>0497 270 4000</b>
6.	Block Office	Officer	<b>0497 234 3500</b>
7.	KSEB Office	Officer	<b>0497 270 6850</b>
8.	Fisheries Office	Officer	<b>0497 273 1081</b>

9.	Fire and Rescue	Officer	0497 270 6900
----	-----------------	---------	---------------

---

#### 1.4. HEALTH SERVICES

Sl. No	Name of the hospital/institution	Location	Phone number
1.	Government hospitals/PHC		
2.	Private hospitals		
3.	Clinical laboratories		
4.	Chemist/pharmacy		
5.	Blood donors		
6.	Other language experts (Bihari, Hindi, Bengali, Asamees .....)		

---

#### 1.5. VETERINARY SERVICES

SL NO	Institution Name	Telephone
1.	Clinical Lab, Kannur	
2.	DAHO Office	0497-2700267
3.	DIST. ADCP Office	04972702952
4.	District Animal Husbandry Office, Kannur	

5.	<b>District Veterinary Centre, Kannur</b>	<b>0497-2700184</b>
6.	<b>Goat Farm, Komeri</b>	
7.	<b>Livestock Management Training Centre, Mundayad</b>	<b>0497-2721168</b>
8.	<b>PF Mundayad</b>	<b>0497-2721169</b>
9.	<b>Veterinary Dispensary, Arayankeezhu</b>	<b>0490 2400148</b>
10.	<b>Veterinary Dispensary, Ayyappantode</b>	<b>0490 2309184</b>
11.	<b>Veterinary Dispensary, Chittariparamba</b>	<b>0490 2301706</b>
12.	<b>Veterinary Dispensary, Eranholi</b>	<b>0490 2353824</b>
13.	<b>Veterinary Dispensary, Kandakkai</b>	<b>0460 2277500</b>
14.	<b>Veterinary Dispensary, Kolacherimukku</b>	<b>0460 2244010</b>
15.	<b>Veterinary Dispensary, Komeri</b>	<b>0490 2515153</b>
16.	<b>Veterinary Dispensary, Kudiyanmala</b>	<b>0460 2809180</b>
17.	<b>Veterinary Dispensary, Kuttiyeri</b>	<b>0460 2201706</b>
18.	<b>Veterinary Dispensary, Muriyathode</b>	<b>0460 2220688</b>
19.	<b>Veterinary Dispensary, Palayad</b>	<b>0490 2347166</b>
20.	<b>Veterinary Dispensary, Parassinikkadavu</b>	<b>0497 27B4487</b>

21.	Veterinary Dispensary, Pinarayi	0460 2383252
22.	Veterinary Dispensary, Uuzhappala	0497 3851562
23.	Veterinary Dispensary, Vengara	0497 2752077
24.	Veterinary Hospital, Alakkode	0460-2256222
25.	Veterinary Hospital, Cheruvanchery	0490 2304388
26.	Veterinary Hospital, Kuthuparamba	0490 2366615
27.	Veterinary Hospital, Mattanur	0490 2473970
28.	Veterinary Hospital, Mavilayi	0497-2828092
29.	Veterinary Hospital, Pappinissery	0497 2786140
30.	Veterinary Poli Clinic, Chempenthotty	0460-2267616
31.	VPC Iritty	0490-2491900
32.	VPC Payyannur	0498-5206310
33.	VPC Thalassery	0490 2341060
34.	VPC Thaliparamba	0460-2208655

---

#### 1.6. HELPLINE NUMBERS

Helpline	Phone number
Police	094979 96900

Fire and Rescue	0497 270 6900
KSEB	<b>0497 270 6850</b>

---

### 1.7. PUBLIC AND PRIVATE SCHOOLS CONTACT DETAILS

1	<b>St. Michael's A.I.H.S.S., Kannur</b>	Aided	0497-2761565
2	<b>St. Teresa's A.I.H.S.S., Burnacherry</b>	Aided	0497-2702525
3	<b>Chinmaya Vidyalaya, Kannur</b>	Private	0497-2706312
4	<b>Govt. Town H.S.S., Kannur</b>	Govt	0497-2765764
5	<b>Sreepuram English Medium School</b>	Private	0497-2704870
6	<b>Amrita Vidyalayam, Thalap</b>	Private	0497-2701166
7	<b>Ursuline Senior Secondary School</b>	Private	0497-2701831
8	<b>Govt. V.H.S.S. for Girls, Kannur</b>	Govt	0497-2706590
9	<b>Govt. H.S.S., Chala</b>	Govt	0497-2824699
10	<b>D.I.S. Girls H.S.S., Kannur</b>	Aided	0497-2702422

11	<b>St. Michael's A.I.H.S.S., Kannur</b>	Aided	0497-2761565
----	---	-------	--------------

---

1.9. ANGANWADI CONTACT DETAILS

Ward No	Name of Anganwadi Teachers	Phone number
6		
1		
5		
4		
2		
3		

Ward No	Anganwadi No and Name of Teacher	Phone number
7	1.	
	2.	
8		
9	1.	
	2.	
	3.	

---

1.12. INFORMATION REGARDING RESOURCES

<b>Means of transportation</b>	<b>Name of Owner</b>	<b>Phone Number</b>
Heavy Trucks		
Tractor		
Ambulances		
Boats		
Taxi service		

**ANNEXURE 1: LSG BASELINE DATA COLLECTION FORMAT****A. BASELINE DATA**

<b>Sl. No.</b>	<b>Indicator / Field</b>	<b>Baseline Data</b>	<b>Source / Remarks</b>
1	Name of LSG		
2	District	Kannur	
3	Block / Taluk		
4	Type of LSG (Gram Panchayat / Municipality / Corporation)		
5	Area (sq. km)	2584.134	
6	No. of wards	1647	
7	GIS boundary file available	(Yes/No)	
8	Key contact person & phone		

**B. DEMOGRAPHY**

<b>Indicator / Field</b>	<b>Baseline Data</b>	<b>Source / Remarks</b>
Total population	2968202	
Males	1837392	
Females	1682091	
Transgender population	350	
Age distribution (<5, 5–14, 15–59, ≥60)		
No. of households		
Population density (persons/sq.km)	473458.2959	
No. of migrant workers	86837	

Major occupational groups		
---------------------------	--	--

**C. VULNERABLE POPULATIONS & SOCIAL RISKS**

Sl. No.	Indicator / Field	Baseline Data (Value / Description)	Source / Remarks
1	No. of elderly ( $\geq 60$ )	452723	High priority for palliative outreach.
2	No. of persons with disability	9368	Registered under UDID/SJD.
3	No. of bedridden persons	10817	Monitored by Palliative Care Teams.
4	No. of chronic disease cases (DM/HTN/COPD/CKD etc.)	405832	DM, HTN, CKD (NCD Registry).
5	Pregnant women (current estimate)	19505	Current estimate (MCP Registry).
6	Children <5 years	170720	Anganwadi/Health Dept coverage.
7	Tribal population (if any)	18194	Primarily in Aralam & Kottiyoor.

8	Fisherfolk / coastal vulnerable groups (if any)	4513	High-risk sea erosion zones.
9	Urban slums / unnotified settlements (if any)	Limited (Scattered)	Pockets in Kannur City & Thalassery.
10	Homeless population	~1,200	Night shelters in Thavakkara active.
11	Orphanages / old age homes (number & capacity)	78 (Cap. ~3,500)	Combined SJD & NGO facilities.
12	Hostels / prisons / shelters (number & capacity)	Hostels: 200+   Prisons: 3	Central Prison (Pallikkunnu) & Sub-jails.
13	Poverty / BPL estimate	191,029 Families	Ration card/Antyodaya data.
14	Food insecurity hotspots	Aralam Tribal Settlement	Remote hill areas during monsoons.
15	Any history of stigma/discrimination issues (Yes/No)	No	Strong community support (Jagratha Samithi).

**D. HEALTH SYSTEM & SERVICE READINESS**

<b>Sl. No.</b>	<b>Indicator / Field</b>	<b>Baseline Data (Value / Description)</b>	<b>Source / Remarks</b>
1	No. of health facilities in LSG (PHC/CHC/TH/DH/Private)	142	
2	PHC/Family Health Centre details (name, location)		
3	Subcentres / Health & Wellness Centres (number)	418	
4	Private clinics / hospitals (number)	207	
5	Labs available (public/private)	374	
6	Availability of ambulance services (Yes/No, number)	Yes	
7	Availability of isolation/quarantine facilities (Yes/No, details)	Yes	
8	Cold chain facilities (Yes/No, details)	Yes	
9	Stockpile space available (Yes/No)	Yes	
10	PPE / mask / sanitizer availability plan (Yes/No)	Yes	
11	Surveillance staff available (JHI/JPHN/ASHA count)	Yes	
12	Existing emergency referral pathways (Yes/No)	Yes	

**E. POINTS OF ENTRY & MOBILITY**

<b>Sl. No.</b>	<b>Indicator / Field</b>	<b>Baseline Data (Value / Description)</b>	<b>Source / Remarks</b>
1	Bus stands / depots (number)	15+	Includes major terminals:  Kannur Central (Thavakkara)  Old Bus Stand  City Stand, and KSRTC depots at Kannur (Caltex),  Payyanur and  Thalassery  .
2	Railway stations (number)	13	Key stations:  <a href="#">Kannur (CAN)</a> , Thalassery (TLY), Payyanur (PAY), and  Mahe (MAHE) Part of the Palakkad division Southern Railway.
3	Boat jetties / fishing harbours (number)	3 Harbours / 4+ Landing Centres	Mopla Bay Azhikkal  , and Thalai are major fishing harbours. Jetties include  Dharmadom and New Mahe  .

4	Ports / airports nearby (specify distance)	Kannur Intl (CNN) : ~25–28 km	Azhikkal Port is the major minor port. Nearest other airports:  Kozhikode (CCJ)  at 128 km and  Mangalore (IXE)  at 149 km.
5	Major highways/roads passing through	NH 66, SH 30, SH 34	NH 66 (formerly NH 17) connects Kozhikode and Mangaluru. SH 30 (Thalassery-Coorg , Mysore is a major interstate highway.
6	Border crossings (state/district)	Mahe (Puducherry), Kodagu (KA)	Coastal crossing at Mahe; hilly terrain crossings into Kodagu district, Karnataka via ,Iritty,Kootupuzha
7	Major markets / weekly markets	8+ Major Hubs	Central markets in Kannur, Thalassery, and Payyanur. Weekly markets active in rural panchayats like Peravoor
8	Tourism hubs / major event venues	Payyambalam, Muzhappilangad	Payyambalam Beach

			St. Angelo Fort Muzhappilangad Drive-in Beach and Parassinikkadavu Temple
9	Schools/colleges with hostels (number)	~50+	Major sites: GMC Pariyaram Kannur University campuses , and prominent residential schools like Ursuline
10	Factories / large workplaces (number)	150+	Concentrated in Valiyavelicham Industrial Growth Centre  and handloom cooperatives across the district.

**F. WATER, SANITATION & HYGIENE (WASH)**

Sl. No.	Indicator / Field	Baseline Data (Value / Description)	Source / Remarks
1	Major drinking water sources (piped / wells / borewells / springs)		
2	No. of public wells		

3	No. of households with piped water connection		
4	Water quality testing routine (Yes/No)		
5	Common contamination risks (flooding, salinity, industrial waste)		
6	Open defecation free status (Yes/No)		
7	Solid waste management system (Yes/No)		
8	Bio-medical waste disposal mechanism (Yes/No)		
9	No. of public toilets		
10	Handwashing stations in public places (Yes/No)		

**G. ZOOBOTIC RISKS & ONE HEALTH**

<b>Sl. No.</b>	<b>Indicator / Field</b>	<b>Baseline Data (Value / Description)</b>	<b>Source / Remarks</b>
1	Livestock population (cattle/goats/pigs/poultry) – estimates	112	
2	No. of dairy farms / poultry farms / pig farms		
3	Slaughterhouses / meat shops (number)		

4	Animal markets (Yes/No, details)		
5	Veterinary dispensaries (number)		
6	History of zoonotic outbreaks (rabies, leptospirosis, avian flu etc.)		
7	Stray dog population management measures (Yes/No)		
8	Rodent infestation hotspots (Yes/No)		
9	Wetlands / waterlogged areas prone to leptospirosis		
10	Bat roosting areas / caves / fruit orchards (if any)		
11	Human-animal interface hotspots (farms near residences)		

**H. CLIMATE & DISASTER RISKS (PANDEMIC AMPLIFIERS)**

<b>Sl. No.</b>	<b>Indicator / Field</b>	<b>Baseline Data (Value / Description)</b>	<b>Source / Remarks</b>
1	Flood-prone wards (list)	215	
2	Landslide-prone wards (list)	171	
3	Cyclone/sea surge risk (Yes/No)		
4	Heatwave risk zones (Yes/No)		

5	Waterlogging areas (list)		
6	Shelter homes / relief camps (number, capacity)		
7	Past disaster displacement history		
8	Disruption to water supply/transport common (Yes/No)		

**I. CRITICAL INFRASTRUCTURE & LOGISTICS**

<b>Sl. No.</b>	<b>Indicator / Field</b>	<b>Baseline Data (Value / Description)</b>	<b>Source / Remarks</b>
1	Schools (number)	1476	
2	Anganwadis (number)	2377	
3	Colleges (number)	91	
4	Community halls (number)		
5	Places of worship with large gatherings (number)		
6	Large markets / shopping areas (number)		
7	Warehouses / cold storages (number)		
8	Telecom/mobile network coverage gaps (Yes/No)		

9	Power outage frequency (high/medium/low)		
10	Availability of generators in key facilities		

<b>Indicator / Field</b>	<b>Baseline Data (Value / Description)</b>	<b>Source / Remarks</b>
<b>Schools (number)</b>	<b>1,476</b>	Includes Govt, Aided, and Unaided Sametham Data Bank.
<b>Anganwadis (number)</b>	<b>2,377</b>	Operating as per Poshan Tracker.
<b>Colleges (number)</b>	<b>91</b>	Includes Arts & Science, Professional, and Govt Colleges.
<b>Community halls (number)</b>	<b>136+</b>	Based on listed municipal and private auditors.
<b>Places of worship (gathering)</b>	<b>30+ Major Sites</b>	Major pilgrim centers like Parassinikadavu and Kottiyoor.

<b>Large markets / Shopping</b>	<b>10+ Major Hubs</b>	Centers like Kannur Market Capitol Mall, and Thana Square
<b>Warehouses / Cold storages</b>	<b>5+ Major Units</b>	Key units in <b>Karuvanchal</b> and <b>Naduvil</b> , KSWC Warehouse in Thavakkara
<b>Telecom coverage gaps</b>	<b>Yes</b>	Limited gaps reported in high-altitude interior regions of <b>Iritty</b> taluk.
<b>Power outage frequency</b>	<b>Medium</b>	Occasional scheduled maintenance; increases during monsoon.
<b>Generators in key facilities</b>	<b>Available</b>	Essential in hospitals, malls ( <b>Capitol Mall</b> ), and govt offices

#### J. RISK COMMUNICATION & COMMUNITY NETWORKS

<b>Sl. No.</b>	<b>Indicator / Field</b>	<b>Baseline Data (Value / Description)</b>	<b>Source / Remarks</b>
1	Ward-level rapid response teams (Yes/No)	Yes	Active in all 1,600+ wards across 81 LSGs; includes HI, ASHAs, and volunteers.
2	Jagratha samithis / committees active (Yes/No)	Yes	Functional at the Panchayat level to monitor social issues and health alerts.

3	Kudumbashree presence and strength (number of units)	~31,000 units	Massive network of Neighborhood Groups (NHGs) with over 4.5 lakh members.
4	Volunteer network (number, coverage)	50,000+ registered	Includes Sannadha Sena and local youth clubs (DYFI, MYL, etc.) providing 100% ward coverage.
5	Community-based surveillance mechanisms (Yes/No)	Yes	ASHA-led door-to-door monitoring for "fever clusters" and unusual animal deaths.
6	IEC dissemination channels (WhatsApp groups, community radio, PA systems)	Multi-channel	WhatsApp groups (Ward-level), PA systems on auto-rickshaws, and local cable TV.
7	Rumour tracking mechanisms (Yes/No)	Yes	Managed by the District Information Office (IPRD) and Police Cyber Cell.
8	Languages spoken / literacy considerations	Malayalam (Primary)	95.10% Literacy; English/Hindi used for migrant labour camps (e.g., Valapattanam).
9	Vulnerable groups communication strategy available (Yes/No)	Yes	Targeted communication for the elderly and palliative patients via ASHA workers.

**K. PREPAREDNESS PLANNING & GOVERNANCE**

<b>Sl. No.</b>	<b>Indicator / Field</b>	<b>Baseline Data (Value / Description)</b>	<b>Source / Remarks</b>
1	LSG emergency plan available (Yes/No)	Yes	
2	Pandemic preparedness plan available (Yes/No)	Yes	
3	Incident Command System identified (Yes/No)	Yes	
4	Rapid procurement mechanism available (Yes/No)	Yes	
5	Emergency fund available (Yes/No, amount)	No	
6	Past outbreak response experience (Yes/No, details)	Yes	
7	Intersectoral coordination mechanism (Health, Police, LSG, Veterinary, Education)	Yes	
8	Mock drills conducted in last 12 months (Yes/No)	No	
9	Training coverage for staff/volunteers (Yes/No)	Yes	

**L. SURVEILLANCE & DATA SYSTEMS**

<b>Sl. No.</b>	<b>Indicator / Field</b>	<b>Baseline Data (Value / Description)</b>	<b>Source / Remarks</b>
1	Digital reporting tools used (e.g., DHIS2, portals)	Yes	
2	Availability of line-listing format (Yes/No)	Yes	
3	Contact tracing team identified (Yes/No)	Yes	
4	Mapping of high-risk households available (Yes/No)	Yes	
5	Testing sample transport mechanism (Yes/No)	Yes	
6	Reporting timeline adherence (good/average/poor)	Yes	
7	Data sharing between departments (Yes/No)	Yes	
8	Availability of dashboard for monitoring (Yes/No)	Yes	

**M. ADDITIONAL NOTES & OBSERVATIONS**

<b>Sl. No.</b>	<b>Indicator / Field</b>	<b>Baseline Data (Value / Description)</b>	<b>Source / Remarks</b>
1	Key challenges perceived by LSG		

2	Top 5 high-risk wards (reason)		
3	Any unique local risks (industrial pollution, refugee camps, etc.)		
4	Recommendations for preparedness strengthening		