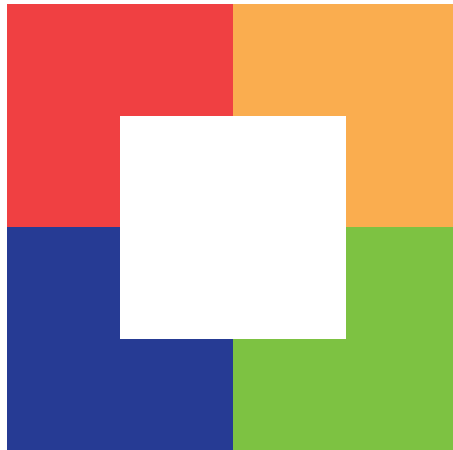


PANDEMIC RESPONSE FRAMEWORK

(Based on COVID 19 and other diseases outbreaks in Kerala as a prototype)



**Department of Health & Family Welfare
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 hospitals and getting diagnosed. The health system is built over a period of time to respond to any such eventuality. That is the reason that outbreaks of Nipah or mPox are detected early and are 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. 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 have these learnings been put to practice to manage any 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 and pandemic management plans at Panchayath, District and Institution level were prepared.

To have a generic framework of guidelines to tackle any pathogen outbreak/ epidemic/ pandemic, it was felt that the works done during COVID, guidelines and protocols developed should be studied. Also other outbreaks such as Nipah, m Pox guidelines, protocols should be examined to develop the framework. During COVID, as nothing was known about the virus, as pandemic progressed, a series of guidelines were issued. To ensure preparedness, it is necessary to have the framework of protocols and guidelines so that future teams need not reinvent the same thing over a period of time and should be in position to respond from day one. Based on this thinking, a team was formed and they were asked to do bunching of guidelines as: guidelines for people, guidelines for paramedical and support staff, guidelines for clinicians, guidelines for other line departments and support systems, etc. It was also decided to make it concise by aggregating various guidelines to same segment of people.

In Kerala, the response involved the issuance of numerous Government Orders, circulars, guidelines, advisories, and standard operating procedures covering healthcare, disaster management, local self-governance, education, welfare, food security, finance, sanitation, transportation, and digital administration. These orders reflected the evolving nature of the pandemic and the State's efforts to balance public health protection with continuity of essential services and social stability.

This document is a systematic compilation of COVID-19-related Government Orders and guidelines issued by various departments of the Government of Kerala, organized chronologically and thematically. It documents the progression of administrative and public health responses from early containment and lockdown measures to phased reopening, vaccination programmes, adaptive governance, and long-term pandemic management strategies. The compilation also highlights

the importance of decentralized governance, multisectoral coordination, digital transformation, welfare interventions, and evidence-based decision-making during a large-scale public health crisis.

In addition to the COVID-19-related Government Orders and guidelines, this compilation also incorporates selected administrative directives, advisories, and public health guidelines issued by the Government of Kerala in response to other infectious disease outbreaks and emerging public health threats such as Nipah virus disease, Mpox, Zika virus disease, Dengue, Influenza, and other communicable diseases.

The inclusion of these documents provides a broader perspective on outbreak preparedness and public health emergency governance in the State. Kerala's prior experiences in managing outbreaks such as Nipah significantly influenced its rapid and structured response during the COVID-19 pandemic, particularly in areas such as surveillance, contact tracing, quarantine management, risk communication, and interdepartmental coordination.

Beyond serving as a historical archive, this document is intended to function as a reference framework for future pandemic preparedness and disaster management planning. The preparation of this compilation was guided by the recognition that the experiences and administrative lessons learned during the COVID-19 pandemic must be preserved as institutional memory for future reference. This document may be useful for policymakers, public health professionals, administrators, researchers, educators, disaster management authorities, healthcare institutions, and students seeking to understand the operational and administrative dimensions of pandemic management in Kerala. It is hoped that this compilation will contribute to strengthening preparedness, promoting coordinated governance, and supporting future efforts to respond effectively to public health emergencies and other large-scale crises.

Every effort has been made to present the contents accurately and systematically for ease of reference and documentation. The compilation stands as a testament to the collective efforts of the Government machinery, healthcare workers, local self-government institutions, frontline personnel, volunteers, and the people of Kerala who worked together during an extraordinary period of uncertainty and challenge.

The pandemic response framework would not have been possible without the support of the state resource officers team of Dr Anuja, Dr Aravind, Dr Ravi, Dr Tony, Dr Zinia, Dr Ramiz Raja, Dr Bilal and oversight support of Dr Viswananthan.

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

Dr Rajan Khobragade IAS
Addl Chief Secretary
Health and Family Welfare

List of Abbreviations

ASHA – Accredited Social Health Activist
CFLTC – COVID First Line Treatment Centre
CSLTC – COVID Second Line Treatment Centre
DCC – Domiciliary Care Centre
DME – Directorate of Medical Education
GAD – General Administration Department
GMC – Government Medical College
GO – Government Order
H&FW – Health and Family Welfare
IPC – Infection Prevention and Control
KSDMA – Kerala State Disaster Management Authority
OMU – Outbreak Monitoring Unit
PPE – Personal Protective Equipment
RRT – Rapid Response Team
SOP – Standard Operating Procedure
TPR – Test Positivity Rate

From the desk of Director

The COVID-19 pandemic presented an extraordinary challenge to healthcare systems, public administration, medical education, and society at large. Kerala's response to the pandemic was marked by coordinated multisectoral action, evidence-based public health interventions, decentralized governance, and continuous adaptation to rapidly evolving circumstances. During this period, numerous Government Orders, guidelines, circulars, and standard operating procedures were issued by various departments of the Government of Kerala to address the diverse clinical, administrative, educational, welfare, and disaster management aspects of the pandemic response.

This document, compiled systematically by the team under the Directorate of Medical Education, represents an important effort to organize and preserve these orders and guidelines in a structured chronological and thematic manner. The compilation serves as a valuable institutional archive documenting the evolution of public health governance and administrative response during one of the most significant public health emergencies in recent history. It also reflects the extensive coordination between health systems, local self-government institutions, disaster management authorities, educational institutions, and multiple government departments during the pandemic period.

Importantly, this compilation extends beyond COVID-19 and incorporates relevant orders and guidelines related to other communicable disease outbreaks such as Nipah, Mpox, Zika, Dengue, Influenza, and other emerging public health threats. The inclusion of these documents strengthens the value of this work as a comprehensive preparedness and reference resource for future outbreak response and health emergency planning.

I appreciate the dedicated efforts of the team involved in collecting, reviewing, categorizing, and documenting these materials. I hope that this compilation will serve as a useful reference for policymakers, healthcare administrators, public health professionals, researchers, educators, and students, while also contributing to strengthening institutional memory, preparedness planning, and evidence-informed governance for future public health emergencies.

Dr Viswanathan
Director Medical Education

LIST OF CONTRIBUTORS

Dr. Anuja U, Special Officer, DME

Dr Ravindran Chirukandath, Professor, Department of Surgery GMC Thrissur

Dr. Aravind R, Head of Department of Infectious Diseases, GMC
Thiruvananthapuram

Dr. Zinia T Nujjum, Professor & Head Community Medicine, GMC Kollam

Dr. Tony Lawrence, Professor (CAP), Community Medicine, GMC Kasaragod

Dr. Ramiz Raja A, Assistant Professor, Community Medicine, GMC
Thiruvananthapuram

Dr. Bilal S R, Assistant Professor, Community Medicine, GMC Thiruvananthapuram

INDEX

Chapter	Page Number
1. Introduction	11
2. Analysis of orders and guidelines issued according to the phases of the COVID-19 pandemic in Kerala State	15
3. Functional and administrative domain-wise orders and guidelines issued during the COVID-19 pandemic in Kerala State	18
4. Guidelines and orders related to other communicable diseases of public health concern in Kerala State	59
5. Conclusion	65
6. Annexures	67

1.Introduction

The emergence of COVID-19 in 2020 challenged health systems, governments, and societies across the world at an unprecedented scale. The pandemic demonstrated that effective outbreak response requires not only medical preparedness but also rapid administrative coordination, legal adaptability, intersectoral governance, public communication, community participation, and continuity planning for essential services. During this period, the Government of Kerala issued numerous Government Orders (G.O.s), circulars, standard operating procedures (SOPs), advisories, and regulatory guidelines to address evolving epidemiological, public health and administrative challenges.

This document is a systematically organized chronological compilation of those COVID-19-related orders and guidelines issued by various departments of the Government of Kerala. The compilation includes directives concerning disease surveillance, quarantine protocols, containment strategies, clinical management of cases, institutional functioning, travel regulations, educational administration, workforce management, vaccination programs, public communication, digital governance, emergency response coordination, and phased reopening measures.

Beyond serving as a historical record of the COVID-19 response, this compilation is intended to function as a strategic reference repository for future pandemic preparedness and emergency health governance. Emerging infectious diseases, novel pathogens, zoonotic spillovers, antimicrobial-resistant organisms, and future global outbreaks remain significant threats to public health systems worldwide. In such situations, governments and institutions often require rapid operational frameworks for decision-making under conditions of uncertainty. The experiences, administrative mechanisms, and procedural adaptations documented during the COVID-19 pandemic provide valuable practical templates that may be reviewed, modified, and applied according to the epidemiological characteristics of future health emergencies.

The compilation also offers substantial material for studying the preservation and systematic organization of COVID-19-related Government Orders, guidelines, circulars, and standard operating procedures issued by the Government of Kerala are of significant value for future pandemic preparedness and emergency health governance. Pandemics and outbreaks caused by emerging or unknown pathogens may occur unpredictably, often after long intervals during which institutional experience can be lost due to changes in administrative personnel, health officials, and policymakers. This compilation serves as an important institutional memory archive that documents the strategies, legal frameworks, coordination mechanisms, public health interventions, and operational models implemented during the COVID-19 pandemic. Although future outbreaks may vary in terms of transmissibility, severity, mode of transmission, and affected populations, many of the administrative and public health principles adopted during COVID-19—such as surveillance activation, containment zoning, quarantine management, hospital preparedness, workforce deployment, risk communication, continuity of essential services, and supply chain regulation—remain universally relevant. The document therefore provides a practical reference framework that can be reviewed, adapted, and contextualized according to the characteristics of future public health emergencies.

In addition to its archival importance, this compilation serves as a valuable resource for preparedness planning, policy evaluation, research, and multisectoral emergency governance. The documented orders provide real-world examples that can support pandemic preparedness exercises, mock drills, public health emergency training, disaster management education, incident command system development, and interdepartmental the timeliness of interventions, governance responses during uncertainty, administrative flexibility, community-based containment approaches, and the effectiveness of non-pharmaceutical interventions. Importantly, the COVID-19 response demonstrated that pandemics affect multiple sectors beyond healthcare, including education, transportation, labour, commerce, law enforcement, local self-governance, digital infrastructure, and social welfare systems. The orders compiled in this document illustrate how coordinated multisectoral governance can be operationalized during large-scale emergencies. Furthermore, many of the SOPs and administrative mechanisms developed during COVID-19—such as infection prevention and control (IPC) measures, isolation and quarantine protocols, social

distancing regulations, workplace safety standards, human resource management in COVID hospitals, and digital public service systems including online portals for COVID-19 death certification and laboratory test reporting—can serve as foundational templates for future outbreak response. Consequently, this document functions not merely as a historical collection of notifications but as a living administrative and public health reference framework intended to strengthen resilience, preparedness planning, and evidence-informed governance for future pandemics in Kerala and beyond.

Summary of Pandemic Response Phases

The administrative response to a public health crisis of global proportions requires a dynamic shift from reactive containment to proactive, data-driven governance. In the context of Kerala's pandemic management, this evolution is characterized by a transition through distinct operational stages, moving from the initial shock of the outbreak to a sophisticated model of "living with the virus."

The following analysis outlines the four-phase administrative trajectory that defined the state's strategy. It highlights how the government balanced public safety with economic necessity, transitioning from centralized emergency mandates to localized, SOP-driven regulations. This progression reflects not only a maturation of public health infrastructure but also a significant leap in digital governance and community-level resilience.

Phase I: Early Preparedness (Jan – Mar 2020)

Focus: Prevention and Containment.

Strategy: Leveraged experience from the Nipah virus to establish surveillance, airport screenings, and rapid response teams.

Outcome: Early implementation of contact tracing and initial social restrictions.

Phase II: Emergency Control (April – May 2020)

Focus: Suppression and Administrative Rigor.

Strategy: Strict statewide lockdowns, curfews, and centralized management of essential services and interstate travel.

Outcome: High level of state control to curb transmission while maintaining essential supply chains.

Phase III: Risk-Based Reopening (June – Dec 2020)

Focus: Economic Continuity and Stabilisation.

Strategy: Shifted from blanket lockdowns to sector-specific Standard Operating Procedures (SOPs) and expanded digital governance.

Outcome: A transition toward "risk-based management," allowing workplaces and offices to function under regulated guidelines.

Phase IV: Adaptive Governance (2021 Onwards)

Focus: Vaccination and Long-term Coexistence.

Strategy: Data-driven policy focusing on mass vaccination logistics and tailoring restrictions to local Test Positivity Rates (TPR).

Outcome: A strategic shift from total suppression to managing the virus as part of a "new normal," prioritizing public health data over rigid lockdowns.

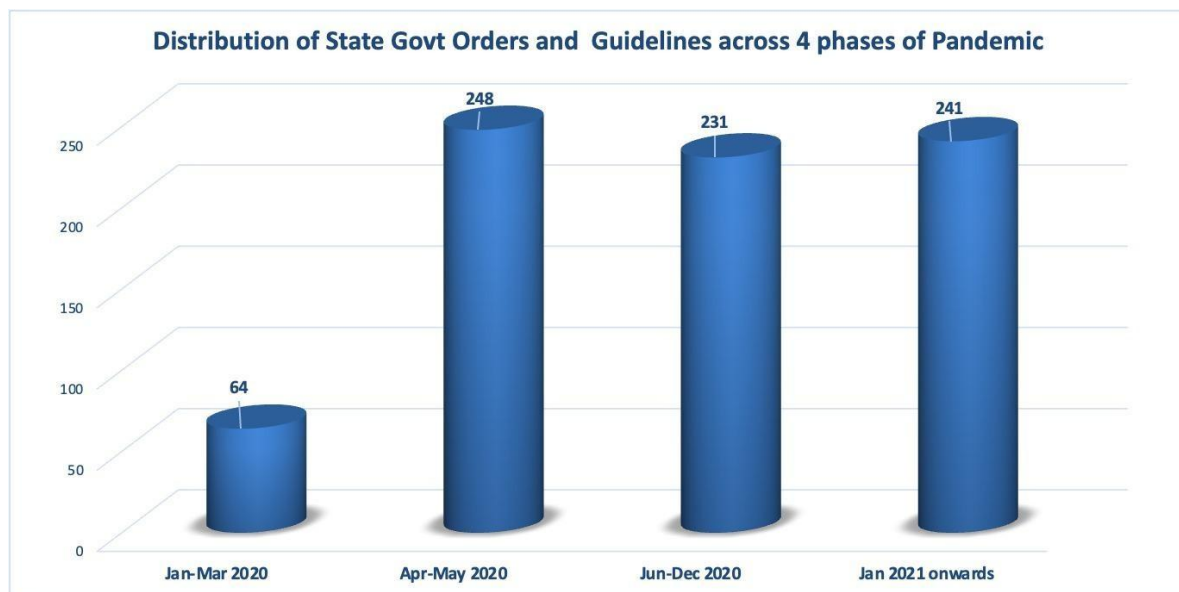
2. Analysis of orders and guidelines issued according to the phases of the COVID-19 pandemic

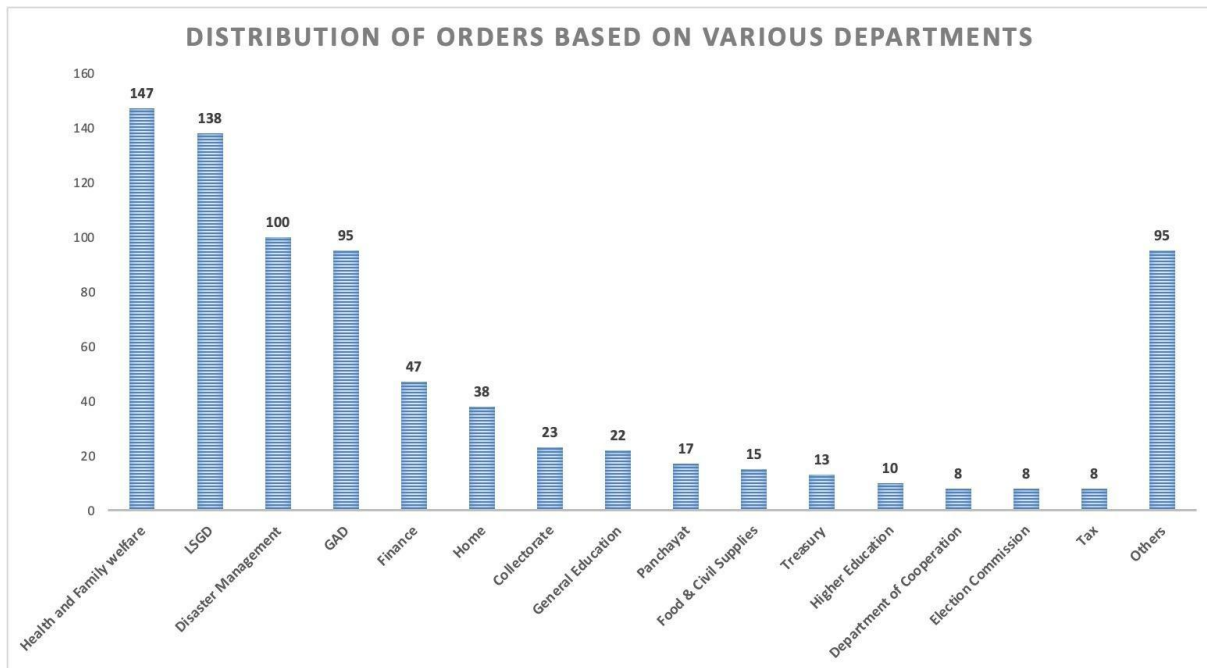
The COVID-19 pandemic required governments to issue a large number of administrative orders, guidelines, circulars, and standard operating procedures within a short period of time to manage rapidly evolving public health, social, economic, and governance challenges. The Government of Kerala adopted a dynamic and phase-wise administrative response strategy that evolved according to the epidemiological situation, healthcare demands, scientific evidence, and operational requirements during different stages of the pandemic. The distribution of Government Orders and guidelines across various phases of the pandemic reflects the intensity of administrative activity, the changing priorities of governance, and the transition from emergency containment toward long-term adaptive pandemic management.

The present analysis categorizes the Government Orders and guidelines into four broad pandemic phases: Early Preparedness and Containment (January–March 2020), Lockdown and Emergency Administrative Control (April–May 2020), Gradual Reopening and SOP-based Regulation (June–December 2020), and Vaccination and Adaptive Governance Phase (January 2021 onwards). The number of orders issued during each phase provides insight into the administrative burden, policy complexity, and governance evolution associated with the pandemic response in Kerala. The trends observed also demonstrate how the state progressively expanded its regulatory, healthcare, welfare, digital governance, and multisectoral coordination mechanisms during successive stages of the crisis.

The relatively lower number of orders during the preparedness phase was followed by a dramatic escalation during the lockdown period, reflecting the urgent need for rapid administrative intervention during a public health emergency. The continued issuance of large numbers of orders during the vaccination and adaptive

governance phase highlights that pandemic management extended far beyond the initial emergency period and required sustained multisectoral coordination, policy revision, and public health oversight. This indicates that the Government of Kerala adopted a highly dynamic and responsive administrative approach characterized by continuous policy adaptation, decentralized implementation, integration of digital governance mechanisms, and evidence-based public health decision-making.





Managing the pandemic was not limited to healthcare services alone; rather, it involved simultaneous administrative action across public health, disaster management, finance, local self-governance, education, food security, welfare, taxation, elections, and other sectors. Consequently, a large number of Government Orders, circulars, advisories, and guidelines were issued by various departments of the Government of Kerala to address the evolving epidemiological situation and ensure continuity of governance and essential services during different phases of the pandemic.

The distribution of Government Orders across departments provides important insight into the operational structure of pandemic governance and highlights the relative administrative responsibilities undertaken by different sectors during the crisis. The variation in the number of orders issued by different departments reflects their level of involvement, functional responsibilities, and operational intensity during the pandemic response. The analysis also demonstrates how Kerala adopted a highly integrated governance model in which multiple departments worked collaboratively to manage healthcare delivery, disaster response, welfare systems, public communication, economic regulation, and social protection during the pandemic.

3. Functional and administrative domain-wise orders and guidelines issued during the COVID-19 pandemic

3.1 Lockdown, Restrictions & District-Level Measures

This category includes orders aimed at controlling community transmission at the population level. These measures primarily regulate public movement, gatherings, economic activity, and localized containment strategies. District-level measures are often based on epidemiological indicators such as case load, positivity rate, clustering or hotspot identification. The logic of this category is to group all population-level non-pharmacological interventions (NPIs) intended to reduce transmission dynamics within communities.

Kerala's response was structured around a national lockdown framework (issued by the Government of India and adopted/adapted by the State), supplemented by State-level orders that imposed additional restrictions or granted graded relaxations district-wise. Initial lockdown measures (March 2020) were progressively relaxed from late April 2020 with phased timelines (20 April, 18-31 May, etc.). Containment zones were declared at ward and district level when case clusters emerged, each containment zone received district-level orders under Section 30 of the Disaster Management Act, 2005. The Kerala Epidemic Diseases (COVID-19 Restrictions), Rules 2020 codified the legal framework. During the second wave (April–June 2021) the State declared a fresh lockdown with tighter controls, then issued staged relaxation orders from 17 June 2021 onwards.

A total of 238 orders in this theme were issued and relevant are listed below.

Representative orders

Date	G.O. / Circular Number	Type	Subject
2020-03-21	G.O. (M.S) No. 54/2020/H&FWD	Order	In exercise of the powers conferred by sections 2, 3 & 4 of the Epidemic Diseases Act, 1897 (Central Act 3 of 1897), the Government of Kerala issue the following regulations regarding COVID-19 for the strict compliance, for the containment management and control of COVID-19 as part of an endeavour to eliminate COVID-19 from the State
2020-03-23	G.O. (M.S) No. 49/2020/GAD	Order	GAD - Covid-19- strong possibility of a widespread outbreak of Novel Corona Virus (COVID-19) lockdown in the entire state of Kerala - regulations under section 2 of the Epidemic Diseases Act, 1897 and The Disaster Management Act, 2005
2020-03-25	G.O. (P) No. 16/2020/HOME	Order	In exercise of the powers conferred by sub clauses (i) and (ii) of clause (a) of sub-section (1) of Section 2 of the Kerala Essential Services Maintenance Act 1994 (6 of 1994), the Government of Kerala hereby declare the services connected with the following to be essential services for the purposes of the said Act
2020-03-26	G.O. (M.S) No. 55/2020/DMD	Order	Covid -19 The Guideline on Measures to be taken by Ministries/Departments/Departments of Government of INDIA, State/Union Territory Governments and State/Union Territory Authorities for Containment of COVID-19 epidemic Issued by Ministry of Home Affairs, Government of India Accepted
2020-03-26	G o(Ms) No.51I2020/ GAD	Order	GAD- Covid-19- strong possibility of a widespread outbreak of Novel Corona Virus COVID 19) lockdown in the entire state of Kerala - regulations under section 2 of the Epidemic Diseases Act, 1897 and The Disaster Management Act- modified orders issued
2020-03-26	GO (R0 No.1269 I2020IG	Order	GAD- Covid-19- strong possibility of a widespread outbreak of Novel Corona Virus (COVID-19) lockdown in the entire state of Kerala - regulations under Section 2 of the Epidemic Diseases Act, 1897 and The Disaster Management Act- round the clock war room in government secretariat-orders issued
2020-03-27	G.O. (R.T) No. 196/2020/F&P	Order	Covid 19 - Epidemic Control Measures Prohibitives orders issued under Epidemic Act, 1897 and the Disaster Management Act

			-2005 - Regulatory Measures to be followed in marine and Inland Fisheries
2020-03-27	No. 6650/Leg.H1/2020/Law.	Ordinance	The Kerala Epidemic Diseases Ordinance - 2020
2020-03-28	Go (Rq No. 1285 /2020/ GAD	Order	GAD-Covid-Ig issuing instructions, guidelines, directions to various authorities in connection with COVID-19 containment activities-orders issued
2020-03-28	G.o.(Rt)No. I 286/ 2020 I G AD	Order	GAD- Covid- 19- strong possibility of a widespread outbreak of Novel Corona Virus (COVID-19) lockdown in the entire state of Kerala - regulations under Section 2 of the Epidemic Diseases Act, 1897 and The Disaster Management Act- round the clock war room in government secretariat-head of war room changed-orders issued
2020-03-30	G.O.(Ms)No.53/20201 GAD	Order	GAD- COVID-19- lockdown in the entire state of Kerala - designating Addl. Chief Secretary, Home & Vigilance in overall charge of all Covid related activities in the State- orders issued
2020-04-03	Go (Ms) No. 59/2020/GAD	Order	General Administration Department - Covid 19 containment activities permission to open Tea, Cardamom, Coffee, Oil Palm, Cashew and Clove plantations for essential farming activities - granted - orders issued

3.2 Office Functioning, Working Hours & Work-From-Home

This category focuses on continuity of governance, workforce management, and institutional functioning during the pandemic. While lockdown measures restrict movement broadly, governments also need mechanisms to ensure the uninterrupted functioning of essential administration and public services. Orders in this category regulate staffing patterns, attendance norms, office timings, remote working arrangements, and infection prevention within workplaces.

Government, semi-government, autonomous, and PSU offices operated under a sequence of guidelines refined repeatedly through 2020 and 2021. Biometric punching was suspended early (since 10 March 2020) and resumed only after restrictions eased (October 2021). During lockdown, work-from-home was permitted on a graded basis, attendance was capped (often at 25–50% for daily-wage / contract staff) and Saturdays were observed as full working days during peak periods. Treasury, Panchayat, Civil Supplies, Krishibhavan, and Secretariat offices each received tailored sub-guidelines. Where consolidated GAD orders were issued,

they explicitly superseded earlier office-functioning circulars; refer to the most recent GAD / Disaster Management consolidated order for the operative rule.

A total of 44 orders in this theme were issued and relevant are listed below.

Representative orders

Date	G.O. / Circular Number	Type	Subject
2020-03-10	No. DCN4/50/2020/GAD	Circular	Order suspending biometric punching system till 31-03-2020 in all government, semi-government and private institutions in the State in view of the Coronavirus outbreak
2020-03-18	No. SS1/50/2020/GAD	Circular	COVID-19 - Preventive Activities - Precautionary measures to be observed in government offices
2020-03-20	G.O. (R.T) No. 1247/2020/GAD	Order	COVID-19 Preventive Activities - Temporary arrangements regarding working hours and attendance of staff in government offices in the State
2020-03-21	G. O. (Ms) No.4Bi2 020 I GAD	Order	GAD - Covid-19- strong possibility of a widespread outbreak of Novel Corona Virus (COVID-19) in Kerala State - regulations under section 2 of the Epidemic Diseases Act.
2020-03-26	G.O. (M.S) No. 50/2020/GAD	Order	Restrictions and follow-up actions in connection with preventing the spread of COVID-19
2020-03-27	G.O. (R.T) No. 1282/2020/GAD	Order	Revised order on functioning of government employees and offices - Preventive activities to control COVID-19 spread
2020-03-30	Go (Ms) No.52I I2020IGAD	Order	GAD- Covid-19- regulations to contain the Covid-19 pandemic- arrangements for functioning of excise department - orders issued
2020-04-01	GO (Ms) No. 55/2020/GAD	Order	GAD-Covid-19 - general lock down- exemption to hotels near check posts to run their take away counters-orders issued
2020-04-02	GO (Ms) No.56I2020IG	Order	GAD-Covid-19 - general lock down- exemption categories-Permission for online delivery of foods to operate up to 8 pm- order issued
2020-04-03	Go (Ms) No. 58/2020/GAD	Order	GAD-Covid-19 - general lock down- exemption categories-permission for parcel service to function- orders issued
2020-04-04	Go (Ms) No. 60I2020/GAD	Order	GAD Covid 19 general lock down- exemption categories-permission for mineral based industries orders issued

2020-04-04	GO (Ms) No. 61 /2020/GAD	Order	GAD-Covid-19 general lock Government of Kerala Abstract down- proposal from Chief postmaster General, Kerala Circle to pay cash to the individuals at their residence through Aadhar enables payment system(AePS)- Approved - Orders Issued

3.3 Quarantine, Returnees & Travel Passes

Returnees from abroad and from other Indian states were placed under a structured quarantine system led by local self-government institutions, with Ward-level Monitoring Committees and Local-Body-level Committees formed to track home-quarantined persons, deliver welfare support and enforce protocols. Detailed home-quarantine and testing protocols were issued (with an affidavit form for those entering home isolation). NORKA Roots administered a Rs. 5,000 per-person assistance package for stranded expatriates from the Chief Minister's Distress Relief Fund, with additional sanctions over the period. Inter-state travel was governed by a system of passes; KSRTC operated dedicated services to important office complexes (Civil Stations, Collectorates, High Court) and during the second wave essential-service workers were granted transport facilities alongside health workers.

A total of 36 orders in this theme were issued and relevant are listed below.

Representative orders

Date	G.O. / Circular Number	Type	Subject
2020-03-24	NO./31/2020/Health	Medical Board Decision	COVID - 19 State Medical Board Decision with regard to Quarantine of Healthcare workers who are Low Risk Asymptomatic Secondary Contact of A Proven Covid -19 Case
2020-03-27	No. DC1/71/2020/LSGD	Circular	Regarding data collection of those in home isolation to further strengthening COVID-19 activities in the State
2020-03-31	No./31/F2/2020/Health	Guidelines	Addendum to Revised Guidelines for Testing, Quarantine, Hospital Admission and Discharge for COVID-19 based on current risk management grid published on 12/03/2020
2020-03-31	MENTAL HEALTH PROGRAMME	Guidelines	Corona Outbreak - Mental Health Guidelines - For those in isolation

2020-04-13	G.O. (R.T) No. 233/2020/Norka	Order	Order issued sanctioning emergency financial assistance to eligible expatriate Malayalis in the context of COVID-19
2020-04-16	G.O. (R.T) No. 234/2020/Norka	Order	Guidelines on making life-saving medicines available to expatriates in foreign countries in the context of COVID-19
2020-04-20	G.O. (R.T) No. 236/2020/Norka	Order	Order constituting a Secretary-level committee and issuing guidelines on arrangements for expatriates returning to Kerala
2020-04-29	G.O (Rt) No. 1404/2020/GAD	Order	GAD- Novel Corona Virus disease (COVID-19)- bringing back the people who are stranded in other States due to Lock Down- orders issued
2020-04-30	G.O. (R.T) No. 439/2020/DMD	Order	Entrusting M/S Tata Projects Limited for the construction of COVID 19 Hospital - an Emergency Quarantine and Isolation Facility at Kasaragode
2020-05-02	DCPTA/1185/2020/DM5	Order	COVID-19 - Implementation of emergency preventive activities - Arrangements for accommodating people in quarantine
2020-05-07	G.O. (R.T) No. 256/2020/NORKA	Order	Outbreak of Novel Corona virus disease (Covid 19) standard operating procedures (SOP) to screen and quarantine Indian nationals stranded outside the country, returning to Kerala - Modified
2020-05-10	G.O. (R.T) No. 857/2020/H&FWD	Order	Order issuing detailed guidelines on home quarantine and testing procedures for COVID-19 control in the State

3.4 COVID-19 Testing, Treatment and Discharge Guidelines

establishment and regulation of COVID treatment centres, management of asymptomatic and symptomatic patients, infection prevention and control (IPC) measures within healthcare settings, telemedicine services, digital reporting systems, and coordination between healthcare institutions, laboratories, and public health authorities.

A major theme within this category is the dynamic adaptation of testing and treatment strategies according to evolving scientific understanding and healthcare demands during successive phases of the pandemic. During the early phase, emphasis was placed on containment-oriented testing and institutional isolation, whereas later stages saw expansion of testing capacity, home isolation models,

decentralized patient management, teleconsultation systems, and standardized discharge protocols aimed at optimizing healthcare resources. The category also reflects increasing integration of digital health governance through online laboratory reporting systems, COVID certification mechanisms, discharge documentation, and mortality reporting procedures. This category includes Government Orders, clinical guidelines, circulars, advisories, and standard operating procedures related to COVID-19 testing strategies, patient management, treatment protocols, hospitalization policies, discharge procedures, and certification systems implemented during the COVID-19 pandemic. The categorization reflects the central role of diagnostic services, clinical management, and continuity of healthcare delivery in controlling disease transmission, reducing morbidity and mortality, and ensuring efficient utilization of healthcare resources during a rapidly evolving public health emergency. As the pandemic progressed, testing and treatment policies underwent continuous revision in response to emerging scientific evidence, changing epidemiological patterns, healthcare system capacity, and updated national and international recommendations.

The documents included under this category address issues such as RT-PCR and Rapid Antigen Testing protocols, laboratory reporting systems, eligibility criteria for testing, surveillance-based testing strategies, clinical categorization of patients, home isolation guidelines, hospitalization criteria, oxygen therapy protocols, referral mechanisms, treatment cost regulation in private hospitals, discharge policies, follow-up care, and COVID-19 mortality certification procedures. The orders also include directives concerning .

Twenty relevant orders in this theme are listed below.

Representative Orders

Date	G.O. / Circular Number	Type	Subject
28-08-2021	NO:41/31/F2/2020/Health	Guideline	COVID 19 Testing Strategy for KERALA State
15-06-2021	No.35/31/F22020/H&FW-2020	Guideline	Revised testing Guidelines for COVID-19
12-05-2021	No.27/31/F2/2020/H&FW	Guideline	Optimisation of COVID 19 Testing Strategy in the Second Wave of the Pandemic
25-04-2021	No.18/31/F2/2020/Health	Guideline	Covid 19 Discharge Guidelines for Kerala State
15-04-2021	No.13/31/F2/2020 Health	Guideline	Augmented Testing strategy for kerala state - April 2021
27-11-2020	No./31/F2/2020/Health	Advisory	Advisory on Covid-19 Screening and Testing of Officers, Staff and Security Personnel Involved in Election Duties
19-11-2020	No./31/F2/2020/Health	Advisory	Advisory with Regard to Re-Testing Patients who have been cured of Covid 19.
14-10-2020	No./31/F2/2020/Health	Guideline	Revised Discharge Guidelines for Covid-19 Patients
15-08-2020	No./31/F2/2020/Health	Guideline	Covid -19 - Revised Testing Guidelines
12-08-2020	G.O. (R.T) No. 1486/2020/H&FWD	Guideline	Health & Family welfare department - Walk-in Covid-19 test facility in private laboratories - orders issued
21-07-2020	No.31/f-2/2020/H&FW	Guideline	Amendment to the Revised Discharge Guidelines for Covid 19 Patients dated 01/07/2020

02-07-2020	No.31/f-2/2020/H&FW	Guideline	Addendum to Advisory on Testing of expatriates screened positive for IGM at Airport
03-06-2020	No.31/f-2/2020/H&FW	Guideline	Revised Guideline on Covid -19 Testing and Quarantine / Isolation
27-05-2020	No.31/f-2/2020/H&FW	Advisory	Addendum to the Advisory for quarantine and testing of prisoners who are newly Incarcerated or returning to jail after parole
25-05-2020	No.31/f-2/2020/H&FW	Guideline	Truenat Beta CoV Testing at Government Laboratories
24-04-2020	No./31/F2/2020/Health	Advisory	Advisory COVID 19 - Testing augmentation - Xpert - SARS - CoV-Testing
16-04-2020	G.O. (R.T) No. 725/2020/H&FWD	Guideline	Covid 19 Antibody Testing (IgG and IgM) in the private sector in Kerala Order Issued
25-03-2020	No./31/F2/2020/Health	Guideline	COVID - 19 Protocol for Management of Covid Care Centers
24-03-2020	No./31/F2/2020/Health	Guideline	Covid - 19 Advisory for Pregnancy and Labour Management
24-03-2020	NO./31/2020/Health	Guideline	COVID-19 INTERIM Treatment Guidelines for Kerala State

3.5 Serosurvey, sentinel surveillance guidelines and reports

insights into the actual burden of infection beyond laboratory-confirmed cases and helped assess community-level exposure during successive waves of the pandemic. The findings contributed to planning of containment strategies, vaccination prioritization, healthcare preparedness, and risk communication measures. The category also reflects the increasing importance of data-driven public health decision-making and integration of research-based evidence into administrative and clinical response systems during large-scale outbreaks. This category includes Government Orders,

guidelines, circulars, technical advisories, survey protocols, and reports related to COVID-19 serosurveillance and seroprevalence studies conducted during the pandemic. The categorization reflects the important role of serological surveys in understanding the epidemiology, transmission dynamics, population exposure, and immunity patterns associated with COVID-19. Unlike routine diagnostic testing, serosurveys are population-based public health investigations designed to estimate the proportion of individuals who have developed antibodies against SARS-CoV-2 due to prior infection or vaccination. These studies provided critical evidence for assessing the spread of infection within communities, identifying vulnerable populations, evaluating the extent of asymptomatic transmission, and guiding public health policy decisions during different phases of the pandemic.

The documents included under this category address issues such as serosurvey methodology, sampling strategies, laboratory testing protocols, ethical considerations, district-level and statewide survey implementation, reporting formats, interpretation of seroprevalence data, integration of survey findings into public health planning, and coordination between health departments, research institutions, laboratories, and field surveillance teams. The orders and reports also include directives related to target population selection, age-group stratification, healthcare worker surveys, urban-rural comparisons, vaccination-related antibody studies, data management systems, and dissemination of epidemiological findings for policy and planning purposes.

A major theme within this category is the use of evidence-based epidemiological surveillance to support adaptive pandemic governance. Serosurveys are very important epidemiological tools during outbreaks and pandemics particularly in situations involving asymptomatic infections, underreporting, or limited testing coverage.

Representative orders

Date	G.O. / Circular Number	Type	Subject
25-08-2021	G.O.(Rt)No.1803/2021/H&FWD	G.O	Health & Family Welfare Department - Kerala COVID-19 (SARS CoV2 IgG) SEROPREVALENCE Study - Sanction accorded - Orders issued
08-10-2020	Baseline Report	Report	Results of community based sero-surveillance using rapid antibody test among special groups in Kerala - Baseline Report
14-07-2020	No.31/f-2/2020/H&FW	Guidelines	Sentinel Surveillance in Coastal, Slum & Tribal Areas
October 2021	COVID 19 SERO SURVEILLANCE REPORT August- September 2021	Report	REPORT OF THE KERALA COVID-19 (SARS CoV-2 IgG) SEROSURVEY- AUG-SEPT 2021 Report of the sero-epidemiological survey. Survey is perhaps the first of its kind in India which also focuses on specific vulnerable populations like the Antenatal women, Tribal, coastal, and urban slum populations. https://dhs.kerala.gov.in/wp-content/uploads/2021/10/SS-Report-Aug-Sept-2021.pdf
March 2021	REPORT OF THE KERALA COVID-19 (SARS CoV-2 IgG) SEROSURVEY	Report	REPORT OF THE KERALA COVID-19 (SARS CoV-2 IgG) SEROSURVEY- MARCH 2021 https://dhs.kerala.gov.in/wp-content/uploads/2021/03/Sero-Surveillance-Report-March-2021.docx.pdf

3.6 Health Services, Treatment Centres & Vaccination

This category comprises Government Orders, guidelines, circulars, and administrative directives related to the organization, expansion, and management of healthcare services during the COVID-19 pandemic, including the establishment of treatment facilities, strengthening of health systems, clinical management protocols, and implementation of vaccination programmes. The categorization is based on the functional role of the health sector in pandemic response, particularly in ensuring

continuity of essential healthcare delivery while simultaneously managing large-scale infectious disease control measures.

The documents included under this category reflect the progressive strengthening of Kerala's healthcare infrastructure during different phases of the pandemic. These orders addressed issues such as designation of COVID-19 hospitals and first-line treatment centres, isolation wards, intensive care preparedness, oxygen supply management, laboratory testing systems, referral mechanisms, infection prevention and control (IPC) measures, human resource deployment in healthcare institutions, telemedicine services, and continuity of non-COVID essential health services. The category also includes directives concerning clinical protocols, patient triage systems, home isolation monitoring, biomedical waste management, mortality reporting, and protection measures for healthcare workers. Collectively, these measures illustrate how the health system adapted dynamically to changing epidemiological demands and healthcare burdens during successive waves of the pandemic.

A graded treatment infrastructure was established: Domiciliary Care Centres (DCCs), COVID First-Line Treatment Centres (CFLTCs) and COVID Second-Line Treatment Centres (CSLTCs / SLTCs). Detailed and repeatedly-updated guidelines covered their formation and management; from 12 November 2020 the Secretary of Local Body chaired the CFLTC management committee in place of elected head. The State strengthened front-line capacity by retaining post-retirement staff (March 2020 and April 2020 retirees), deploying additional staff nurses to all PHCs and CHCs, sanctioning an incentive for palliative care nurses (extended for further six months), and Rapid Response Team (RRT) ward committees with rotation and refresher training. ASHA workers received a special incentive. Oxygen availability was made the responsibility of the local body, with detailed usage guidelines issued during the second wave. Pulse oximeters received specific use-protocols. The State implemented free vaccination for the 18-45 age group as part of the Centre's third-phase national vaccination policy. Mental-health support guidelines were issued separately for health workers, the elderly, those caring for children, those in isolation, and the general public. On end-of-life issues, COVID-19 death certification followed

the Ministry of Health & Family Welfare's national guidelines (with appeal provisions) and detailed protocols protected the dignity of the deceased while permitting release of the body to relatives when requested.

A total of 131 orders in this theme were issued and relevant are listed below.

Representative orders

Date	G.O. / Circular Number	Type	Subject
2020-03-11	G.O. (R.T) No. 560/2020/H&FWD	Order	Coronavirus (COVID-19) - Order assigning various departments to take emergency action to control the spread
2020-03-16	G.O. (R.T) No. 580/2020/H&FWD	Order	Constitution of COVID 19 Cells in Various Departments
2020-03-20	NO./31/2020/Health	Guidelines	Covid - 19 Guidelines for Employees in Shopping Centers and Shopping Malls
2020-03-20	NO./31/2020/Health	Guidelines	Covid - 19 Guidelines for Beauty Parlours and Saloons
2020-03-20	Reference Guide	Reference Guide	Reference Guide for Converting Hospitals into Dedicated COVID Hospitals
2020-03-24	No./31/F2/2020/Health	Guidelines	Covid - 19 Advisory for Pregnancy and Labour Management
2020-03-24	No./31/2020/Health	Guidelines	Covid - 19 Advisory for Infection Control Precautions to be adopted in dental care settings
2020-03-24	No./31/F2/2020/Health	Guidelines	Guidelines for Routine Vaccination including Out Reach Immunisation Programme under UIP
2020-03-24	NO./31/2020/Health	Guidelines	COVID-19 INTERIM Treatment Guidelines for Kerala State
2020-03-25	No./31/F2/2020/Health	Protocol	COVID - 19 Protocol for Management of Covid Care Centers
2020-03-25	No./31/F2/2020/Health	Guidelines	COVID-19 Guidelines for Distribution of Laboratories
2020-03-28	No./31/F2/2020/Health	Guidelines	Advisory for Patient Admissions to COVID Care Centers

Unlike categories focused primarily on movement control or administrative restrictions, this section represents the direct clinical and public health response component of pandemic governance. The compilation therefore serves as an important reference framework for future preparedness planning, particularly in relation to surge capacity development, treatment centre organization, vaccination logistics, healthcare workforce management, IPC practices, and continuity of healthcare services during future outbreaks caused by emerging infectious diseases or unknown pathogens.

3.7 Mental Health & Psychosocial

This category includes Government Orders, guidelines, advisories, circulars, and administrative measures related to mental health services, psychosocial support systems, counselling mechanisms, and community-based psychological care implemented during the COVID-19 pandemic. The categorization recognizes that pandemics are not only biological and public health emergencies but also major psychosocial crises that affect the mental well-being of individuals, families, healthcare workers, vulnerable populations, and society as a whole. The prolonged nature of COVID-19, combined with fear of infection, social isolation, quarantine, bereavement, economic uncertainty, stigma, and disruption of normal social life, created significant psychological stress requiring structured mental health interventions as part of the overall pandemic response.

The State's Mental Health Programme issued four distinct mental-health guidelines tailored to: health workers; people caring for children; the elderly; and the general public. A dedicated study report on domestic violence faced by women and girls during the lockdown informed follow-up action. The documents included under this category reflect Kerala's efforts to integrate mental health and psychosocial support into public health emergency management.

A total of 4 orders in this theme were issued and relevant are listed below.

Representative orders

Date	G.O. / Circular Number	Type	Subject
2020-03-30	MENTAL HEALTH PROGRAMME	Guidelines	Corona Outbreak - Mental Health Guidelines - For health workers
2020-03-31	MENTAL HEALTH PROGRAMME	Guidelines	Corona Outbreak - Mental Health Guidelines - For those caring for children
2020-03-31	MENTAL HEALTH PROGRAMME	Guidelines	Corona Outbreak - Mental Health Guidelines - For the elderly
2020-03-31	MENTAL HEALTH PROGRAMME	Guidelines	Corona Outbreak - Mental Health Guidelines - For the general public

3.8 Local Self-Government Institutions & Community Kitchens

This category includes Government Orders, guidelines, circulars, and administrative directives related to the role of Local Self-Government Institutions (LSGIs) and community kitchen systems during the COVID-19 pandemic. The categorization reflects the critical importance of decentralized governance and community-based support mechanisms in managing large-scale public health emergencies. During the pandemic, Local Self-Government Institutions—including Gram Panchayats, Municipalities, and Corporations—played a central role in implementing containment measures, coordinating field-level surveillance, supporting vulnerable populations, ensuring continuity of essential services, and facilitating community participation in pandemic response activities.

The documents included under this category demonstrate how Kerala operationalized decentralized public health governance through local administrative structures. Orders in this section addressed activities such as ward-level surveillance, contact tracing support, quarantine monitoring, sanitation and disinfection measures, awareness campaigns, volunteer mobilization, distribution of medicines and essential commodities, management of containment zones, support for migrant workers, and coordination of local emergency response systems. The pandemic highlighted the importance of local governance institutions as the primary interface between the government and the community, enabling rapid implementation of public health measures at the grassroots level.

A major component of this category relates to the establishment and functioning of community kitchens, which became an essential social support mechanism during lockdowns and movement restrictions. The community kitchen model was designed to ensure food security and uninterrupted access to cooked meals for vulnerable populations including elderly individuals living alone, persons in quarantine, economically disadvantaged families, migrant labourers, stranded individuals, and those affected by loss of livelihood during the pandemic. The orders documented in this section include guidelines regarding establishment of community kitchens, interdepartmental coordination, food preparation standards, volunteer participation, distribution systems, hygiene and safety measures, and financial and logistical support mechanisms.

Community Kitchens (run with Kudumbashree) provided meals at Rs. 20 per meal under a Rs. 23.64 crore initial corpus drawn from Kudumbashree's plan fund, scaling to a Rs. 2,000 crore 'CM's Helping Hand Loan Scheme (CMHLS)' delivered through Kudumbashree neighbourhood groups (and later through cooperative institutions). Janakeeya Hotels carried this model forward. MGNREGS and the Ayyankali Urban Employment Scheme were re-started during the pandemic with PPE provision (face masks, gloves) funded from Block Panchayat General Purpose Grants. A 100-day-completion special bonus was sanctioned. Annual Plans for 2020-21 and 2021-22 were re-prioritised to allow LSGIs to take up emergency COVID projects. The General Education 'First Bell' digital classes were supported by LSGIs (procurement of TVs/laptops/computers using local-body funds; KSFE Vidyasree micro-savings scheme for students). LSGI meetings were permitted online; Administrative Committees received specific operating guidelines while elected councils were not in place; and a dedicated bank-account mechanism was approved for handling COVID-purpose donations to LSGIs.

A total of 112 orders in this theme were issued and relevant are listed below.

Representative orders

Date	G.O. / Circular Number	Type	Subject
2020-02-01	No. DC1/71/2020/LSGD	Circular	Measures to be taken under the leadership of local self-government institutions in connection with COVID-19 prevention measures in the State
2020-03-14	G.O. (R.T) No. 20/2020/LSGD	Order	Measures to be taken under the leadership of local self-government institutions in connection with COVID-19 prevention measures in the State
2020-03-20	G.O. (M.S) No. 55/2020/LSGD	Order	Activities and responsibilities to be undertaken by local self-government institutions in connection with COVID-19 prevention measures in the State
2020-03-20	G.O. (R.T) No. 686/2020/LSGD	Order	'COVID-19 Cell' formed in the Local Self-Government Department in connection with COVID-19 prevention measures in the State
2020-03-20	G.O. (R.T) No. 695/2020/LSGD	Order	Considering the COVID-19 situation, the last date for paying property tax without penalty, renewing various licences including trade licences, and paying entertainment tax in local self-government institutions has been extended to 30/04/2020

2020-03-25	G.O. (R.T) No. 710/2020/LSGD	Order	Further directions on measures to be taken under the leadership of local self-government institutions in connection with COVID-19 prevention in the State
2020-03-26	G.O. (R.T) No. 713/2020/LSGD	Order	COVID-19 Preventive Measures - Setting up of Community Kitchens under the auspices of Kudumbashree in coordination with local self-government institutions - Guidelines
2020-03-26	G.O. (R.T) No. 713/2020/LSGD	Order	Order issued giving guidelines for setting up Community Kitchens under the auspices of Kudumbashree in coordination with local self-government institutions for COVID prevention activities
2020-03-27	G.O. (R.T) No. 715/2020/LSGD	Order	Order to withdraw Rs. 23.64 crore from the 2019-2020 plan fund of Kudumbashree and use the amount for initial expenses of 'Corpus Fund to Kudumbashree for setting up of 1000 Community Kitchens' to provide lunch at Rs. 20 as part of relief measures announced by the Hon. Chief Minister in the context of COVID-19
2020-03-28	No. DC1/71/2020/LSGD	Circular	COVID-19 Preventive Activities - Service of volunteers - Guidelines
2020-03-28	No. DC1/71/2020/LSGD	Circular	COVID-19 Preventive Activities - Operational guidelines for Community Kitchens under the auspices of local self-government institutions and Kudumbashree
2020-04-03	G.O. (R.T) No. 733/2020/LSGD	Order	Order issued giving clarification on setting up of Community Kitchens under the auspices of Kudumbashree - COVID-19 prevention measures in the State

3.9 Education — Schools & General Education

This category includes Government Orders, guidelines, circulars, advisories, and standard operating procedures related to schools and the general education sector during the COVID-19 pandemic. The categorization reflects the significant impact of the pandemic on educational systems and the need for continuous adaptation to ensure both infection control and continuity of learning. Educational institutions were among the earliest public spaces to be closed during the pandemic due to the high risk of disease transmission associated with crowding, close interpersonal interaction, and large-scale movement of students, teachers, and staff.

Consequently, the education sector required extensive administrative regulation and phased operational planning throughout different stages of the pandemic.

The documents included under this category address a wide range of issues concerning closure and reopening of schools, transition to online and digital learning platforms, conduct of examinations, academic calendar modifications, attendance regulations, health and safety protocols in schools, teacher deployment, student welfare measures, and continuity of educational services during lockdowns and movement restrictions. The orders also include guidelines for phased reopening of schools, classroom distancing norms, sanitation and hygiene measures, mask use, staggered attendance systems, screening procedures, management of suspected COVID-19 cases within educational institutions, and coordination between health and education departments for safe institutional functioning.

A major theme within this category is the rapid expansion of digital and remote education mechanisms during the pandemic. The orders reflect efforts to operationalize online classes, television-based learning programmes, digital content dissemination, virtual examinations, and technology-assisted educational delivery systems to minimize academic disruption. At the same time, the pandemic exposed challenges related to digital access, educational inequality, psychosocial stress among students, and the need for support systems for children from vulnerable backgrounds. Several directives therefore focused on inclusive learning strategies, mental health support for students, and community-based educational assistance.

Public education shifted online: 'First Bell' (later 'First Bell 2.0') was the State's flagship digital-learning programme, supported by an Empowered Committee. Admission to Classes 1–10 in Government and Aided schools and issuance of transfer certificates moved online. SSLC / Higher Secondary / Vocational Higher Secondary examination centre changes were managed centrally. Hostel fees and library fines were waived for the 23 March – 15 May 2020 period. Mid-Day Meal Scheme was converted to a food security allowance / food kit distribution mechanism, with March 2020 honorarium arrears released for cooks. Children were enlisted as 'Break the Chain' ambassadors. Promotion guidelines were issued for the 2020-21 and 2021-22 academic years. The Department of General Education's video-conference directions of 13 May 2020 set early operational guidance.

A total of 24 orders in this theme were issued and relevant are listed below.

Representative orders

Date	G.O. / Circular Number	Type	Subject
2020-03-26	No./31/F2/2020/Health	Guidelines	COVID-19 - Guidelines for Residents' Associations
2020-04-08	N.M.A 3/24295/2019/D.G.E	Circular	State School Mid-Day Meal Scheme - Allotment sanctioned for arrears of honorarium for school cooks for March 2020
2020-05-05	No. R&R(1)/90070/2020/DGE	Order	General Education - Guidelines on measures to be taken before reopening schools for the 2020-21 academic year
2020-05-08	Q.I.P.1/9141/2020/DGE	Circular	Regarding guidelines for promotion of students for the 2020-21 academic year
2020-05-14	No.C4/9661/2020	Circular	Directions in the Director of General Education's video conference dated 13/05/2020
2020-05-15	No.Q.I.P.1/9141/2020/D.G.E	Circular	Regarding admission and transfer in Government / Aided / Unaided schools
2020-05-27	G.O. (R.T) No. 672/2020/HEDN	Order	Order granting permission to conduct admission to Technical High Schools for the 2020-2021 academic year through online mode
2020-05-28	Guideline	Reference Guide	School examinations - General directions
2020-05-28	G.O. (R.T) No. 1737/2020/GED	Order	Order granting permission to conduct admission and issue of transfer certificates online for classes 1 to 10 in Government and Aided schools
2020-06-03	QIP(1)/9141/2020/DGE	Circular	Online classes - Availability of classes for children - Regarding follow-up actions
2020-06-04	Q.I.P.1/9141/2020/DGE	Guidelines	Regarding publication of guideline for online classes
2020-06-12	Q.I.P.1/9141/2020/DGE	Order	Regarding issuance of further guidelines for online classes

3.10 Higher & Technical Education

This category includes Government Orders, guidelines, circulars, advisories, and standard operating procedures related to higher education institutions and technical education systems during the COVID-19 pandemic. The categorization reflects the unique administrative, academic, and public health challenges faced by universities, colleges, professional institutions, polytechnics, engineering colleges, technical training centres, and other institutions of higher learning during the

pandemic. Unlike school education, higher and technical education institutions involve large-scale student mobility, residential campuses, laboratory-based training, clinical postings, research activities, internships, examinations, and inter-state or international student interactions, all of which required specialized regulatory and operational measures during different phases of the pandemic.

The documents included under this category address issues such as closure and phased reopening of colleges and universities, transition to online teaching and virtual academic platforms, conduct of university examinations, modifications to academic schedules, hostel management protocols, campus infection prevention and control measures, laboratory and workshop safety guidelines, continuation of research activities, internship and clinical training regulations, and management of student movement between states and districts. The orders also include directives concerning attendance norms, faculty deployment, blended learning models, digital evaluation systems, online admissions, and conduct of meetings, seminars, and academic activities through virtual platforms.

A major component of this category relates to the rapid digital transformation of higher and technical education during the pandemic. Institutions were required to adopt online learning management systems, virtual classrooms, digital assessment mechanisms, remote academic administration, and technology-enabled educational delivery models to ensure continuity of teaching and learning. At the same time, the pandemic highlighted significant challenges related to digital accessibility, practical and laboratory-based training limitations, disruption of clinical and field postings, delays in examinations and certification processes, and mental health concerns among students and faculty. Several guidelines therefore focused on balancing academic continuity with student safety, maintaining quality of education, and ensuring compliance with public health protocols within campus environments.

Universities, government / aided / self-financing colleges, polytechnics and engineering colleges followed a State-wide academic calendar revision. A committee was constituted to study post-lockdown completion of academic activities and examination conduct. Examination centres were permitted outside university

jurisdictions to maintain physical-distancing norms. Polytechnic exam norms were revised. The 2nd-year HSE Improvement Examination order (allowing improvement in up to three subjects) was withdrawn. April-2021 Higher Secondary 2nd-year evaluation followed a separate notification. Seat increases were sanctioned in Arts & Science colleges affiliated to Kerala universities for 2021-22. From 4 October 2021, all higher education institutions including professional colleges were permitted to reopen.

A total of 13 orders in this theme were issued and relevant are listed below.

Representative orders

Date	G.O. / Circular Number	Type	Subject
2020-05-18	G.O. (R.T) No. 622/2020/HEDN	Order	Order revising norms for conduct of examinations in Polytechnic Colleges - COVID-19 epidemic control
2020-05-23	Press Release	Press Note	List of permitted SSLC / Higher Secondary / Vocational Higher Secondary examination centre changes published
2020-05-27	G.O. (R.T) No. 677/2020/HEDN	Order	Order granting permission to set up examination centres outside the university's jurisdiction for conducting university examinations while observing COVID-19 prevention guidelines
2020-05-29	No.31/f-2/2020/H&FW	Order	Covid 19 Health Advisory for the conduct of examinations in poly technical colleges/technical education department
2020-06-10	G.O. (R.T) No. 762/2020/HED	Order	Guidelines on admission fee hikes in higher education institutions (including professional colleges) and on disbursement of salary/honorarium to teaching and non-teaching staff in the financial crisis caused by COVID-19
2020-06-23	G.O. (R.T) No. 843/2020/HED	Order	College Education - Personnel - Order granting permission to open hostels under the Department of Collegiate Education for students for only seven days
2020-07-27	G.O. (M.S) No. 131/2020/GED	Order	General Education - Higher Secondary - Order cancelling the order that allowed improvement in up to three subjects in the second-year HSE Improvement Examination
2020-08-11	G.O.(Rt)No.2464/2020/GAD	Order	GAD Covid19 regulations to contain the Novel Corona Virus Disease (COVID19) regulations in the

			form of general lock down payment of hostel fee by students orders issued
2021-04-28	Press Release	Press Note	SSLC Exam Date Change.Reg
2021-04-30	No.Ex.II/03/1010/HSE/2021	Circular	Regarding evaluation of second-year examinations of April 2021 - Higher Secondary Education Department
2021-05-31	Press Release	Press Note	2021 Higher Secondary First Year Examination notification
2021-06-06	No.K2/25/2021/HED	Direction	Higher Education - Regarding postponement of university examinations scheduled to be held from 15 June 2021 due to COVID-19

3.11 Finance, Treasury, Salary & Pensions

The categorization reflects the critical role of financial governance in maintaining administrative continuity, sustaining public services, supporting healthcare response systems, and managing the economic impact of the pandemic. During COVID-19, governments faced extraordinary fiscal pressures due to increased healthcare expenditure, emergency welfare measures, economic slowdown, revenue reduction, and the need for rapid mobilization of financial resources. Consequently, specialized financial and treasury-related administrative measures became essential components of pandemic governance.

The documents included under this category address issues such as treasury functioning during lockdowns, salary disbursement mechanisms, pension payment systems, deferment or regulation of financial expenditures, emergency fund allocation, financial support for COVID-19 response activities, operation of government financial institutions under movement restrictions, and continuity of essential financial services. The orders also include directives concerning revised office functioning within treasury departments, digital financial transactions, e-governance mechanisms for pension and salary processing, special financial packages, welfare assistance, budgetary reallocations, and emergency procurement procedures related to pandemic management.

A major theme within this category is the balancing of fiscal sustainability with emergency expenditure requirements during a prolonged public health crisis. The pandemic necessitated rapid financial decision-making to support healthcare infrastructure development, procurement of medical supplies, vaccination activities,

welfare schemes, community kitchens, and relief measures for vulnerable populations, while simultaneously ensuring timely payment of salaries and pensions to government employees and beneficiaries. Several directives therefore focused on maintaining uninterrupted treasury services, minimizing physical crowding in financial institutions, promoting online and contactless financial transactions, and ensuring continuity of pension distribution to elderly and vulnerable individuals during lockdowns and movement restrictions.

A package of fiscal-stabilisation measures was issued: temporary withholding of part of staff/teacher salary (April–August 2020), later cancelled with refund through SDTSB accounts; deferral of recovery of advances and loans for the same period; deferral of NPS contributions for five months; and a separate STSB account to deposit the deferred salary. Ration of bills/cheques in the treasury queue at the end of FY 2019-20 was specifically addressed. An expert committee was constituted to identify avoidable expenditure as the revenue-expenditure gap widened. Treasury operations moved largely online; pension life-mustering was deferred multiple times; pension distribution in early May 2020 was carried out with detailed safety SOPs. Quarantine days were treated as on-duty for daily-wage / contract staff and wages were sanctioned at 25–50% attendance basis for the continuing period. ASHA workers received an incentive; palliative-care nurses received a six-month incentive extension. KSFE 'Vidyasree' was the micro-savings scheme launched and later revised for online-learning device finance. The 11th Pension Revision adopted online consent submission and staggered release of arrears. PSU / autonomous-body staff salary contributions to the Government's COVID activities were sanctioned; and a one-month-pension contribution mechanism for service pensioners to the CMDRF was issued.

A total of 57 orders in this theme were issued and relevant are listed below.

Representative orders

Date	G.O. / Circular Number	Type	Subject
2020-03-26	G.O. (P) No. 33/2020/FIN	Order	The Payment of wages of contractual / casual / daily wage / outsourced staff during lock down period due to COVID 19 - approved
2020-04-04	Go (Ms) No.62/2o20/GAD	Order	GAD- covid-19- regulations to contain the covid-19 pandemic- regulations post

			lock down -expert committee to formulate the guidelines-orders issued
2020-04-04	No. 28/2020	Circular	COVID-19 - Losses in various sectors - Moratorium granted on loans
2020-04-07	G.O. (M.S) No. 64/2020/GAD	Order	GAD-Covid-19 general lock down-exemption categories-permission for cooperation department to engage staff required for distribution of social security pension and distribution of essential commodities- orders issued
2020-04-08	No.21/2020/Fin	Circular	Procedures for clearing bills/cheques included in the treasury queue at the end of financial year 2019-20
2020-04-16	G.O. (P) No. 42/2020/Fin	Order	Kerala Service Rule - Periodical Surrender of Earned Leave - Deferred - Order Issued
2020-04-20	G.O. (P) No. 44/2020/FIN	Order	Ad hoc Arrangement for Paperless bill for Salary Clime of 4/2020 by all Departments- Extension Approved
2020-04-23	G.O. (P) No. 46/2020/FIN	Circular	Order temporarily withholding part of the salary of staff and teachers to overcome the financial crisis caused by the COVID pandemic
2020-04-23	No. 1/12020-E-II(B)	Official Memorandum	Freezing of Dearness Allowance to Central Government Employees and Dearness Relief to Central Government Pensioners at Current Rates till July 2021
2020-04-27	P7-13617/2014/DUA Vol2	Circular	Pension Wing - National Pension Scheme - Regarding payment of NPS contributions for 5 months from April 2020
2020-04-27	No.E1-1380/2020/Try	Circular	Guidelines on opening STSB account to deposit the amount withheld from salary from 04/2020 to 08/2020
2020-04-27	No.E1-1209/2020/Try	Circular	Adhoc Arrangements for Paperless Bill for the salary Claim of 4/2020 - Extended

3.12 Public Distribution, Ration & Food Security

This category includes Government Orders, guidelines, circulars, advisories, and administrative directives related to public distribution systems, ration supply mechanisms, food security measures, and essential commodity management during the COVID-19 pandemic. The categorization reflects the critical importance of ensuring uninterrupted access to food and essential commodities during a large-scale public health emergency characterized by lockdowns, movement restrictions, economic disruption, and loss of livelihoods. During the pandemic, food security emerged as a major component of social protection and humanitarian

response, particularly for economically vulnerable populations, daily wage workers, migrant labourers, elderly individuals, persons under quarantine, and families affected by income loss due to prolonged restrictions.

The documents included under this category address issues such as uninterrupted functioning of ration shops, distribution of food grains through the Public Distribution System (PDS), special ration allocations, doorstep delivery mechanisms, food kit distribution, regulation of essential commodity supply chains, price control measures, and emergency food assistance programmes. The orders also include directives related to functioning of civil supplies departments during lockdowns, crowd management at ration shops, staggered distribution schedules, digital and token-based ration systems, hygiene and infection prevention measures at food distribution centres, and coordination with Local Self-Government Institutions and community volunteers for food distribution activities.

A major theme within this category is the role of food security as an essential public welfare intervention during the pandemic. The COVID-19 crisis demonstrated that containment measures such as lockdowns and movement restrictions could significantly affect access to food, employment, and household income, thereby increasing the risk of hunger and nutritional insecurity among vulnerable populations. Several directives therefore focused on maintaining continuity of food supply chains, preventing hoarding and black marketing, ensuring availability of essential commodities, and expanding welfare-based food assistance schemes to support affected communities. The integration of community kitchens, ration distribution systems, welfare schemes, and local governance mechanisms also reflected Kerala's decentralized and community-oriented approach to pandemic response.

Free ration distribution was extended to all ration-card holders and non-ration-card holders, with Rs. 350 crore allocated from the CMDRF. Separate orders covered migrant workers, Onam non-priority distribution (10 kg rice; 5 kg in critical containment zones; Rs. 126 crore sanctioned, 56,000 MT of rice lifted), and special arrangements for inmates of destitute homes, orphanages, child welfare homes, old-age homes and care centres. Portability was permitted for the COVID

grocery / 'palavyanjana' kit. Ration-card issuance for unregistered families was facilitated. Ration-shop working hours were rescheduled during the second wave. Supplyco prepared and distributed 'survival kits'. Free Onam kits were distributed to workers in closed plantations. Matsyafed net-making units and Vyasa stores were urgently re-opened, and milk supply to DCCs / CFLTCs was specifically directed.

A total of 40 orders in this theme were issued and relevant are listed below.

Representative orders

Date	G.O. / Circular Number	Type	Subject
2020-03-25	No. 4342357/D2/2020/F&CSD	Order	COVID-19 - Free ration - Regarding
2020-03-27	No (C.S)A.4/516/2020	Guidelines	Regarding implementation of directions for distribution of free ration - COVID-19
2020-03-31	G.O. (R.T) No. 1223/2020/RD	Order	Order issued allotting Rs. 350 crore from the Chief Minister's Distress Relief Fund for free distribution of food grain kits to all ration card holders and non-ration card holders in the State as part of COVID-19 relief activities
2020-03-31	No. 4357721/D2/2020/F&CSD	Order	COVID-19 - Regarding provision of food grains to migrant workers
2020-04-02	No.4337724/D1/2020/F&CSD	Circular	Regarding ensuring food availability for inmates of destitute homes, orphanages, child welfare homes, old-age homes and care centres in the State
2020-04-06	G.O. (R.T) No. 106/2020/F&CSD	Order	Distribution of food kits containing essential commodities to all families as part of addressing public hardship due to COVID-19
2020-04-06	CII & FACE	Guidelines	Guidance Checkpoints for Fruits and Vegetables Mandis with Measures for Protecting Health and Ensuring Availability of Fruits and Vegetables in Mandis when in operation
2020-04-07	G.O. (R.T) No. 108/2020/F&CSD	Order	COVID-19 - Direction on distribution of food grains and kits to inmates of destitute homes, welfare institutions and ashrams in the State
2020-04-08	G.O. (M.S) No. 68/2020/GAD	Order	General Administration Department - COVID 19 - General lock down - exemption -Permission for the staff of Irrigation Department in connection with work for supply of water - sanctioned
2020-04-08	No. E-4/2020-MPLADS (PtII)	Circular	Non-Operation of Member of Parliament Local Area Development Scheme (MPLADS) for two years (2020-21 & 2021-22) for managing the health and adverse impact of COVID-19 on the society.

2020-04-10	G.O. (R.T) No. 1319/2020/GAD	Order	Novel Corona Virus disease regulations to contain the Covid 19 pandemic operation of food processing units clarification orders issued
2020-04-13	No (C.S)A.10-516/2020	Guidelines	COVID-19 grocery kit distribution - Regarding allowing portability

3.13 Welfare, Pensions & Special Assistance

This category includes Government Orders, guidelines, circulars, welfare directives, and administrative measures related to social welfare programmes, pension distribution, financial assistance schemes, and special support mechanisms implemented during the COVID-19 pandemic. The categorization reflects the significant socioeconomic impact of the pandemic and the essential role of welfare governance in protecting vulnerable populations during prolonged public health emergencies. The COVID-19 crisis resulted not only in health-related challenges but also in widespread economic disruption, loss of livelihood, social vulnerability, and increased dependency on government support systems. Consequently, welfare-oriented interventions became a critical component of Kerala's pandemic response strategy.

The documents included under this category address issues such as social security pension distribution, financial relief packages, emergency welfare assistance, support for economically vulnerable families, benefits for elderly individuals, assistance for persons with disabilities, support for migrant workers, welfare measures for marginalized communities, ex gratia payments, and special assistance schemes for individuals affected directly or indirectly by the pandemic. The orders also include directives related to doorstep delivery of pensions, digital and contactless welfare disbursement systems, special financial support during lockdowns, community-based welfare delivery mechanisms, and coordination between welfare departments, local self-government institutions, and financial agencies to ensure uninterrupted service delivery during movement restrictions.

A major theme within this category is the strengthening of social protection systems during periods of uncertainty and economic instability. The pandemic highlighted the vulnerability of elderly persons, daily wage workers, unorganized sector labourers, persons living alone, chronically ill individuals, and socially

disadvantaged groups who were disproportionately affected by lockdowns and disruption of economic activity. Several welfare-related orders therefore focused on ensuring timely pension payments, expanding eligibility for assistance programmes, streamlining beneficiary identification systems, and minimizing barriers to access for vulnerable populations. The use of digital governance platforms, decentralized service delivery, and local-level support mechanisms also became important components of welfare administration during the pandemic.

Differently-abled beneficiaries received the full financial benefits of welfare schemes as special COVID assistance. BPL (PHH) and AAY families not receiving social security pensions received financial assistance, delivered later through cooperative banks/societies. Stranded expatriates received Rs. 5,000 each via NORKA Roots from the CMDRF; a follow-up Rs. 50 crore additional sanction expanded the package. Cashew workers received special assistance through a dedicated interest-free Special Treasury Savings Bank account at Kollam District Treasury. Traders received Welfare-Fund support during the lockdown. Senior citizens received attention via ICDS field workers. Haritha Karma Sena members were protected from dismissal and received PPE during waste-collection operations.

A total of 9 orders in this theme were issued and relevant are listed below.

Representative orders

Date	G.O. / Circular Number	Type	Subject
2020-03-18	No.08/2020	Circular	Coronavirus (COVID-19) - In the context of the outbreak - Directions issued to Labour Department officials to monitor the activities of private-sector and migrant workers in the State
2020-03-26	E.N.F 4113/2020	Circular	Procedures to be followed by establishment owners, factory owners and workers in the public/private sector and in the construction, plantation, cashew, fish processing and coir sectors in the State in the context of the Coronavirus (COVID-19) outbreak
2020-04-08	KSHO/8943/C/18	Circular	Implementation details of the 'CM's Helping Hand Loan Scheme (CMHLS)' announced by the Government of Kerala for resisting COVID-19
2020-04-08	KSHO/8943/C/18	Circular	Regarding issuance of implementation details of the 'CM's Helping Hand Loan Scheme (CMHLS)' announced by the Government of Kerala for resisting COVID-19

2020-04-09	G.O. (M.S) No. 70/2020/GAD	Order	GAD-Covid -L9 - general lock down - exemption categories-permission to function rubber plantation and factories involved in latex processing and production of rubber / surgical gloves
2020-04-29	Expert Report	Report	Study report on domestic violence faced by women and girls in Kerala during the Corona period and steps to be taken against it
2020-04-30	DCKLM/1827/2020 - DM2	Circular	COVID-19 Pravasi Welfare Centre - Regarding deployment of staff
2020-05-02	G.O. (R.T) No. 1411/2020/GAD	Order	Novel Corona Virus disease (COVID-19)- Interstate movement of migrant labourers, tourists, students and other persons stranded in Kerala and other States owing to national lock down- guidelines for infrastructure arrangements and procedures- orders
2020-05-11	G.O. (R.T) No. 1489/2020/GAD	Order	Novel Corona Virus disease (COVID-19)- interstate movement of migrant labourers, tourists, students and other persons stranded in Kerala and other States owing to national lock down- guidelines for infrastructure arrangements and procedures through different modes of transport- modified orders issued

3.14 Tax, Licences, Property Tax & Construction Permits

The categorization reflects the need to maintain continuity of revenue administration, regulatory governance, and essential economic activities while simultaneously adapting administrative procedures to the restrictions and operational challenges created by the pandemic. During COVID-19, lockdowns, movement restrictions, office closures, and economic slowdown significantly affected businesses, construction activities, trade operations, and the ability of individuals and institutions to comply with statutory requirements. As a result, governments introduced a range of temporary relaxations, procedural modifications, deadline extensions, and digital service mechanisms to reduce administrative burden and facilitate continuity of services.

The documents included under this category address issues such as extension of tax payment deadlines, deferment of penalties, online processing of licences and permits, renewal of trade licences, relaxation in compliance procedures, digital submission of applications, property tax payment systems, building permit

approvals, regulation of construction activities during lockdowns, and revised operational guidelines for local bodies and regulatory authorities. The orders also include directives concerning reopening of construction activities under safety protocols, labour management at construction sites, inspection procedures, crowd reduction measures in government offices, and use of online governance platforms for approval and certification processes.

A major theme within this category is the transition toward simplified and digital administrative systems during the pandemic. The restrictions imposed during COVID-19 accelerated the adoption of e-governance mechanisms for tax collection, licence renewal, permit issuance, and regulatory approvals, thereby reducing physical interaction and ensuring continuity of public services. Several directives also aimed to provide economic relief to individuals, businesses, contractors, and property owners by extending compliance timelines, reducing procedural delays, and minimizing disruptions to essential development and infrastructure activities. The continuation of construction and infrastructure projects under regulated safety conditions was also recognized as important for economic recovery and employment generation during later phases of the pandemic.

Property-tax payment without penalty, trade-licence renewal and entertainment-tax payment deadlines were extended repeatedly: from 30 April 2020 → 31 May 2020 → 30 June 2020 → 30 September 2020 → 30 November 2020 → 31 March 2021 → 31 December 2021 (the final extension during the second wave). Vacancy Remission applications were extended to June 2020. Construction permits whose validity expired during lockdown were automatically extended. Rent on LSGI/development-authority-owned buildings was eligible for proportionate concessions for the closed period; rent arrears were settled with penalty/interest waivers. MSME unit licence renewals were extended to 31 October 2020; contractor licence renewals were extended in line. Online registration of marriages was permitted until the amended Kerala Registration of Marriages Rules 2006 came into force. Entry-deed registration was streamlined and earlier 5-deeds-at-a-time concessions were withdrawn once normalcy resumed.

A total of 3 orders in this theme were issued and relevant are listed below.

Representative orders

Date	G.O. / Circular Number	Type	Subject
2020-05-07	G.O. (R.T) No. 836/2020/LSGD	Order	Order extending the deadline for renewal of licences for MSME units in the State to 31.10.2020
2020-05-07	G.O. (R.T) No. 402/2020/LSGD	Order	COVID-19 - Time for renewal of contractors' licences extended
2020-06-13	G.O. (R.T) No. 1131/2020/LSGD	Order	Order granting time till 05/07/2020 to pay rent without interest or penal interest for buildings owned by Thiruvananthapuram Development Authority, in the context of COVID-19

3.15 Sanitation, Waste Management & Environment

This category includes Government Orders, guidelines, circulars, advisories, and standard operating procedures related to sanitation, waste management, environmental hygiene, and public environmental health measures implemented during the COVID-19 pandemic. The categorization reflects the critical role of environmental sanitation and safe waste disposal in preventing disease transmission and maintaining public health during large-scale infectious disease outbreaks. The COVID-19 pandemic generated substantial challenges in relation to biomedical waste disposal, disinfection practices, public sanitation systems, environmental hygiene, and safe management of contaminated materials from healthcare institutions, quarantine centres, households, and public spaces.

The documents included under this category address issues such as biomedical waste management, disposal of personal protective equipment (PPE), sanitation and disinfection protocols, cleaning of public spaces, waste segregation systems, environmental hygiene measures in healthcare facilities and quarantine centres, management of COVID-related household waste, sewage and wastewater safety, and guidelines for local self-government institutions and sanitation workers. The orders also include directives concerning functioning of sanitation services during lockdowns, safety measures for waste handlers, supply of protective equipment for sanitation personnel, environmental monitoring, and coordination between health departments, pollution control authorities, local bodies, and waste management agencies.

A major theme within this category is the recognition of sanitation and environmental management as essential components of infection prevention and control (IPC). The pandemic highlighted the increased risk associated with improper disposal of contaminated materials, overcrowding, inadequate hygiene infrastructure, and interruptions in routine sanitation services. Several directives therefore focused on strengthening biomedical waste treatment systems, ensuring continuity of municipal sanitation services, promoting hand hygiene and environmental disinfection practices, and protecting frontline sanitation workers from occupational exposure. The management of increased volumes of healthcare waste generated during testing, treatment, vaccination, and quarantine activities also became an important operational challenge addressed through specialized protocols and regulatory oversight.

Pre-monsoon sanitation activities (annual programme) were aligned with COVID-19 prevention. Bio-medical waste and solid-waste collection followed integrated protocols. Sanitation workers received a Rs. 750 daily wage in light of the risk factor of their work. KAMCO's pedal-operated sanitisers were authorised for use across LSGD-controlled institutions, and SIDCO foot-operated sanitisers/dispensers were procurable by LSGIs as needed. Door-to-door waste collection by Haritha Karma Sena continued under specific safety measures for its members. Khadi Board was the procurement source mandated for masks across departments and educational institutions; quality 3-layer N95 masks were arranged for those unable to afford them. Use of handloom / Khadi textiles by departments was directed.

A total of 6 orders in this theme were issued and relevant are listed below.

Representative orders

Date	G.O. / Circular Number	Type	Subject
2020-02-05	No.46/D.C.1/2020/LSDG	Circular	Health Vigilance - Communicable Disease Prevention Drive 2020 - Waste-free surroundings for health safety - Guidelines
2020-03-26	No. DC1/71/2020/LSGD	Circular	Possibility of COVID-19 spread in the State - Preventive measures - Regarding environmental sanitation activities

2020-04-18	G.O. (R.T) No. 762/2020/LSGD	Order	Implementation of urban sanitation and pre-monsoon sanitation activities in coordination with COVID-19 prevention measures
2020-04-20	No.D.C.1/188/2020/LSGD	Circular	Regarding collection and treatment of biomedical and solid waste from various sources during COVID-19
2020-05-04	No.D.C.1/191/2020/LSGD	Circular	Pre-monsoon sanitation - Guidelines on epidemic prevention activities and matters related to drought and drinking water supply
2020-07-27	DDMA/01/2020/COVID/Circular	Guidelines	Second edition of Monsoon-Northeast Monsoon Preparedness and Disaster Response Guidelines published by KSDMA

3.16 Reopening of Establishments & Religious Places

This category includes Government Orders, guidelines, circulars, advisories, and standard operating procedures related to the phased reopening and regulated functioning of commercial establishments, institutions, public spaces, and religious places during the COVID-19 pandemic. The categorization reflects the transition from emergency containment and lockdown measures toward gradual restoration of economic, social, and community activities while maintaining public health safeguards. During different phases of the pandemic, governments were required to balance infection control measures with the need to resume livelihoods, economic activity, public services, and religious and social practices in a controlled and risk-managed manner.

The documents included under this category address issues such as phased reopening of shops, markets, malls, restaurants, hotels, offices, commercial institutions, public establishments, and places of worship under prescribed health and safety protocols. The orders also include directives concerning operating hours, crowd control measures, social distancing norms, mask mandates, sanitation and disinfection requirements, occupancy limitations, ventilation standards, registration systems, and monitoring mechanisms for establishments permitted to function during different stages of reopening. Special guidelines were also issued for religious institutions regarding conduct of prayers, rituals, festivals, pilgrimages, and

management of gatherings to minimize transmission risk while respecting religious practices and community sentiments.

A major theme within this category is the adoption of risk-based and SOP-driven governance during the later phases of the pandemic. Unlike the initial phase characterized by blanket restrictions and complete closures, reopening strategies gradually evolved toward calibrated regulation based on epidemiological indicators such as test positivity rates, case burden, vaccination coverage, and local transmission patterns. Several directives therefore emphasized shared responsibility between authorities, institutions, business owners, religious organizations, employees, and the public in ensuring compliance with infection prevention and control measures. The use of digital registration systems, online booking mechanisms, staggered attendance, and regulated entry systems also reflected the increasing integration of technology into public health management during reopening phases.

Reopening was tightly conditional on COVID-norm compliance. Travancore and Cochin Devaswom Board temples received specific reopening protocols. Foreign-liquor shops, bars and beer/wine parlours received conditional reopening orders subject to lockdown norms (issued at multiple points across 2020 and 2021). Driving schools and driving tests resumed under COVID norms. Government Guest Houses received conditional reopening. Fish-landing centres and fish markets not under Harbour Management Society resumed under LSGI-issued guidelines. Training institutions, rehabilitation centres and day-care centres under various State departments were included in a final consolidated reopening order in October 2021.

A total of 4 orders in this theme were issued and relevant are listed below.

Representative orders

Date	G.O. / Circular Number	Type	Subject
2020-06-06	M.3484/2020	Guidelines	Regarding allowing devotees entry to temples under the Cochin Devaswom Board
2020-10-05	G.O. (RT) No. 3005/2020/GAD	Order	GAD - Order granting permission to open and operate Government Guest Houses while observing COVID-19 prevention guidelines
2020-10-28	No./31/F2/2020/Health	Guidelines	Health Advisory on Sabarimala Pilgrimage in the context of COVID-19

2020-11-10	G.O. (R.T) No. 2105/2020/H&FWD	Order	Health & Family welfare Department - Covid 19 - Sabarimala Pilgrimage 2020-2021-Action plan by the Health Department - Approved - Orders issued.

3.17 Elections

The documents included under this category address issues such as conduct of election campaigns under COVID-19 protocols, crowd management during political meetings, nomination procedures, polling station safety measures, physical distancing norms, mandatory mask usage, sanitization arrangements, management of polling personnel, voter movement regulation, quarantine and isolation guidelines for voters and election staff, and infection prevention protocols during counting and result declaration processes. The orders also include directives concerning digital and virtual campaign mechanisms, restrictions on public gatherings, special arrangements for elderly persons and vulnerable populations, use of personal protective equipment (PPE) by polling staff, and coordination between election authorities, health departments, local self-government institutions, and law enforcement agencies.

A major theme within this category is the balancing of constitutional obligations with public health protection during emergency conditions. The pandemic required election management systems to adapt rapidly by integrating infection prevention and control measures into all stages of the electoral process. Several directives therefore focused on minimizing crowd density, decentralizing polling arrangements, extending polling hours, promoting contactless procedures, and implementing surveillance and monitoring systems to reduce transmission risk during election-related activities. The increasing use of digital communication platforms for campaigning and administrative coordination also reflected the broader shift toward technology-assisted governance during the pandemic.

The 2020 General Elections to local self-government institutions were held under a specific COVID-19 protocol. Final-electoral-roll publication was deferred to 1

October. Special postal-ballot procedures were issued for COVID-positive voters and voters in quarantine. Additional revision-of-electoral-roll directions were issued by the State Election Commission. The Police Department received expanded duties for enforcing containment-zone restrictions including those affecting polling.

A total of 10 orders in this theme were issued and relevant are listed below.

Representative orders

Date	G.O. / Circular Number	Type	Subject
2020-06-19	Notification	Order	Conduct of Elections (Amendment) Rules,2020
2020-08-11	No.324.6.EPS.OT.001.2020	Guidelines	Broad Guidelines for Conduct of General Elections/Bye-Elections During Covid-19
2020-08-19	No. B1-30139-2019-KSEC	Guidelines	State Election Commission - Regarding additional directions on revision of the electoral roll for the 2020 General Elections
2020-09-25	B1/30139/2019/SEC	Order	Kerala State Election Commission - Order extending to 1 October the date for publishing the final electoral roll for the 2020 General Elections to local bodies
2020-10-04	G.O. (R.T) No. 1815/2020/LSGD	Order	Local Self Government Department - Strategy to be adopted to handle COVID-19 pandemic during the time when the elected representatives will be out of action on account of election campaign, and further in case of delay in conducting the elections, from 2020 November 11 onwards - 3 member team constituted - Orders Issued.
2020-11-27	No./31/F2/2020/Health	Guidelines	Advisory on Covid-19 Screening and Testing of Officers, Staff and Security Personnel Involved in Election Duties
2021-04-27	No.119/EE4/2021/Elec	Guidelines	Election Department - General Election to Kerala Legislative Assembly,2021 - Counting on 02.05.2021 - Implementation of Covid Protocol Guidelines
2021-04-27	No.464/INST/2021/EPS	Guidelines	General Election to Legislative Assemblies of West Bengal, Assam, Tamil Nadu, Kerala and Puducherry , 2021 - Prohibition of Victory Procession
2021-04-27	119/EE4/2021/Elec	Guidelines	Election Department- General Election to Kerala Legislative Assembly, 2021- Counting on 02-05-2021- implementation of Covid Protocol Guidelines-regarding

2021-04-28	464/INST/2021/EPS	Guidelines	General Election to Legislative Assemblies of West Bengal, Assam, Tamil Nadu, Kerala and Puducherry, 2021 and bye election in various states - Broad Guidelines for Covid-Safety During Counting of votes on 2nd May, 2021- Regarding.

3.18 Monsoon Preparedness and Disaster Management

A major theme within this category is the concept of multi-hazard preparedness and integrated emergency governance. The COVID-19 pandemic demonstrated that public health emergencies can occur simultaneously with natural disasters, creating compounded risks for affected populations and administrative systems. Several directives therefore focused on adapting standard disaster management practices to minimize transmission risk, including physical distancing in relief camps, isolation arrangements for symptomatic individuals, use of personal protective equipment by rescue personnel, safe transportation protocols, and coordination between health departments and disaster management authorities. The pandemic also highlighted the importance of maintaining uninterrupted emergency response capacity despite restrictions on movement, workforce limitations, and increased pressure on healthcare systems.

The Kerala State Disaster Management Authority (KSDMA) issued the second edition of the Monsoon-Northeast Monsoon preparedness and disaster-response guideline (Orange Book). For coastal districts, sea fishing was banned in Kollam district at peak risk; coastal-zone containment declarations imposed restrictions on fishing and fish sale; inland fishing/fish-farming guidelines were issued. Branches of dangerously placed trees were authorised for trimming under Section 30(2)(v) of the Disaster Management Act, 2005.

A total of 7 orders in this theme were issued and relevant are listed below.

Representative orders

Date	G.O. / Circular Number	Type	Subject
2020-04-24	G.O. (R.T) No. 219/2020/F&P	Order	Guidelines on inland fishing / fish farming during COVID-19
2020-05-20	G.O. (R.T) No. 1193/2020/HOME	Order	Newly admitted prisoners to be brought to prison after testing for COVID by Police, Excise, Forest Departments - Guidelines Issued
2020-05-28	Guide	Reference Guide	Orange Book for Disaster Management
2020-07-10	DCKLM/1827/2020 - DM2	Order	Order banning sea fishing in Kollam district
2020-07-14	No.31/f-2/2020/H&FW	Guidelines	Sentinel Surveillance in Coastal, Slum & Tribal Areas
2020-08-03	T5-40634/2020/PHQ	Guidelines	IN THE WAKE OF THE INCREASING NUMBER OF POSITIVE CASES PRIMARILY DUE TO CONTACT, IT HAS BEEN DECIDED, AT THE HIGHEST LEVEL, THAT THE POLICE WILL PLAY AN IMPORTANT ROLE IN BRINGING DOWN THE NUMBER OF CASES IN THE WHOLE STATE.
2021-09-25	G.O.(Ms)No.3/2021/DMD	Order	Disaster Management Department- Amendment in revised list of Items and Norms of assistance under State Disaster Response Fund-Sanctioned-Orders Issued.

3.19 Communications, Documentation & War Rooms

The documents included under this category address issues such as establishment and functioning of COVID war rooms and control rooms, public information dissemination systems, media communication protocols, daily reporting mechanisms, online dashboards, helplines, documentation standards, case reporting formats, data management systems, emergency communication channels, coordination platforms, and digital monitoring tools. The orders also include directives concerning communication between health institutions and administrative authorities, public awareness campaigns, dissemination of advisories and containment guidelines, management of misinformation, reporting of hospital bed availability, oxygen supply monitoring, telecommunication systems for field surveillance, and grievance redressal mechanisms for the public during different phases of the pandemic.

A major theme within this category is the integration of communication systems and data-driven coordination into pandemic governance. The COVID-19 response demonstrated that effective management of a large-scale public health emergency depends heavily on timely information flow, centralized coordination, accurate documentation, and transparent public communication. Several directives therefore focused on strengthening digital reporting systems, establishing district and state-level war rooms, integrating surveillance and healthcare data, enabling real-time monitoring of resource utilization, and improving coordination between health departments, local self-government institutions, disaster management authorities, and field-level response teams. The increasing use of online portals, dashboards, helplines, telecommunication systems, and digital documentation platforms also reflected the rapid expansion of technology-enabled governance during the pandemic.

A single public platform consolidated information from various government departments and agencies relating to COVID-19 containment. The 'Subhiksha Keralam' food-production drive guidelines were integrated with the Annual Plan and the Kudumbashree agricultural programme. Twenty-four-hour Help Desks at LSGI level operated as part of the COVID War Rooms during the second wave. Documentation of GP-led COVID prevention activities was directed.

A total of 5 orders in this theme were issued and relevant are listed below.

Representative orders

Date	G.O. / Circular Number	Type	Subject
2020-04-15	No.40-3/2020-DM-I(A)	Order	Updated consolidated guidelines on measures to be taken by GoI Ministries/Departments and State/UT governments and authorities to control COVID-19 in the country
2020-05-08	G.O (Rt) No.1469/2020/GAD	Order	GAD- Novel Corona Virus disease (COVID-19)- war room duty – appointment of officers – orders issued
2020-05-18	G.O. (M.S) No. 14/2020/P&EA	Order	COVID-19 - Subhiksha Keralam: Mass drive for increasing food production - Guideline
2020-05-20	G.O. (R.T) No. 928/2020/LSGD	Order	Guidelines on integrating the 'Subhiksha Keralam' scheme into the Annual Plan
2020-05-29	G.O. (R.T) No. 1009/2020/LSGD	Order	Subhiksha Keralam - Amendments and additions to the subsidy guideline

3.20 Miscellaneous

This category captures GOs and circulars not falling cleanly into the major themes: case-by-case sanctions, technical clarifications, niche departmental guidance and specialised personnel orders. Refer to the date-sorted index for the complete list of orders within this group.

A total of 41 orders in this theme were issued and relevant are listed below.

Representative orders

Date	G.O. / Circular Number	Type	Subject
2020-04-06	RCC/DIR/PR004/2020	Press Note	Medicine Distribution
2020-04-08	G.O. (R.T) No. 156/2020/AYUSH	Order	AYUSH Department – COVID-19- Action Plan outlining the Ayurveda Strategies for prevention, mitigation and rehabilitation of COVID-19 patients in Kerala – approved orders-issued
2020-04-18	L.R.E1-231/2020	Circular	COVID-19 - Regarding opening and functioning of Revenue offices
2020-04-19	Guideline	Guidelines	New guideline for COVID-19 disease control
2020-04-21	G.O. (P) No. 56/2020/TD	Order	In exercise of the powers conferred by sections 24 and 29 of the Abkari Act, 1 of 1077, the Government of Kerala hereby make the following rules further to amend the Kerala Foreign Liquor Rules issued under notification No. S.R4-1859/52/RD dated 17th January, 1953 and published in the Travancore-Cochin Gazette Extraordinary No. 2 dated 17th January, 1953
2020-04-22	No.2145/P2/SSK	Circular	2020-21 - Direction on distribution of masks to children at the start of the academic year, as part of preventing the spread of Coronavirus (COVID-19)
2020-04-23	G.O. (P) No. 35/2020/Co-op	Order	Under sub section (1) of section 28 of the Kerala Co-operative Societies Act, 1969(21 of 1969), the general body of a society shall constitute a committee for a period of five years in accordance with the bylaws and entrust the management of the affairs of the society
2020-04-27	G.O. (R.T) No. 51/2020/ITD	Order	Electronic and Information technology department - Resurgent measures to tide over economic crisis faced by IT/TeS companies / Establishments in Government IT Parks due to the outbreak of COVID-19 Pandemic

2020-04-30	No. 6936/Leg.A1/2020/Law.	Ordinance	THE KERALA DISASTER AND PUBLIC HEALTH EMERGENCY (SPECIAL PROVISIONS) ORDINANCE, 2020
2020-04-30	No. 6862/Leg.I2/2020/Law.	Order	further to amend the Payment of Salaries and Allowances Act, 1951. Preamble.—WHEREAS, Kerala is grappling with Corona Virus (COVID-19) pandemic which has severe health and economic ramifications for the people of the State; AND WHEREAS, the Corona Virus (COVID-19) pandemic has shown the importance of expeditious relief and assistance and therefore, it is necessary to take certain emergency measures to prevent and contain the spread of said pandemic;AND WHEREAS, in order to manage and control such situation, it has become necessary to raise resources by reduction of salaries and allowances of Ministers, Speaker, Deputy Speaker, Leader of the Opposition, Chief Whip and the Members of the Kerala Legislative Assembly;This Ordinance may be called the Payment of Salaries and Allowances (Amendment) Ordinance, 2020.
2020-05-04	No.R-10/2020(SS)	Official Memorandum	Extension of general lock down - Functioning of Courts
2020-05-10	Press Release	Report	Gradual Resumption of Select Passenger Services by Indian Railway

4.Guidelines and orders related to other communicable diseases of public health concern in Kerala

The Kerala public health guidelines establish a systematic, multi-pronged framework for managing diverse infectious threats, ranging from common seasonal outbreaks to rare, highly lethal pathogens. These documents provide a blueprint for future pandemic preparedness by integrating clinical management, environmental surveillance, and robust administrative structures.

4.1 High-Fatality Zoonotic Pathogens: Nipah and Avian Influenza

Strategies for these pathogens focus on immediate containment due to their high mortality rates and potential for human-to-human transmission.

Nipah Virus (NiV):

Surveillance & Preparedness: The state utilizes Outbreak Monitoring Units (OMU) and "No Nipah" campaigns to educate the public and strengthen hospital infection control.

Clinical Interventions: Management includes strict triaging and isolation in dedicated facilities. Therapeutic options include Ribavirin, the m102.4 monoclonal antibody (on compassionate grounds), and more recently, Remdesivir or Favipiravir for both treatment and post-exposure prophylaxis (PEP).

Mock Drills: Elaborate functional exercises using "patient-actors" assess the readiness of health machinery to safely identify, isolate, and transport suspected cases.

Highly Pathogenic Avian Influenza (H5N1):

Interventions: Focuses on protecting high-risk groups like poultry farmers through PPE (N-95 masks, goggles, coveralls) and mandatory 10-day home quarantine for exposed individuals.

Treatment: Early initiation of Oseltamivir (within 48 hours) is critical to reducing severity.

4.2 Neurological & Rare Infections: PAM and IAE

These guidelines address infections that are often misdiagnosed as common bacterial meningitis or encephalitis but require specialized interventions.

Primary Amoebic Meningoencephalitis (PAM):

One Health Strategy: Since *Naegleria fowleri* is linked to warming water temperatures, the strategy includes environmental surveillance of stagnant water bodies and strict chlorination protocols for swimming pools.

Rapid Diagnosis: The "therapeutic window" is small; clinicians are urged to perform CSF wet mounts to look for motile trophozoites in all suspected meningitis cases not responding to standard antibiotics.

Medical "Cocktail": Treatment involves an aggressive multi-drug regimen of Amphotericin B, Miltefosine, Rifampin, Fluconazole, and Azithromycin.

Influenza Associated Encephalitis (IAE):

Interventions: Strategies address the "cytokine storm" hypothesis through early administration of immunomodulators (steroid pulse therapy or IVIG) alongside double-dose Oseltamivir.

4.3 Vector-Borne & Environmental Risks: Dengue, Zika, and Leptospirosis

These guidelines emphasize risk stratification and the management of specific complications.

Dengue:

Fluid Management: The cornerstone is a highly specific, titrated fluid resuscitation algorithm designed to match the rate of plasma leak without causing fluid overload.

Referral Protocol: To prevent overcrowding at tertiary centres, only patients with evidence of capillary leakage or Expanded Dengue Syndrome (myocarditis, ARDS, encephalitis) are referred.

Zika:

Vulnerable Populations: The primary focus is on pregnancy outcomes. Guidelines mandate serial ultrasounds (Category 1-3) to detect microcephaly and provide specific protocols for couples undergoing Assisted Reproductive Technologies.

Leptospirosis:

Post-Flood Prophylaxis: A risk-based categorization (Category 1-3) determines the dosage of Doxycycline prophylaxis for individuals exposed to floodwaters.

Critical Care: Guidelines prioritize early detection of Acute Kidney Injury (AKI) and favor peritoneal dialysis in remote areas where advanced hemodialysis may be unavailable.

4.4 Global Outbreaks & Co-circulation: Mpox and ILI-SARI

Strategies here focus on distinguishing between co-circulating viruses and managing new viral clades.

Mpox:

Clade-Specific Isolation: Clade 1b (linked to sustained human-human transmission) requires hospital isolation and repeat PCR testing every four days, whereas Clade 11b may be managed at home if stable.

Symptom Management: Includes protection of compromised skin with antiseptics and monitoring for ocular complications.

ILI-SARI (Influenza/COVID-19):

Integrated Testing: Because symptoms overlap, the strategy requires simultaneous molecular testing (PCR) for both SARS-CoV-2 and Influenza for all hospitalized respiratory cases.

The collective guidelines offer several cross-cutting pillars for future readiness:

Institutional Medical Boards: Decisions on experimental or high-risk treatments (like monoclonal antibodies or immunomodulators) are made by multi-disciplinary boards rather than individuals.

One Health Approach: Integrating human, animal (poultry/bats), and environmental (water quality) surveillance to detect spillover events early.

Risk Stratification (ABC Approach): Fusing guidelines for co-circulating diseases (e.g., COVID and Flu) into a single triage system to optimize resource allocation.

Standardized SOPs for Logistics: Detailed protocols for triple-layer sample packaging, PPE donning/doffing, and biomedical waste disposal ensure frontline worker safety.

Behavioral Change Communication: Targeted IEC materials for high-risk occupational groups (toddy collectors, fruit vendors, etc.) to prevent initial zoonotic transmission.

Representative orders

Date	G.O. / Circular Number	Type	Subject
05-09-2021	1/NIPAH	Circular	Kozhikode Nipah Management Plan: Outlines the administrative response structure, including the Core Committee, \$24/7\$ control rooms, surveillance teams, and inter-sectoral "One Health" coordination.
05-09-2021	2/NIPAH/H&FWD	Circular	Amended Nipah Treatment Protocol: Provides immediate clinical updates during the 2021 outbreak, including isolation setups and the use of Remdesivir/Favipiravir on compassionate grounds.
09-10-2021	1/F2/483/2021-HEALTH	Circular	Zika Virus Disease Guidelines: Covers vector and non-vector transmission, neurological complications (GBS), and pregnancy management, including antenatal ultrasound protocols to detect fetal microcephaly.
25-08-2022	G.O.(Rt) No.2108/2022/H&FWD	G.O.	Leptospirosis Treatment Guidelines: Details clinical management at all healthcare levels, categorised post-flood Doxycycline prophylaxis, and critical care for AKI and ARDS.
23-06-2023	G.O.(Rt)No.1489/2023/H&FWD	G.O.	ILI & SARI Guidelines: Establishes a combined ABC approach for the co-circulation of SARS-CoV-2 and Influenza, detailing testing (RAT/PCR) and empiric Oseltamivir treatment.
10-07-2023	G.O.(Rt)No.1653/2023/H&FWD	G.O.	IAE Management Guidelines: Technical guidance for managing Influenza Associated Encephalitis, focusing on the "cytokine storm" hypothesis and the use of immunomodulators like steroid pulse therapy.
10-07-2023	G.O.(Rt)No.1654/2023/H&FWD	G.O.	Dengue Treatment and Referral Guidelines: Provides a framework for fluid resuscitation algorithms, management of Expanded Dengue Syndrome, and risk-stratification-based referral to tertiary centres.
16-09-2023	G.O.(Rt)No.2363/2023/H&FWD	G.O.	Revised Nipah Treatment Guidelines: Updates 2019 protocols following new outbreaks, detailing antiviral dosing (Remdesivir/Favipiravir), management of encephalitis, and updated discharge criteria.

15-06-2024	G.O.(Rt) No.1451/2024/H&FWD	G.O.
20-07-2024	G.O.(Rt) No.1760/2024/H&FWD	G.O.
21-10-2024	G.O.(Rt) No.2496/2024/H&FWD	G.O.
02-11-2024	G.O.(Rt) No.2617/2024/H&FWD	G.O.
05-07-2025	G.O.(Rt) No.1866/2025/H&FWD	G.O.
22-09-2025	DHS/2406/2023-PH5	Proceeding
N/A	Booklet / Manual	Manual

Technical Guidelines for Avian

Influenza (H5N1): Contains SOPs for prevention, monitoring, and public health investigations, including PPE recommendations for farmers and Oseltamivir treatment.

Primary Amoebic Meningoencephalitis (PAM) Guidelines: Focuses on *Naegleria fowleri*, emphasizing rapid diagnosis via CSF wet mounts and an aggressive five-drug antimicrobial cocktail.

Revised Mpox (Monkeypox)

Guidelines: Outlines Clade-specific isolation (hospital for Clade Ib; home for IIb), diagnostic PCR procedures, and supportive care for skin lesions.

Amoebic Meningoencephalitis Action Plan: A multi-pronged "One Health" plan for environmental surveillance of water bodies, hotspot mapping, and enhancing molecular diagnostic capacity.

Nipah Prophylaxis and Quarantine

Guidelines: Establishes risk-based categories (Highest/High/Low) for primary contacts and provides protocols for Post-Exposure Prophylaxis (PEP) using Remdesivir or Favipiravir.

Amoebic Control in Swimming Pools: Mandatory daily chlorination (1-3 ppm residual) for pools and water theme parks, enforced under the Kerala Public Health Act 2023 to prevent PAM.

Comprehensive Nipah Outbreak

Manual: A central foundational document detailing epidemiology, triple-layer sample packaging, "No Nipah" campaign strategies, and detailed functional mock drill exercises.

5. Conclusion

The COVID-19 pandemic constituted one of the most significant public health and administrative challenges faced in recent history. The Government Orders, guidelines, circulars, advisories, and standard operating procedures compiled in this document collectively represent the evolving response of the Government of Kerala to an unprecedented and rapidly changing emergency situation. These documents illustrate not only the public health measures adopted to control disease transmission, but also the broader administrative, social, economic, welfare, educational, environmental, and governance-related interventions required to sustain society during a prolonged crisis.

The compilation demonstrates how pandemic governance extended beyond the health sector and required coordinated action across multiple departments and systems, including disaster management, local self-governance, finance, education, food security, sanitation, transportation, digital governance, welfare administration, and law enforcement. The progression of orders from early containment and emergency restrictions to phased reopening, vaccination governance, and adaptive long-term management reflects the dynamic nature of policy-making under conditions of uncertainty. It also highlights the importance of evidence-based decision-making, decentralized governance, interdepartmental coordination, community participation, and digital transformation in responding effectively to large-scale public health emergencies.

One of the major strengths of this compilation is its value as an institutional memory and preparedness resource for future emergencies. Emerging infectious diseases, zoonotic outbreaks, antimicrobial resistance, and unknown pathogens remain continuing global threats. While future pandemics may differ in severity, transmission dynamics, and societal impact, many of the administrative principles, operational mechanisms, and public health strategies documented during COVID-19 remain relevant and adaptable. The experiences captured in these orders provide practical insights into surveillance systems, quarantine management, health system strengthening, vaccination logistics, welfare delivery, continuity of governance, emergency communication, and multisectoral coordination during crises.

This document therefore serves not merely as a historical archive of notifications issued during the COVID-19 pandemic, but as a comprehensive reference framework for future pandemic preparedness, emergency governance, and disaster management planning. It may support policymakers, public health professionals, administrators, researchers, disaster management authorities, educators, and institutions in reviewing operational experiences, identifying best practices, evaluating policy responses, and developing resilient systems for future emergencies. By preserving these lessons in a structured and accessible form, the compilation contributes to strengthening institutional preparedness, evidence-informed governance, and public health resilience in Kerala and beyond.

This document has been prepared as a working compendium for orientation, training and rapid reference; it is not a substitute for the original Government Orders. For any operational decision, the actual order using the G.O. / Circular Number listed in the tables may be referred to.

Annexure-1

Kerala Government orders and guidelines related to -
COVID-19 pandemic response Management.

Kerala Government Orders - COVID-19 Management

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (R.T) No. 717/2021/DMD	Order	29-10-2021	Disaster Management	Disaster Management - സംസ്ഥാനത്തെ വിവിധ വകുപ്പുകൾക്ക് കീഴിലുള്ള പരിശീലന സ്ഥാപനങ്ങൾ നീഹാബിലിറ്റേഷൻ സെന്ററുകൾ പകൽ പരിപാലന കേന്ദ്രങ്ങൾ തുടങ്ങിയവ തുറന്ന് 4പവർത്തിക്കുന്നതിന് മാർഗനിർദ്ദേശങ്ങൾ ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O.(Rt)No.2110/2021/H&FWD	Order	29-09-2021	Health and Family welfare	Health and Family Welfare Department - Issuance of Covid19 Death declaration document - New guidelines of Min of H&FW Govt of IndiaAppeal provision - Issuance of COVID death certification - Orders issued	Download PDF
G.O. (R.T) No. 662/2021/DMD	Order	28-09-2021	Disaster Management	Disaster Management - കൊവിഡ് 19 സർക്കാർ ,അർദ്ധ സർക്കാർ , പോതുമെഖലാ സ്വയംഭരണ സ്ഥാപനങ്ങളിലെ ജീവനക്കാരുടെ ക്വാറന്റൻ കാലത്തെ സ്പെഷ്യൽ ക്യാഷുൽ ലീവ് അനുവദിച്ച് ഉത്തരവ് ദേശേശി വരുത്തി ഉത്തരവാകുന്നു	Download PDF
G.O.(Ms)No.3/2021/DMD	Order	25-09-2021	Disaster Management	Disaster Management Department- Amendment in revised list of Items and Norms of assistance under State Disaster Response Fund-Sanctioned-Orders Issued.	Download PDF
G.O.(Rt)No.659/2021/DMD	Order	25-09-2021	Disaster Management	Disaster Management Department- restrictions imposed in the state as a part of COVID-19 containment activities - modified guidelines for restrictions - orders issued	Download PDF
G.O. (R.T) No. 1811/2021/LSGD	Order	21-09-2021	LSGD	LSGD കൊവിഡ് 19 വ്യാപന സാഹചര്യം പരിഗണിച്ച് 2006 ലെ കേരള വിവാഹങ്ങൾ രജിസ്റ്റർ ചെയ്ത ചട്ടങ്ങളുടെ ദേശേശി നിലവിൽ വരുന്ന തിയതി വരെ വിവാഹം ഓൺലൈനായി രജിസ്റ്റർ ചെയ്യുന്നതിന് അനുമതി നൽകി പുറപ്പെടുവിച്ച ഉത്തരവ് ദേശേശി ചെയ്ത് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 1228/2021/HED	Order	17-09-2021	Higher Education	കൊവിഡ് 19 മായി ബന്ധപ്പെട്ട നിയന്ത്രണങ്ങളിൽ ഇളവുകൾ അനുവദിച്ചിട്ടുള്ള സാഹചര്യത്തിൽ സംസ്ഥാനത്തെ 64പാഠശാലകളിൽ കൊളേജുകൾ ഉൾപ്പെടെയുള്ള എല്ലാ ഉന്നത വിദ്യാഭ്യാസ സ്ഥാപനങ്ങളും 04-10-2021 മുതൽ തുറന്ന് 4പവർത്തിക്കുന്നതിനുള്ള അനുമതി നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 634/2021/DMD	Order	15-09-2021	Disaster Management	കൊവിഡ് 19 സർക്കാർ അർദ്ധസർക്കാർ പോതുമെഖലാ സ്വയംഭരണ സ്ഥാപനങ്ങളിലെ ജീവനക്കാരുടെ ക്വാറന്റൻ കാലത്തെ സ്പെഷ്യൽ ക്യാഷുൽ ലീവ് അനുവദിച്ച് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O.(Rt)No.619/2021/ DMD	Order	14-09-2021	Disaster Management	Disaster Management Department - Relaxations to the restrictions imposed in the State due to COVID-19 pandemic - Saturdays as working days - orders issued.	Download PDF
G.O. (R.T) No. 3426/2021/GAD	Order	14-09-2021	GAD	കൊവിഡ് 19 മായി ബന്ധപ്പെട്ട നിയന്ത്രണങ്ങളിൽ ഇളവുകൾ അനുവദിച്ചിട്ടുള്ള സാഹചര്യത്തിൽ സർക്കാർ ഓഫീസുകളിൽ തിരിച്ചറിയൽ കാർഡ് ഉപയോഗിച്ചുകൊണ്ടുള്ള പബ്ലിക് സംവിധാനം പുനരാരംഭിച്ചുകൊണ്ട് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.t) No. 605/2021/ DMD	Order	07-09-2021	Disaster Management	Restrictions imposed in the state as a part of COVID 19 Containment activities-modified guidelines for restrictions - orders-issued	Download PDF
G.O. (R.T) No. 1690/2021/LSGD	Order	06-09-2021	LSGD	കൊവിഡ് രണ്ടാം തരംഗം തുടരുന്ന സാഹചര്യത്തിൽ തദ്ദേശ സ്വയംഭരണ സ്ഥാപനങ്ങളിൽ വസ്തു നികുതി പിഴ കൂടാതെ അടയ്ക്കുന്നതിനുള്ള അവസാന തീയതി 31 -12 -2021 വരെ നീട്ടി നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 1683/2021/LSGD	Order	06-09-2021	LSGD	കൊവിഡ് രണ്ടാം തരംഗം തുടരുന്ന സാഹചര്യത്തിൽ തദ്ദേശ സ്വയംഭരണ സ്ഥാപനങ്ങളിൽ 2021 -22 വർഷത്തെ വ്യപാര വ്യവസായ സ്ഥാപനങ്ങളുടെ IELസൻസ് പിഴ കൂടാതെ പുതുക്കുന്നതിന്റെ കാലാവധി 31 -12 -2021 വരെ നീട്ടി നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
No.505/DC.1/19/LSGD	Circular	05-09-2021	LSGD	LSGD അയൽപക്ക സമിതികൾ രൂപീകരിച്ചുകൊണ്ടു കൊവിഡ് 4പതിരായ 4പവർത്തനങ്ങൾ ശക്തിപ്പെടുത്തുന്നതിന് മാർഗനിർദ്ദേശങ്ങൾ പുറപ്പെടുവിക്കുന്നത് സംബന്ധിച്ച്	Download PDF
G.O. (R.T) No. 591/2021/DMD	Order	03-09-2021	Disaster Management	Disaster Management Department- restrictions imposed in the state as a part of COVID-19 containment activities-violation of quarantine and isolation norms-orders issued	Download PDF
No.G3/228/2021/GED	Order	03-09-2021	General Education	General Education - അധ്യാപകരെ കോഓറണ ഡ്യൂട്ടിയിൽ നിന്നും ഒഴിവാക്കുന്നത് സംബന്ധിച്ച്	Download PDF
No.71/2021/FIN	Circular	03-09-2021	Finance	Deferred സാലറി തിരികെ നൽകുമ്പോൾ എൻ പി എസ് വിഹിതം കുറവ് ചെയ്യുന്നത് 01-09-2021 ലെ ഗസറ്റ് വിജ്ഞാപനത്തിന്റെ അടിസ്ഥാനത്തിലുള്ള തുടർ നടപടികൾ സംബന്ധിച്ച മാർഗനിർദ്ദേശങ്ങൾ പുറപ്പെടുവിക്കുന്നു	Download PDF
8/2/2017-VS(MCCD)	Circular	03-09-2021	Home	guideline to provide a copy of Medical Certificate of Cause of Death (MCCD) to the next of kin deceased in compliance to the Hon'ble Supreme Court Judgement dated 30th June 2021	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
NO 6067/D/2021/KSHO	Circular	01-09-2021	Kudumbasree	കുടുംബശ്രീ നോർക്ക വട്ടമായി സംയോജിച്ച് 4പവാസി ഭാരതോ പദ്ധതി PERAL നടപ്പിലാക്കുന്നത് സംബന്ധിച്ച്	Download PDF
G.O. (R.T) No. 585/2021/DMD	Order	28-08-2021	Disaster Management	രത്ന നിവാരണ വകുപ്പ് കോവിഡ് 19 നിർവ്യാപന 4പവർത്തനങ്ങൾക്ക് അധിക മാർഗനിർദ്ദേശങ്ങൾ പുറപ്പെടുവിക്കുന്നു	Download PDF
NO:41/31/F2/2020/Health	Guidelines	28-08-2021	Health and Family welfare	COVID 19 Testing Strategy for KERALA State	Download PDF
G.O. (R.T) No. 504/2021/TD	Order	27-08-2021	Tax	നികുതി വകുപ്പ് കോവിഡ് മാനദണ്ഡങ്ങൾ പാലിച്ചുകൊണ്ട് 5 ആധാരങ്ങൾ വീതം രജിസ്റ്റർ ചെയ്യുന്നതിനുള്ള അനുമതി നൽകിക്കൊണ്ട് പുറപ്പെടുവിച്ച സർക്കാർ ഉത്തരവ് പിൻവലിച്ചു ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O.(Rt)No.584/2021/DMD	Order	27-08-2021	Disaster Management	Disaster Management Department - COVID-19 containment activities - lockdown on Sundays - orders issued.	Download PDF
G.O.(Rt)No.1803/2021/H&FWD	Order	25-08-2021	Health and Family welfare	Health & Family Welfare Department - Kerala COVID-19 (SARS CoV2 IgG) SEROPREVALENCE Study - Sanction accorded - Orders issued	Download PDF
Circular No 35/2021	Circular	16-08-2021	Department of Cooperation	സഹകരണ വകുപ്പ് കോവിഡ് 19 വ്യാപനം സാമ്പത്തിക പാക്കേജ് - സാമൂഹ്യസുരക്ഷ പെൻഷനുകൾ ലഭിക്കാത്ത ഓരോ BPL (PHH), AAY കുടുംബത്തിനും സാമ്പത്തിക സഹായം സഹകരണ ബാങ്കുകൾ സംഘങ്ങൾ വഴി ഗുണഭോക്താക്കൾക്ക് വീടുകളിൽ എത്തിച്ചുകൊടുക്കുന്ന പദ്ധതി നിർദ്ദേശങ്ങൾ പുറപ്പെടുവിക്കുന്നു	Download PDF
No.DMA2/767/2021-DMD	Circular	12-08-2021	Disaster Management	DMD-COVID 19 Guidelines are issued under Section 18(2) (d) of Disaster Management Act,2005- Reg	Download PDF
No. 88/Pol.5/2021/GAD	Circular	10-08-2021	GAD	: National Day Celebrations- Independence Day 2021- Adherence to the Guidelines- reg.	Download PDF
G.O.(Rt)No.1715/2021/H&FWD	Order	10-08-2021	Health and Family welfare	Health and Family Welfare Department - State guidelines regarding COVID vaccination - Sanctioned - Orders issued	Download PDF
G.O.(Rt)No.575/2021/DMD	Order	10-08-2021	Disaster Management	Disaster Management Department - Restrictions imposed in the State as part of COVID-19 containment activities - Further orders issued	Download PDF
G.O.(Rt)No.1714/2021/H&FWD	Order	10-08-2021	Health and Family welfare	Health & Family Welfare Department - COVID 19 - Permission to Kerala Medical Services Corporation Ltd, to procure 20 lakh doses of Covishield Vaccine from Serum Institute of India as Aggregator to distribute to private hospitals at cost - sanction accorded - Orders issued	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O.(Rt)No.1715/2021/ H&FWD	Order	10-08-2021	Health and Family welfare	Health and Family Welfare Department - State guidelines regarding COVID vaccination - Sanctioned - Orders issued.	Download PDF
G.O. (M.S) No. 44/2021/ TD	Order	10-08-2021	Tax	നികുതി വകുപ്പ് കേരള ബ്ലോക്ക് ഫിനാൻഷ്യൽ എൻറർപ്രൈസസ് ലിമിറ്റേഡ് 19 മഹാമാരി കാരണം പൊതുവിദ്യേഭാസം സാധ്യമാകാത്ത സാഹചര്യത്തിൽ വിദ്യാർത്ഥി / വിദ്യാർത്ഥിനികൾക്ക് ഓൺലൈൻ പഠന സൗകര്യം ഒരുക്കുന്നതിനായി ആരംഭിച്ച സൂക്ഷ്മ സമ്പാദ്യ പദ്ധതിയായ കെ എസ് എഫ് ഇ വിദ്യാർത്ഥി പരിഷ്കരിച്ച ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O.(Rt)No.571/2021/ DMD	Order	07-08-2021	Disaster Management	Disaster Management Department-exemption on the restrictions imposed in the state as a part of COVID-19 containment activities-orders issued	Download PDF
Circular No 29/2021	Circular	06-08-2021	Department of Cooperation	സഹകരണ വകുപ്പ് കോവിഡ് 19 സഹകരണ ബാങ്കുകൾ സംഘങ്ങൾ 4പവർത്തി ദിവസം സംബന്ധിച്ച	Download PDF
Guideline	Guidelines	05-08-2021	Health and Family welfare	Guideline	Download PDF
G.O. (R.T) No. 1011/2021/HED	Order	05-08-2021	Higher Education	Higher Educationകോവിഡ് 19 ന്റെ പശ്ചാത്തലത്തിൽ 2021 -22 അക്കാദമിക വർഷം കേരളത്തിലെ സർവ്വകലാശാലകളോട് അഫിലിയേറ്റ് ചെയ്തിട്ടുള്ള ആർട്ട് & സയൻസ് കോളേജുകളിൽ ബിരുദ ബിരുദാനന്തര ബിരുദ പാഠ്യപുസ്തകങ്ങളിൽ സീറ്റ് വർദ്ധനവ് അനുവദിച്ച ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O.(Rt)No.564/2021/ DMD	Order	04-08-2021	Disaster Management	Disaster Management Department - COVID-19 containment activities - relaxation and restrictions from 5 th August-2021 - Orders issued.	Download PDF
G.O.(Rt)No.550/2021/ DMD	Order	28-07-2021	Disaster Management	Disaster Management Department- Covid 19- containment activities- relaxations and restrictions from 29th july 2021 onward- orders -issued	Download PDF
G.O. (R.T) No.682/2021/ PWD	Order	28-07-2021	PWD	പൊതുമരാമത്ത് വകുപ്പ് കോവിഡ് 19 ലോക്ക് ഡൗൺ 4പവർത്തികൾ നടപ്പിലാക്കുന്നതിനായി യഥാസമയം കരാർ ഉടമ്പടിയിലെർപ്പാടൻ സാധിക്കാതിരുന്ന കരാറുകാരിൽ നിന്നും പിഴ ഈടാക്കുന്നത് ഒഴിവാക്കി കരാറിൽ ഏർപ്പെടുന്നതിനു എ4ഗിമെന്റ് അതോറിറ്റികൾക്ക് അനുവാദം നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (R.T) No. 1410/2021/LSGD	Order	27-07-2021	LSGD	LSGD കോവിഡ് 19 4പതുക സാഹചര്യം കണക്കിലെടുത്തു 2020 -21 സാമ്പത്തിക വർഷം ലോക്ക് ഡൗൺ മൂലം താത്കാലികമായി അടച്ചിട്ടിരുന്ന തദ്ദേശ സ്വയംഭരണ സ്ഥാപനങ്ങളുടെ വികസന അതോറിറ്റിയുടെ ഉടമസ്ഥതയിലുള്ളതും ലേലം ചെയ്ത് നൽകിയതുമായ എല്ലാ ഇനങ്ങൾക്കും അടച്ചിട്ടിരുന്ന കാലയളവിനു ആനുപാതികമായി കിഴിവ് അനുവദിക്കുന്നതിന് തദ്ദേശ സ്വയംഭരണ സ്ഥാപനങ്ങൾക്കും വികസന അതോറിറ്റികൾക്കും അനുമതി നൽകി ഉത്തരവാകുന്നു	Download PDF
G.O. (R.T) No. 1409/2021/LSGD	Order	27-07-2021	LSGD	LSGD സംസ്ഥാനത്തെ ഓൺലൈൻ പഠനത്തിനായി ഡിജിറ്റൽ വിദ്യാഭ്യാസ സൗകര്യമൊരുക്കുന്നത് എല്ലാ വിദ്യാർത്ഥികൾക്കും പഠന സൗകര്യം ഒരുക്കുന്നതിന് തദ്ദേശ സ്ഥാപനങ്ങളുള്ള മാർഗനിർദ്ദേശങ്ങൾ - ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O.(Rt)No.1550/2021/ H&FWD	Order	26-07-2021	Health and Family welfare	Health and Family Welfare Department - Prioritization for Vaccination above 18 years - Modified - Orders issued.	Download PDF
G.O.(Rt)No.545/2021/ DMD	Order	24-07-2021	Disaster Management	Disaster Management Department - Guidelines on the restrictions imposed in the State as part of COVID-19 containment activities from 26 th July 2021 - Orders issued	Download PDF
No.205/DD2/2020/LSGD	Circular	23-07-2021	LSGD	LSGD മഹാത്മാ ഗാന്ധി ദേശീയ 4ഗ്രാമീണ തൊഴിലുറപ്പ് പദ്ധതി - കോവിഡ് 19 നിയന്ത്രണങ്ങൾ പാലിച്ചുകൊണ്ട് 4പവർത്തികൾ ഏറ്റെടുക്കുന്നത് സംബന്ധിച്ച്	Download PDF
No 57/2021/FIN	Guidelines	19-07-2021	Finance	പതിനൊന്നാം പെൻഷൻ പരിഷ്കരണം - സമ്മദേഹം ഓൺലൈൻ ആയി സമർപ്പിക്കുന്നതും പെൻഷൻ കൂടിക്കയുടെ മൂന്ന് നാല് ഗഡുക്കൾ അനുവദിക്കുന്നതും സംബന്ധിച്ച് പുതുക്കിയ മാർഗനിർദ്ദേശങ്ങൾ പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 249/2021	Order	16-07-2021	Transport	ഗതാഗത വകുപ്പ് കോവിഡ് മാനദണ്ഡങ്ങൾ പാലിച്ച് സംസ്ഥാനത്തെ 14ഡവിംഗ് സ്കൂളുകൾ തുറക്കുന്നതിനും 14ഡവിംഗ് ട്രെയ്ൻ പുനരാരംഭിക്കുന്നതിനും അനുമതി നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 5001/2020/LSGD	Order	16-07-2021	Finance	Finance കോവിഡ് 19 സാഹചര്യത്തിൽ കശുവണ്ടി തൊഴിലാളി ആശ്വാസ ക്ഷേമനിധി ബോർഡിന് സർക്കാർ അനുവദിച്ച 4പതുക ധനസഹായവും വിതരണം ചെയ്യുന്നതിനു മാതൃകയായി ബോർഡിൻറെ പേരിൽ കോല്ലം ജില്ലാ ട്രഷറിയിൽ ഒരു പലിശ രഹിത സ്പെഷ്യൽ ട്രഷറി സെവിങ്സ് ബാങ്ക് അക്കൗണ്ട് തുടങ്ങുന്നതിനുള്ള അനുമതി നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 1343/2021/LSGD	Order	16-07-2021	LSGD	LSGD കോവിഡ് 19 പശ്ചാത്തലത്തിൽ പി എച്ച് സി കളിലും സി എച്ച് സി കളിലും നിയമിക്കപ്പെട്ട സ്റ്റാഫ് ന്ക്ക് മാരുടെ സേവനം ദീർഘിപ്പിച്ചു ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O.(Rt)No.526/2021/ DMD	Order	15-07-2021	Disaster Management	Disaster Management Department-Covid 19-containment activities- restrictions enforced in the state - exemptions for Sabarimala pilgrimage - orders issued	Download PDF
G.O. (R.T) No. 468/2021/TD	Order	15-07-2021	Tax	നികുതി വകുപ്പ് കൊവിഡ് 19 ലോക്ക് ഡൗൺ വ്യാപാരി ക്ഷേമനിധി അംഗങ്ങൾക്ക് സർക്കാർ ധനസഹായം അനുവദിച്ചു ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 524/2021/DMD	Order	13-07-2021	Disaster Management	Disaster Management Department- Covid 19- additional guidelines for implementation by the enforcement authorities from 15th July 2021- orders issued	Download PDF
G.O. (R.T) No. 1292/2021/LSGD	Order	08-07-2021	LSGD	ഹരിതകർമ്മ സേന അംഗങ്ങളെ ജോലിയിൽ നിന്ന് പിരിച്ചുവിടുന്നത് തടയുകോണ്ട് നിർദ്ദേശം നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O.(Rt)No.500/2021/ DMD	Order	06-07-2021	Disaster Management	Disaster Management Department - COVID 19 - Re-categorization of Local Self Government Institutions, on the basis of Average weekly Test Positivity Rates - additional guidelines from 8 th July 2021- orders issued	Download PDF
G.O. (R.T) No. 1253/2021/LSGD	Order	03-07-2021	LSGD	LSGD കൊവിഡ് 19 രണ്ടാം തരംഗം വ്യാപകമായ സാഹചര്യം പരിഗണിച്ച തദ്ദേശ സ്ഥാപനങ്ങളിൽ മുൻ വർഷങ്ങളിൽ വിവിധ വ്യാപാര വ്യവസായ ലേസൻസുകൾ പുതുക്കാത്തവർക്ക് ഒറ്റത്തവണ ആനുകൂല്യം - വ്യക്തത വരുത്തി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
H4-333936/2021	Proceedings	28-06-2021	Collectorate	ഭേദഗതി നിവാരണം - അതീവ അപകടാവസ്ഥയിൽ ഉള്ള മരങ്ങളുടെ ശിഖരങ്ങൾ മുറിച്ച മാറ്റുന്നതിന് ഭേദഗതി നിവാരണ നിയമം 2005 സെക്ഷൻ 30 (2) V 4പകാരം ഉത്തരവാകുന്നു	Download PDF
TRY/737/2020-P2	Order	28-06-2021	Treasury	കൊവിഡ് 19 സമൂഹ വ്യാപനം 4പധിരോധിക്കുന്നതിന് ആവശ്യമായ മുൻകരുതലുകൾ ട്രക്കോളുന്നതുമായി ബന്ധപ്പെട്ടു ബഹുമാനപ്പെട്ട മുഖ്യമന്ത്രിയുടെ അവലോകനയോഗത്തിൽ നൽകിയ നിർദ്ദേശപ്രകാരം 2021 ജൂലൈ മാസം മുതൽ 45പ്പനികളിൽ ഏർപ്പെടുത്തുവാൻ ഉദ്ദേശിക്കുന്ന നിയന്ത്രണങ്ങളും ആരോഗ്യ സുരക്ഷാ മുൻകരുതലുകളും -	Download PDF
No.25/2021	Circular	28-06-2021	Department of Cooperation	സഹകരണ വകുപ്പ് കൊവിഡ് 19 ഓൺലൈൻ ക്ലാസ് വിദ്യാർത്ഥികൾക്ക് മോഡേൺ ഫോൺ - പലിശ രഹിത വായ്പ നിർദ്ദേശങ്ങൾ സംബന്ധിച്ച്	Download PDF
Circular No 22/2021	Circular	23-06-2021	Department of Cooperation	സഹകരണ വകുപ്പ് - കൊവിഡ് 19 ഓൺലൈൻ ക്ലാസ് വിദ്യാർത്ഥികൾക്ക് മോഡേൺ ഫോൺ - പലിശ രഹിത വായ്പ നിർദ്ദേശങ്ങൾ സംബന്ധിച്ച്	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (R.T) No. 1197/2021/LSGD	Order	23-06-2021	LSGD	LSGD - പട്ടികവർഗ്ഗ വിഭാഗത്തിൽപ്പെട്ട വിഭജ്യാർത്ഥികളുടെ ഓൺലൈൻ പഠനം തദ്ദേശ സ്ഥാപനങ്ങൾ സ്വീകരിക്കേണ്ട നടപടികൾ സംബന്ധിച്ച മാർഗനിർദ്ദേശങ്ങൾ - ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
ROC No.3701/20/Est-I	Order	23-06-2021	Trivandrum Devasom Board	സംസ്ഥാനത്തെ നിലവിലുണ്ടായിരുന്ന ലോക്ക് ഡൗൺ നിബന്ധനകളിൽ ഇളവുകൾ വരുത്തിയ സാഹചര്യത്തിൽ തിരുവിതാംകൂർ ദേവസ്വം ബോർഡ് ന്റെ കീഴിലുള്ള ക്ഷേത്രങ്ങളിലെ പാവർത്തിനം സംബന്ധിച്ച് താഴെ പറയുന്ന മാർഗനിർദ്ദേശങ്ങൾ നടപ്പിലാക്കുന്നത് തീരുമാനിച്ചു ഉത്തരവാകുന്നു	Download PDF
G.O.(Rt)No.479/2021/ DMD	Order	22-06-2021	Disaster Management	Disaster Management Department - Covid 19 - lockdown exemptions based on average Test Positivity Rates of LSGIs - additional guidelines -orders issued	Download PDF
G.O. (R.T) No. 1180/2021/LSGD	Order	21-06-2021	LSGD	കോവിഡ് ടി പി ആർ 20 ശതമാനത്തിൽ താഴെ ആയിട്ടുള്ള തദ്ദേശ സ്ഥാപനങ്ങളിൽ റെഗുലർ ഓഫീസർമാരായി നിയോഗിതരായിട്ടുള്ള ഉദ്യോഗസ്ഥരെ പരസ്പരം ചുമതലയിൽ നിന്ന് ഒഴിവാക്കി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
No.9408/ L.F.A.C.A2/2021/LS	Notification	18-06-2021	Legislative Assembly Secretariat	വിജ്ഞാപനം	Download PDF
G.O. (R.T) No. 1161/2021/LSGD	Order	17-06-2021	LSGD	കോവിഡ് ഫെസ്റ്റ് ലൈൻ ടീസ്റ്റിംഗ് സെന്റർ രൂപീകരണവും നടത്തിപ്പും സംബന്ധിച്ച മാർഗ നിർദ്ദേശങ്ങളിൽ ഭേദഗതി വരുത്തി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O.(Rt)No.472/2021/ DMD	Order	17-06-2021	Disaster Management	Disaster Management Department-COVID-19- Containment activities in the State-Exemption in Mandatory RTPCR test negative result for interstate travels and for attending exams- Orders Issued.	Download PDF
G.O. (P) No. 83/2021/ FIN	Order	16-06-2021	Finance	Finance Department-Adhoc arrangement for drawing the paying and allowances including leave salary claims of Gazetted Officers up to six months based on LPC without insisting of Pay slip from Accountant General and availability of this facility up to 20-09-2021 - extension-approved-orders issued	Download PDF
G.O. (R.T) No. 396/2021/TD	Order	16-06-2021	Tax	നികുതി വകുപ്പ് - എക്സൈസ് ലോക്ക് ഡൗൺ നിയന്ത്രണങ്ങൾക്ക് വിധേയമായി സംസ്ഥാനത്തെ വിദേശ മദ്യശാലകൾ ബാർ / ബിയർ/ റവൻ പാർലർ എന്നിവ തുറന്നു പാവർത്തിക്കുന്നതിനുള്ള മാനദണ്ഡങ്ങൾ ഏർപ്പെടുത്തി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O.(Rt)No.467/2021/ DMD	Order	15-06-2021	Disaster Management	Disaster Management Department - Covid 19 - Lockdown in the State - Exemption in restrictions from 17th June-2021 onwards - Orders issued	Download PDF
G.O. (R.T) No. 467/2021/DMD	Order	15-06-2021	Disaster Management	Disaster Management - കോവിഡ് 19 സംസ്ഥാന തല ലോക്ക് ഡൗൺ 2021 ജൂൺ 17 മുതൽ നിയന്ത്രണങ്ങളിൽ ഇളവ് വരുത്തി ഉത്തരവ് ഇറക്കുന്നു	Download PDF
No.35/31/F22020/ H&FW-2020	Guidelines	15-06-2021	Health and Family welfare	Revised testing Guidelines for COVID-19	Download PDF
GO(P)98/2021/Co-op .	Notification	15-06-2021	Department of Cooperation	WHEREAS, under sub-section (1) of section 28 of the Kerala Co-operative Societies Act, 1969 (21 of 1969), the general body of a society shall constitute a committee of a period of five years in accordance with the bye-laws and entrust the management of the affairs of the society to such a committee	Download PDF
G.O. (P) No. 82/2021/ FIN	Order	14-06-2021	Finance	Finance ദേവസ വേദന കരാർ അടിസ്ഥാനത്തിൽ നിയമിതമായിട്ടുള്ള ജീവനക്കാർക്ക് കോവിഡ് പശ്ചാത്തലത്തിൽ സർക്കാർ 4പവ്വോപ്പിച്ച ലോക്ക് ഡൗൺ കാലയളവിൽ ജോലിക്ക് ഹാജരാകാൻ സാധിക്കാതിരുന്ന ദേവസങ്ങൾ ഡ്യൂട്ടിയായി പരിഗണിച്ച് വേതനം അനുവദിക്കുന്നത് സംബന്ധിച്ച ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O.(P) No.82/2021/FIN	Order	14-06-2021	Finance	Finance ദേവസ / കരാർ വേതന ജീവനക്കാരുടെ ഹാജർ നില കോവിഡ് പശ്ചാത്തലത്തിൽ 25 % 50 %എന്നിങ്ങനെ തുടർന്ന കാലയളവിലേ വേതനം അനുവദിച്ചുകൊണ്ട് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
F.No.2079203/2021/ Immunization	OFFICE MEMORANDUM	08-06-2021	Health and Family welfare	Fixation of maximum price per dose for COVID19-Vaccination-reg	Download PDF
G.O.(Rt)No.459/2021/ DMD	Order	07-06-2021	Disaster Management	Disaster Management Department - Containment Activities - Lockdown in the State from 10th June to 16th June 2021 - Additional guidelines - Orders issued.	Download PDF
No.K2/25/2021/HED	Order	06-06-2021	Higher Education	Higher Education - കോവിഡ് 19 2021 ജൂൺ 15 മുതൽ നടത്തുവന്നിരുന്ന സർവകലാശാല പരീക്ഷകൾ നീട്ടി വക്കുന്നത് സംബന്ധിച്ച	Download PDF
G.O. (R.T) No. 458/2021/DMD	Order	05-06-2021	Disaster Management	Disaster Management - കോവിഡ് 19 നിർവ്യാപന 4പവ്വോപ്പിച്ച 4പവർത്തനങ്ങൾ - സംസ്ഥാനത്തെ കൃഷിഭവനങ്ങൾ തുറന്നു 4പവർത്തിക്കുന്നതിന് അനുമതി നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (R.T) No. 1097/2021/LSGD	Order	05-06-2021	LSGD	കൊവിഡ് 4പയിരായ 4പവർത്തനങ്ങൾക്കായി തദ്ദേശ സ്വയംഭരണ സ്ഥാപനങ്ങൾക്ക് ലഭിക്കുന്ന സംഭവനതുകകൾ നാഷണലിസ്റ്റ് ബാങ്കുകളിൽ നിക്ഷേപിക്കുന്നത് - അധിക നിർദ്ദേശങ്ങൾ നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 452/2021/DMD	Order	03-06-2021	Disaster Management	Disaster Management -കൊവിഡ് 19 നിർവ്യാപന 4പതിരായ 4പവർത്തനങ്ങൾ സംസ്ഥാന കെഎൻ സർക്കാർ ഓഫീസുകളുടെ 4പവർത്തനം - മാർഗനിർദ്ദേശങ്ങൾ പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 455/2021/DMD	Order	03-06-2021	Disaster Management	Disaster Management Department- Containment Activities for the State from 31 May to 9 th June 2021 -Additional Guidelines- orders -issued	Download PDF
G.O. (R.T) No. 2901/2021/GEDN	Order	02-06-2021	General Education	പൊതു വിദ്യാഭ്യാസം - ഫെസ്റ്റ് ബേൽ 2 .0 ഡിജിറ്റൽ ക്ലാസ് എംപൊവേർഡ് കമ്മിറ്റി രൂപീകരിച്ച ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O.(Rt)No.1176/2021/H&FWD	Order	02-06-2021	Health and Family welfare	Health & Family Welfare Department - COVID -19 Treatment charges in Private Hospitals for the Walk in Patients (Other than KASP beneficiaries and Government referred patients) modified - Orders issued	Download PDF
G.O.(Rt)No.1179/2021/H&FWD	Order	02-06-2021	Health and Family welfare	Health and Family Welfare Department - Prioritization for Vaccination in the age group of 18-45 years - Modified -Orders issued.	Download PDF
G.O. (R.T) No. 1067/2021/LSGD	Order	01-06-2021	LSGD	കൊവിഡ് 19 രണ്ടാം തരംഗം 4പതിരായ 4പവർത്തനങ്ങൾ തദ്ദേശ സ്വയം ഭരണ സ്ഥാപനങ്ങളിൽ വിവിധ 4പവർത്തനങ്ങൾക്ക് നിയമിച്ച കരാർ ജീവനക്കാർ തുടരുന്നത് സംബന്ധിച്ച് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O.(Rt)No.448/2021/DMD	Order	31-05-2021	Disaster Management	DMD- COVID-19 - Containment activities - Lockdown in the State from 31st May to 9th June 2021 - Additional guidelines - Orders issued.	Download PDF
No.TRY/1850/2021-E1	Guidelines	31-05-2021	Treasury	2021 മെയ് മാസത്തെ ശമ്പളവും ജൂൺ മാസത്തെ പെൻഷനും വിതരണം ചെയ്യുന്നത് സംബന്ധിച്ച്	Download PDF
Press Release	Press Release	31-05-2021	General Education	2021 ഹയർ സെക്കന്ററി ഒന്നാം വർഷ പരീക്ഷ വിജ്ഞാപനം	Download PDF
No.31/f2/2020/H&FW	Guidelines	31-05-2021	Health and Family welfare	Instruction on COVID 19 Vaccination of Bedridden Patients Above 45 Years of Age	Download PDF
NHM/3821/ADMIN1/2020/SPMSU	Circular	29-05-2021	NHM	- Guidelines for issuance of CoVid-19 certificate for persons travelling abroad	Download PDF
G.O.(Rt)No.444 /2021/DMD	Order	29-05-2021	Disaster Management	DMD- COVID-19 - containment activities - lockdown in the State from 31st May 2021 to 9th June 2021 - additional guidelines - orders issued.	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
OPTIMAL ALLOCATION AND DISTRIBUTION OF LIQUEFIED MEDICAL OXYGEN IN KERALA STATE	Report	28-05-2021	MVD	OPTIMAL ALLOCATION AND DISTRIBUTION OF LIQUEFIED MEDICAL OXYGEN IN KERALA STATE	Download PDF
No.D.M.A2/767/2021/ D.M.D-Part2	Order	28-05-2021	Disaster Management	Disaster Management - കൊവിഡ് 19 വ്യാപനം തടയുന്നതിനുള്ള നടപടികൾ സംസ്ഥാന തല ലൊക്കഡൗണിൽ ഇളവുകൾ നൽകുന്നത് സംബന്ധിച്ച്	Download PDF
DMC3-392/2021	Proceedings	28-05-2021	Collectorate	കൊവിഡ് 19 വ്യാപനം തടയുന്നതിനുള്ള നടപടികൾ - ഇളവുകൾ നൽകുന്നത് സംബന്ധിച്ച്	Download PDF
G.O.(Rt)No.1155/2021/ H&FWD	Order	28-05-2021	Health and Family welfare	Health & Family Welfare Department - Vaccination for persons travelling abroad - instructions issued - orders issued	Download PDF
USER MANUAL FOR COVID-19 VACCINATION CERTIFICATE REQUEST	Order	28-05-2021	Health and Family welfare	USER MANUAL FOR COVID-19 VACCINATION CERTIFICATE REQUEST	Download PDF
QIP(1)/247365/2020/ DGE	Circular	27-05-2021	General Education	2021 -22 റെഗുലർ ക്ലാസുകൾ ആരംഭിക്കുന്നതുകൊണ്ട് വേർച്ഛൽ രീതിയിലുള്ള 4പവശതമാനം സംഘടിപ്പിക്കുന്നത് സംബന്ധിച്ച്	Download PDF
G.O.(Rt)No.1131/2021/ H&FWD	Order	27-05-2021	Health and Family welfare	Health & Family Welfare Department - Scarcity and shortage of COVID Personal Protective Items in the open market - Fixing the rates - Orders issued	Download PDF
G.O. (R.T) No. 1052/2021/LSGD	Order	27-05-2021	LSGD	മഴക്കാല പൂർവ്വ ശുചീകരണ പദ്ധതികൾക്ക് നടപ്പിലാക്കുന്നതിനുള്ള ശുചിത്വ മിഷൻ വിഹിതം തദ്ദേശസ്വയഭരണ സ്ഥാപനങ്ങളുടെ തനത് ഫണ്ടിൽ നിന്നും വിനിയോഗിക്കുന്നതിനു തദ്ദേശസ്വയഭരണ സ്ഥാപനങ്ങൾക്ക് യാദൃച്ഛികമായി നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
No.DC1/115/2021/LSGD	Circular	26-05-2021	LSGD	കൊവിഡ് 19 - എല്ലാ പഞ്ചായത്ത് തല ജാഗ്രത സമിതികളും വാർഡ് തല സമിതികളും പട്ടിക ജാതി വിഭാഗത്തിലുള്ളവരെ ഉൾപ്പെടുത്തണം എന്ന നിർദ്ദേശം സംബന്ധിച്ച്	Download PDF
Office Order No. 10/2021/LSGD	Order	25-05-2021	LSGD	Local self Government Department-Extension of Statewide Lock down - Working arrangement of employees in LSGD- Issuing Orders-Regarding.	Download PDF
No.D.M.A2/7/2021/ D.M.D-Part1	Order	25-05-2021	Disaster Management	Disaster Management - കൊവിഡ് 19 വ്യാപനം തടയുന്നതിനുള്ള നടപടികൾ സംസ്ഥാന തല ലൊക്കഡൗണിൽ ഇളവുകൾ നൽകുന്നത് സംബന്ധിച്ച്	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
No.DC.95/2021/LSGD	Circular	24-05-2021	LSGD	കൊവിഡ് 19 - പൾസ് ഓക്സിമീറ്ററുകളുടെ ഉപയോഗം ഉചിതമായ രീതിയിൽ ആകുന്നതിനു നിർദ്ദേശങ്ങൾ നൽകുന്നത് സംബന്ധിച്ച്	Download PDF
G.O. (R.T) No. 1114/2021/H&FWD	Order	24-05-2021	Health and Family welfare	Health and Family Welfare Department- Prioritisation for Vaccination in the age group of 18-45 years - Modified-orders issued	Download PDF
G.O. (R.T) No. 1036/2021/LSGD	Order	24-05-2021	LSGD	പാലിൻ ദൗർലഭ്യം നേരിടുന്ന ഡി സി സി കളിലും സി എഫ് എൽ ടി സി കളിലും പാൽ വിതരണം ചെയ്യാൻ നടപടി -നിർദ്ദേശങ്ങൾ നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 4139/2021/FIN	Order	24-05-2021	Finance	Finance - 2021 മേയ് മാസത്തെ സാമൂഹ്യ സുരക്ഷാ പെൻഷൻ അനുവദിച്ച ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
Guideline	Guidelines	24-05-2021	Health and Family welfare	Guidelines for domestic travel (flight/train/ship/ bus inter-state travel) In super session of guidelines issued	Download PDF
G.O.(Rt)No.432/2021/ DMD	Order	21-05-2021	Disaster Management	Disaster Management Department- Containment of Covid 19 pandemic- Extension of lock down in the state- orders issued	Download PDF
G.O.(Rt)No.430/2021/ DMD	Order	21-05-2021	Disaster Management	Disaster Management Department- supply of milk and ailed product to disaster relief camps-permission to District Collectors to allot fund from State Disaster Response Fund orders issued	Download PDF
PAN/6169/2021-B(DP)	Order	21-05-2021	Panchayat	പഞ്ചായത്ത് വകുപ്പ്- കൊവിഡ് 19 - മൂലദേശത്തിന്റെ അന്തസ്സം അവകാശവും സംരക്ഷിക്കേണ്ടത് സംബന്ധിച്ച്	Download PDF
PAN/6169/2021-B1(DP)	Order	21-05-2021	Panchayat	പഞ്ചായത്ത് വകുപ്പ്- കൊവിഡ് 19 - പശ്ചാത്തലത്തിൽ ജനന മരണ റേജിസ്ട്രേഷൻ യഥാ സമയം നടത്തുന്നത് സംബന്ധിച്ച്	Download PDF
PAN/5524/2019-J3(DP)	Circular	21-05-2021	Panchayat	പഞ്ചായത്ത് വകുപ്പ്- പഞ്ചായത്തിലെ വാർഡ് 4 പവർത്തനം നിർദ്ദേശങ്ങൾ പുറപ്പെടുവിക്കുന്നു	Download PDF
Guidelines for operationalisation of DCC	Guidelines	21-05-2021	LSGD	In the context of surge in COVID19 cases reported in the district, all local self-governments have been directed by District Disaster Management Authority to operationalise Domiciliary Care Centres for admitting COVID19 patients with no symptoms/mild symptoms.	Download PDF
G.O. (R.T) No. 1024/2021/LSGD	Order	21-05-2021	LSGD	തദ്ദേശ സ്വയം ഭരണ - അയ്യങ്കാളി നഗര തോഴിലുറപ്പ് പദ്ധതി കൊവിഡ് 19 പശ്ചാത്തലത്തിൽ 4 പവർത്തനങ്ങൾ തടസ്സം കൂടാതെ ആരംഭിക്കുന്നതിനു നിർദ്ദേശങ്ങൾ നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
P.11189/2021	Order	20-05-2021	Panchayat	പഞ്ചായത്ത് വകുപ്പ് 4ഗ്രാമ പഞ്ചായത്തുകൾ ട്രക്കിംഗും ചെക്ക് വരുന്ന കോവിഡ് 4പതിരായ 4പവർത്തനങ്ങളും മറ്റും ഡോക്യുമെന്റേഷൻ ചെയ്യുന്നത് സംബന്ധിച്ച്	Download PDF
NO.29/31/F2/2020/Health	Guidelines	20-05-2021	Health and Family welfare	Framework for Health System Preparedness for managing population displacements due to natural calamities in the context of COVID-19 in KERALA	Download PDF
No.95/D.C.1/2021/LSGD	Circular	20-05-2021	LSGD	തദ്ദേശ സ്വയം ഭരണ വകുപ്പ് -കോവിഡ് 19 ഡി സി സി കളിലും സി എഫ് എൽ ടി സി കളിലും സി എസ് എൽ ടി സി കളിലും വരുന്ന കോവിഡ് രോഗികളുടെ സ്വകാര്യ വസ്തുക്കൾ /ആരോഗ്യം എന്നിവയുടെ സുരക്ഷ നിർദ്ദേശം സംബന്ധിച്ച്	Download PDF
T.R.01/001601/2021	Memorandum	19-05-2021	KSRTC	ലോക്ക് ഡൗൺ കാലയളവിൽ നടത്തുന്ന സേർവീസുകളിൽ ആരോഗ്യപരമായതുകൾക്കു പുറമെ മറ്റും അവസര സേർവീസുകളിൽ ഉള്ള ജീവനക്കാർക്കും യാത്ര സൗകര്യം അനുവദിക്കുന്നത് സംബന്ധിച്ച്	Download PDF
No.814/GL2/2020/RTC	Memorandum	19-05-2021	KSRTC	18 നും 44 നും മദ്ധ്യേ 4പായമുള്ള 6കു എസ് ആർ ടി സി ജീവനക്കാർക്ക് കോവിഡ് വാക്സിൻ നൽകുന്നത് - യൂണിറ്റിന്റെ തലത്തിൽ നടപടികൾ സ്വീകരിക്കുന്നതിന് മനോധർമ്മ ഓഫീസർ ,മനോധർമ്മ അസിസ്റ്റന്റ് എന്നിവരെ നിയോഗിച്ച നടപടികൾ സ്വീകരിക്കുന്നത് സംബന്ധിച്ച്	Download PDF
KITE/2021/1421(6)	Circular	19-05-2021	KITE	KITE സർക്കാർ എസ്റ്റേബ്ലിഷ്മെന്റുകളിൽ 2021 -22 അദ്ധ്യയന വർഷത്തെ സ്കൂൾ 4പരീക്ഷണം , വിടുതൽ സർട്ടിഫിക്കറ്റിന്റെ എന്നിവ ഓൺലൈൻ സംവിധാനത്തിലൂടെ നടപ്പിലാക്കുന്നതിന്റെ വിശദാംശങ്ങൾ സംബന്ധിച്ച്	Download PDF
No.DC.95/2021/LSGD	Order	19-05-2021	LSGD	ഗുണനിലവാരമുള്ള മാസ്കുകൾ വാങ്ങാൻ ശേഷിയില്ലാത്തവർക്ക് മൂന്ന് ലയറുള്ള N95 മാസ്കുകൾ ലഭ്യമാകുന്നത് സംബന്ധിച്ച്	Download PDF
NO: NHM/947/SNO (TRAINING)/2021/SPMSU	Proceedings	19-05-2021	STATE MISSION DIRECTOR	PROCEEDINGS OF THE STATE MISSION DIRECTOR, THIRUVANANTHAPURAM- Duty order of doctors in Hemophilia OPD	Download PDF
No.DC1/26/21	Guidelines	18-05-2021	Urban Affairs	നഗരകാര്യ വകുപ്പ് കോവിഡ് രണ്ടാം തരംഗം - നഗരസഭകളിൽ നിന്ന് നൽകുന്ന വിവിധ സർട്ടിഫിക്കറ്റുകൾ - രോഗ നിവാരണ 4പതിരായ നടപടികൾ തുടർ നിർദ്ദേശങ്ങൾ നൽകുന്നത് സംബന്ധിച്ച്	Download PDF
QIP(1)/9141/2020/DGE	Circular	18-05-2021	General Education	2021-22 അദ്ധ്യയന വർഷത്തെ അഡ്മിഷൻ/64പാഠമാഷൻ നടപടികൾ - മാർഗനിർദ്ദേശങ്ങൾ പുറപ്പെടുവിക്കുന്നത് സംബന്ധിച്ച്	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (R.T) No. 1005/2021/LSGD	Order	17-05-2021	LSGD	കൊവിഡ് 19 പതിരായത്തിന് തദ്ദേശ സ്വയം ഭരണ സ്ഥാപനങ്ങൾ സ്വീകരിക്കുന്ന സംഭാവനകൾ കൈമാറ്റം ചെയ്യുന്നതിന് ബാങ്ക് അക്കൗണ്ട് ആരംഭിക്കുന്നതിനുള്ള അനുമതി ബ്ലോക്ക് / ജില്ലാ പഞ്ചായത്തുകൾക്കും ബാധകമാക്കിക്കൊണ്ട് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O.(Rt)No.427/2021/ DMD	Order	17-05-2021	Disaster Management	GAD- Covid-19 - containment activities- Swearing in ceremony of the new Council of Ministers, Kerala- exemption from lockdown restrictions-orders issued.	Download PDF
PAN/6169/2021-B1(DP)	Circular	17-05-2021	Panchayat	പഞ്ചായത്ത് വകുപ്പ് കൊവിഡ് 19 - മരണ കാരണം റിപ്പോർട്ട് ചെയ്തതിൽ ഉൾപ്പെടുന്നതിൽ സംബന്ധിച്ച	Download PDF
NHM/3821/ ADMIN1/2020/SPMSU	Guidelines	16-05-2021	Home	Vaccination for 18-44 age group - Guidelines issued reg.	Download PDF
Order No-DCTSR/ H4/14476/2019	Proceedings	16-05-2021	Collectorate	ഭേദഗതി നിവാരണ നിയമം 2005 - കൊവിഡ് 19 ലൊക്ക് ഡൗൺ തുടർ ജില്ലയിൽ അധികനിയന്ത്രണം ഏർപ്പെടുത്തി ഉത്തരവാകുന്നു	Download PDF
Guideline	Guidelines	16-05-2021	Health and Family welfare	SOP on COVID-19 Containment & Management in Peri-urban, Rural & Tribal	Download PDF
DDMA/COVID/01/2020-H2	Proceedings	16-05-2021	Collectorate	COVID 19 SARS-CoV-2 Virus Outbreak Control - Additional Stringent Restrictions - Orders issued- reg.	Download PDF
3804.2020.D2	Proceedings	16-05-2021	Collectorate	ഭേദഗതി നിവാരണ നിയമം 2005 - കൊവിഡ് 19 ലൊക്ക് ഡൗൺ എറണാകുളം ജില്ലയിൽ അധികനിയന്ത്രണം ഏർപ്പെടുത്തി ഉത്തരവാകുന്നു	Download PDF
DCMPM/1734/2020-DM1	Proceedings	16-05-2021	Collectorate	ഭേദഗതി നിവാരണ നിയമം 2005 - കൊവിഡ് 19 ലൊക്ക് ഡൗൺ മലപ്പുറം ജില്ലയിൽ അധികനിയന്ത്രണം ഏർപ്പെടുത്തി ഉത്തരവാകുന്നു	Download PDF
PAN/5771/2020-B1(DP)	Circular	15-05-2021	Panchayat	കൊവിഡ്- 19 - തദ്ദേശ സ്വയംഭരണ സ്ഥാപനങ്ങളിൽ ജനന-മരണങ്ങൾ റിപ്പോർട്ട് ചെയ്യുന്നതിനും രജിസ്റ്റർ ചെയ്യുന്നതിനുമുള്ള കാലാവധി വീണ്ടും നൽകുന്നു	Download PDF
G.O.(Rt)No.416/2021/ DMD	Order	14-05-2021	Disaster Management	GAD- Covid-19 - containment activities- second phase lock down in the State from 16 th May-2021 to 23 rd May-2021-orders issued	Download PDF
G.O.(P) No.8/2021/ F&CSD	Order	14-05-2021	Food & Civil Supplies	Food and Civil Supplies Department - COVID 19 - Pandemic- Measure to Tackle the Exigency- Declaration of Medical Items are Essential Article- Order Issued	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
A7-28644/2021	Notice	14-05-2021	High Court	Modification in filing and sitting arrangements from 17.05.2021 onwards - reg	Download PDF
G.O. (R.T) No. 414/2021/DMD	Order	13-05-2021	Disaster Management	Disaster Management Department- Hospital Safety- Conduct of Rapid Safety Audit in Covid Hospitals across the State ve cases - orders -issued	Download PDF
No.T-9/103231/2020/PHQ	Guidelines	13-05-2021		COB Message	Download PDF
File No.PAN/5524/2019-J3(DP)	Order	12-05-2021	Panchayat	പഞ്ചായത്ത് വകുപ്പ് കോവിഡ് 19 തീ4വ വ്യാപനം - രോഗ 4പതിരായ നടപടികൾ സംബന്ധിച്ച	Download PDF
No.D.C.1/95/2021/LSGD	Order	12-05-2021	LSGD	കോവിഡ് 19 4പതിരായ 4പവർത്തനങ്ങൾക്കായി 2021 -22 വാർഷിക പദ്ധതിയിൽ 64പാജക്ടുകൾ ഏറ്റെടുക്കുന്നത് - സൂഷ്മീകരണം നൽകുന്നത് സംബന്ധിച്ച	Download PDF
G.O. (R.T) No. 995/2021/LSGD	Order	12-05-2021	LSGD	കോവിഡ് 19 4പതിരായ 4പവർത്തനങ്ങളിൽ ഓക്സിജൻ ഉപയോഗിക്കുന്നത് സംബന്ധിച്ച മാർഗനിർദ്ദേശങ്ങൾ നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 412/2021/DMD	Order	12-05-2021	Disaster Management	കോവിഡ് 4പതിരായ 4പവർത്തനങ്ങളിൽ സർക്കാർ ജീവനക്കാരെയും അദ്ധ്യാപകരെയും നിയമിക്കുന്നത് സംബന്ധിച്ച പരിഷ്കരിച്ച ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 995/2021/LSGD	Order	12-05-2021	LSGD	കോവിഡ് 19- 4പതിരായ 4പവർത്തനങ്ങളിൽ ഓക്സിജൻ ഉപയോഗിക്കുന്നത് സംബന്ധിച്ച മാർഗനിർദ്ദേശങ്ങൾ നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
No.27/31/F2/2020/H&FW	Guidelines	12-05-2021	Health and Family welfare	Optimisation of COVID 19 Testing Strategy in the Second Wave of the Pandemic	Download PDF
No.PAN/5524/2019-J3(DP)	Guidelines	12-05-2021	Panchayat	പഞ്ചായത്ത് വകുപ്പ് കോവിഡ് 19 തീ4വ വ്യാപനം രോഗ 4പതിരായ 4പവർത്തനങ്ങൾ സംബന്ധിച്ച്	Download PDF
No.110/D.C.1/2021/LSGD	Circular	11-05-2021	LSGD	ഈദ് ഉൽ ഫെത്തറിനോട് റംസാൻ അനുബന്ധിച്ചു തദ്ദേശ സ്വയം ഭരണ സ്ഥാപനങ്ങളുടെ സഹായത്തോടെ മാംസ വിഭവങ്ങൾ ഡ്വാർ ഡേലിവറി നടത്തുന്നത് മാർഗനിർദ്ദേശങ്ങൾ പുറപ്പെടുവിക്കുന്നത് സംബന്ധിച്ച	Download PDF
G.O. (R.T) No. 410/2021/DMD	Order	11-05-2021	Disaster Management	Disaster Management - കോവിഡ് 4പതിരായ 4പവർത്തനങ്ങളിൽ സർക്കാർ ജീവനക്കാരെയും അദ്ധ്യാപകരെയും നിയമിക്കുന്നത് മാർഗ രേഖ ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O.(Rt)No.411/2021/ DMD	Order	11-05-2021	Disaster Management	GAD- Covid-19 - containment activities-lock down in the State from 8 th May-2021- modification orders issued	Download PDF
G.O. (R.T) No. 986/2021/LSGD	Order	11-05-2021	LSGD	തദ്ദേശ സ്വയം ഭരണ വകുപ്പ് കൊവിഡ് 19 4പതിരായ നടപടികളുടെ ഭാഗമായി കമ്മ്യൂണിറ്റി കിച്ചൻ നടത്തിപ്പുമായി ബന്ധപ്പെട്ട തുടർ മാർഗനിർദ്ദേശങ്ങൾ നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
No. DC1.109/2021/ LSGD	Circular	11-05-2021	LSGD	കൊവിഡ് രോഗബാധ മൂലം മരണപ്പെടുന്ന ആൾക്കാരുടെ മൃതശരീരം മറവ് ചെയ്യുന്നത് - ബന്ധുക്കളുടെ ആവശ്യപ്രകാരം മൃതശരീരം വിട്ടുനൽകുന്നതിൽ വ്യക്തത വരുത്തുന്നത് സംബന്ധിച്ച	Download PDF
G.O.(Rt)No.1066/2021/ H&FWD	Order	10-05-2021	Health and Family welfare	Health & Family Welfare Department -COVID -19 Treatment charges in Private Hospitals for the Walk in Patients (Other than KASP beneficiaries and Government referred patients) finalised - Orders issued	Download PDF
G.O.(Rt)No.408/2021/ DMD	Order	10-05-2021	Disaster Management	GAD - Covid 19 - Containment activities-lock down in the State from 8th May 2021-modification orders issued	Download PDF
NO.24/31/F22020/ H&FW	Guidelines	09-05-2021	Health and Family welfare	Covid Pandemic-Immediate Actions To Strengthen Patient Care	Download PDF
G.O.(Rt)No.406/2021/ DMD	Order	08-05-2021	Disaster Management	Disaster Management Department - Covid-19 - Containment activities-lock down in the State from 8th May 2021- Modified - orders issued.	Download PDF
101/D.C.1/2021/LSGD	Circular	08-05-2021	LSGD	കൊവിഡ് 19 പശ്ചാത്തലത്തിൽ ഹരിത കർമ്മ സേന അംഗങ്ങളുടെ ആരോഗ്യ സുരക്ഷാ ഉറപ്പാക്കിക്കൊണ്ട് ഹരിത കർമ്മ സേന മുഖേന മാലിന്യങ്ങളുടെ വാതിലുടി ശ്രമരണം നടത്തുന്നതിന് ആവശ്യമായ നടപടികൾ സ്വീകരിക്കുന്നത് സംബന്ധിച്ച	Download PDF
G.O.(Rt)No.405/2021/ DMD	Order	07-05-2021	Disaster Management	Disaster Management Department- Covid 19-Containment Activities-lock down in the state form 8Th may 2021-Modification orders -issued	Download PDF
G.O.(Rt)No.404/2021/ DMD	Order	06-05-2021	Disaster Management	Disaster Management Department - Covid-19 - containment activities-lock down in the State from 8 th May 2021-orders issued.	Download PDF
G.O. (R.T) No. 950/2021/LSGD	Order	05-05-2021	LSGD	കൊവിഡ് 19 4പതിരായ 4പവർത്തനങ്ങൾ സംഘടിപ്പിക്കുന്നതിനു ആവശ്യമായ ഗതാഗത സൗകര്യം ഒരുക്കുന്നതിന് വേണ്ട മാർഗനിർദ്ദേശങ്ങൾ നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 1038/2021/H&FWD	Order	05-05-2021	Health and Family welfare	H&FWD- Appointing Officers in the 24*7 state Oxygen War Room- Sanction Accorded-Order -Issued	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O.(Rt)No.1038/2021/ H&FWD	Order	05-05-2021	Health and Family welfare	H&FWD - Appointing Officers in the 24x7 State Oxygen War room - sanction accorded - orders issued	Download PDF
G.O. (R.T) No. 947/2021/LSGD	Order	04-05-2021	LSGD	കൊവിഡ് 19 4പതിരായ 4പവർത്തന സംവിധാനങ്ങൾ കൂടുതൽ വിപുലമാക്കി ഓരോ രോഗിയ്ക്കും 4ശഡ എത്തിക്കാൻ സഹായകമായ രീതിയിൽ നിലവിലുള്ള സംഘടന സംവിധാനം വിപുലപ്പെടുത്തുന്നതിനുള്ള നിർദ്ദേശങ്ങൾ നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O.(Rt)No.397/2021/ DMD	Order	03-05-2021	Disaster Management	Disaster Management Department- Surge in COVID 19 cases - Containment - Additional restrictions on staff who shall attend office - Orders issued	Download PDF
G.O.(Rt)No.394/2021/ DMD	Order	03-05-2021	Disaster Management	Disaster Management Department - Covid 19 - Exemption from duty to blind and other disabled employees-exemption granted-orders issued	Download PDF
G.O. (R.T) No. 944/2021/LSGD	Order	03-05-2021	LSGD	കൊവിഡ് 19 കൊവിഡ് 4പതിരായത്തിന്റെ ഭാഗമായി 4പദേശത്തേ ആരോഗ്യ സ്ഥാപനങ്ങളിൽ ഓക്സിജൻ ലഭ്യത ഉറപ്പു വരുത്തുന്നതിന് തദ്ദേശ സ്വയം ഭരണ സ്ഥാപങ്ങൾക്ക് മാർഗനിർദ്ദേശങ്ങൾ നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 939/2021/LSGD	Order	02-05-2021	LSGD	കൊവിഡ് 19 രണ്ടാം തരംഗത്തിൽ കേസുകളുടെ എണ്ണം വർദ്ധിച്ചു വരുന്ന സാഹചര്യത്തിൽ രോഗികളെയും കുടുംബങ്ങളെയും കൃത്യമായ വിവരങ്ങൾ നൽകി സഹായിക്കുന്നതിന് തദ്ദേശ സ്വയം ഭരണ സ്ഥാപനങ്ങളിൽ ഒരുക്കുന്ന കൊവിഡ് വാർ റൂമിന്റെ ഭാഗമായി ദിവസം മുഴുവൻ 4പവർത്തിക്കുന്ന ഹെൽപ്പ് ഡെസ്ക് സംവിധാനം സജ്ജമാക്കുന്നതിനുള്ള മാർഗനിർദ്ദേശങ്ങൾ നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O.(Rt)No.393/2021/ DMD	Order	01-05-2021	Disaster Management	Disaster Management Department - Surge in COVID 19 cases during the current second wave - Denial by private laboratories in the State to conduct RTPCR tests for the detection of COVID 19 at the revised rate for RTPCR testing fixed by Government/Charging in excess - Sufferings caused to the public and attempt to derail the State's 'track- test- treat' strategy for the containment of the COVID 19 pandemic - Stringent action warranted - Orders issued	Download PDF
No.(CS)A4-484/2020	Order	01-05-2021	Food & Civil Supplies	കൊവിഡ് 19 രണ്ടാംഘട്ട രോഗ വ്യാപനവുമായി ബന്ധപ്പെട്ട് റേഷൻ കടകളുടെ 4പവർത്തന സമയം പുനഃക്രമീകരിക്കുന്നത് സംബന്ധിച്ചു	Download PDF
No.26/31/F2/2020/ H&FW	Order	01-05-2021	Health and Family welfare	Advisory With Regard to Optimal Use of High Flow Nasal Cannulas (HFNC) And Oxygen Audits	Download PDF

G.O. / Circular No.	Type	Date	Department	Subject	Download Link
G.O.(Rt)No.392/2021/ DMD	Order	30-04-2021	Disaster Management	Disaster Management Department - Expanding the bed capacity available in Hospitals for Covid 19 care to cater to Covid 19 patients requiring hospitalization during the current surge - Extraordinary measures warranted - Orders issued	Download PDF
G.O. (R.T) No. 391/2021/DMD	Order	30-04-2021	Disaster Management	Disaster Management Department- Covid 19-Surge in positive cases - Restrictions for the effective containment of Covid 19-further orders -issued	Download PDF
G.O. (R.T) No. 391/2021/DMD	Order	30-04-2021	Disaster Management	Disaster Management Department- Covid 19-Surge in positive cases - Restrictions for the effective containment of Covid 19-further orders -issued	Download PDF
G.O.(Rt)No.980/2021/ H&FWD	Order	30-04-2021	Health and Family welfare	Health & Family Welfare Department - Refixing the rate for RT PCR test for COVID19 - Sanction Accorded - Orders issued	Download PDF
No.Ex.II/03/1010/HSE/ 2021	Circular	30-04-2021	General Education	ഹയർ സെക്കണ്ടറി വിദ്യാഭ്യാസ വകുപ്പ് 2021 ഏപ്രിലിലെ രണ്ടാം വർഷ പരീക്ഷകളുടെ മൂല്യ നിർണ്ണയം സംബന്ധിച്ച	Download PDF
No.DC5-3034/2020	Circular	30-04-2021	Urban Affairs	നഗരകാര്യ വകുപ്പ് - കോവിഡ് 19 തീവ്ര വ്യാപനം നഗരകാര്യ വകുപ്പുമായി ബന്ധപ്പെട്ട ഓഫീസുകളുടെ 4പവർത്തനം മാർഗനിർദ്ദേശങ്ങൾ പുറപ്പെടുവിക്കുന്നതിന് സംബന്ധിച്ച	Download PDF
No.929/2021/LSGD	Order	29-04-2021	LSGD	തദ്ദേശ സ്വയം ഭരണ വകുപ്പ് കേരള പഞ്ചായത്ത് രാജ്/ മുനിസിപ്പാലിറ്റി (ഭൂരിഭാഗം നിയമിതരും വിനിയോഗവും) ചട്ടങ്ങൾ കോവിഡ് 4പതിരായനത്തിനായി തദ്ദേശ സ്വയം ഭരണ സ്ഥാപനങ്ങൾക്ക് സംഭാവനയായി ലഭിക്കുന്ന തുക ക്കാര്യം ചെയ്യുന്നതിനായി 4പതുകും ബാങ്ക് അക്കൗണ്ട് ആരംഭിക്കുന്നതിനു അനുമതി നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 932/2021/LSGD	Order	29-04-2021	LSGD	സംസ്ഥാനത്തെ കോവിഡ് 19 ന്റെ അതിരൂക്ഷമായ വ്യാപനം കാണിക്കില്ലെങ്കിൽ തദ്ദേശ സ്വയം ഭരണ സ്ഥാപനങ്ങളുടെ കോവിഡ് 19 ന്റെ 4പതിരായനവർത്തനത്തിന് സഹായിക്കുന്നതിനായി യോഗ്യരായ ഉദ്യോഗസ്ഥരെ നോഡൽ ഓഫീസറായി തദ്ദേശ സ്വയം ഭരണ സ്ഥാപനങ്ങളിൽ നിയമിക്കുന്നതിനും സംസ്ഥാന തലത്തിൽ തദ്ദേശ സ്വയം ഭരണ വാർ റ്റും രൂപീകരിച്ചുകൊണ്ടും ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
Go(MS) No.85/2021/ H&FWD	Order	29-04-2021	Health and Family welfare	ആരോഗ്യ കുടുംബ ക്ഷേമ വകുപ്പ് - കേന്ദ്ര സർക്കാരിന്റെ ദേശീയ വാക്സിനേഷൻ നയത്തിന്റെ ഭാഗമായി മൂന്നാം ഘട്ടത്തിൽ 18 നും 45 നും ഇടയിൽ 4പായമുള്ളവർക്ക് സൗജന്യമായി വാക്സിൻ നൽകുന്നതിന് അനുമതി നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
464/INST/2021/EPS	Guidelines	28-04-2021	Election Commission	General Election to Legislative Assemblies of West Bengal, Assam, Tamil Nadu, Kerala and Puducherry, 2021 and bye election in various states - Broad Guidelines for Covid-Safety During Counting of votes on 2nd May, 2021- Regarding.	Download PDF
No.19/31/F2/2020/Health	Guidelines	28-04-2021	Health and Family welfare	Covid 19 - Vaccination - 2nd Dose Eligible People Prioritization	Download PDF
DMA2/767/2020-DMD	Guidelines	28-04-2021	Disaster Management	DMD-Covid 19 - Surge in Positive Cases - Restructions for the effective containment of covid 19 - Departments included as essential services	Download PDF
Press Release	Press Release	28-04-2021	General Education	SSLC Exam Date Change.Reg	Download PDF
No.69/2021/FIN	Order	28-04-2021	Finance	Finance - സംസ്ഥാനത്തെ കൊവിഡ് കേസുകളുടെ വർദ്ധനവ് കണക്കിലെടുത്തു ട്രഷറിയിൽ അടിയന്തിരമായി ഏർപ്പെടുത്തേണ്ട ആവശ്യ സുരക്ഷാ മുൻകരുതലുകൾ സംബന്ധിച്ച് - ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF
No.19/31/F2/2020/Health	Guidelines	28-04-2021	Health and Family welfare	Covid 19 Vaccination - 2nd Dose Eligible People Prioritisation	Download PDF
J3-5524/2019	Circular	27-04-2021	Panchayat	കൊവിഡ് 19 തീവ്ര വ്യാപനം - പഞ്ചായത്ത് വകുപ്പുമായി ബന്ധപ്പെട്ട ഓഫീസുകളുടെ 4പവർത്തന - മാർഗനിർദ്ദേശങ്ങൾ പുറപ്പെടുവിക്കുന്നു	Download PDF
No.119/EE4/2021/Elec	Guidelines	27-04-2021	Child Rights	Election Department - General Election to Kerala Legislative Assembly,2021 - Counting on 02.05.2021 - Implementation of Covid Protocol Guidelines	Download PDF
No.464/INST/2021/EPS	Guidelines	27-04-2021	Election Commission	General Election to Legislative Assemblies of West Bengal, Assam, Tamil Nadu, Kerala and Puducherry , 2021 - Prohibition of Victory Procession	Download PDF
119/EE4/2021/Elec	Guidelines	27-04-2021	Election Commission	Election Department- General Election to Kerala Legislative Assembly, 2021- Counting on 02-05-2021- implementation of Covid Protocol Guidelines-regarding	Download PDF
G.O.(Rt)No.383/2021/ DMD	Order	26-04-2021	Disaster Management	Disaster Management Department- Covid 19-Surge in positive cases - Restrictions for the effective containment of Covid 19-further orders -issued	Download PDF
G.O.(Rt)No.383/2021/ DMD	Order	26-04-2021	Disaster Management	Disaster Management Department- Covid 19-Surge in positive cases - Restrictions for the effective containment of Covid 19-further orders -issued	Download PDF
G.O. (R.T) No. 383/2021/DMD	Order	26-04-2021	Disaster Management	Disaster Management Department- Covid 19-Surge in positive cases - Restrictions for the effective containment of Covid 19-further orders -issued	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O.(Rt)No.383/2021/ DMD	Order	26-04-2021	Disaster Management	Disaster Management Department- Covid 19-Surge in positive cases - Restrictions for the effective containment of Covid 19-further orders -issued	Download PDF
G.O.(Rt)No.385/2021/ DMD	Order	26-04-2021	Disaster Management	DMD-Covid 19 - SURge in Positive Cases - Restructions for the effective containment of covid 19 - Further Order Issued	Download PDF
J3-5524/2019	Circular	26-04-2021	LSGD	കൊവിഡ് 19 - തീവ്ര വ്യാപനം - പഞ്ചായത്ത് വകുപ്പുമായി ബന്ധപ്പെട്ട ഓഫീസുകളുടെ 4പവർത്തനം - മാർഗ്ഗനിർദ്ദേശങ്ങൾ പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 385/2021/DMD	Order	26-04-2021	Disaster Management	Disaster Management Department- Covid 19-Surge in positive cases - Restrictions for the effective containment of Covid 19-further orders -issued	Download PDF
No.911/2021/LSGD	Order	26-04-2021	LSGD	തദ്ദേശ സ്വയം ഭരണ വകുപ്പ് - 2021 -22 വാർഷിക പദ്ധതി - കൊവിഡ് 4പതിരായ 4പവർത്തനങ്ങളുടെ ഭാഗമായി അടിയന്തര 64പാഠശാലകൾ ഏറ്റെടുക്കുന്നതിന് തദ്ദേശ സ്വയം ഭരണ സ്ഥാപങ്ങൾക്ക് അനുമതി നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
CS/Covid/2021	Circular	26-04-2021	Trivandrum Muncipal Corporation	കൊവിഡ് 4പതിരായം - ആർ ആർ ടി യോഗം കൂടുന്നത് സംബന്ധിച്ച്	Download PDF
No.18/31/F2/2020/ Health	Guidelines	25-04-2021	Health and Family welfare	Covid 19 Discharge Guidelines for Kerala State	Download PDF
No.17/31/F2/2020/ Health	Guidelines	25-04-2021	Health and Family welfare	Covid 19 Treatment Guidelines for Kerala State	Download PDF
Version 3	Guidelines	24-04-2021	GoK	Kerala State COVID 19 guidelines Version 3	Download PDF
No.16/31/F2/2020/ Health	Guidelines	24-04-2021	Health and Family welfare	Covid 19 Vaccination Planning and Conduct - Specials Arrangements for Elderly and Persons with Disability	Download PDF
No.LSGD-ERA2/47/2021-LSGD	Circular	23-04-2021	LSGD	കൊവിഡ് 19 തീവ്ര വ്യാപനം - തദ്ദേശ സ്വയംഭരണ വകുപ്പിനുള്ള മാർഗ്ഗ നിർദ്ദേശങ്ങള് . സംബന്ധിച്ച്	Download PDF
O&M3 26763/2021/DHS	Circular	23-04-2021	Health and Family welfare	Restrictions for the effective containment of Covid 19-further orders -issued	Download PDF
G.O. (R.T) No. 465/2021/ID	Order	23-04-2021	IT	Relaxation for Industries Manufacturing Essential Commodities and Continuous Processing Industrial units in the context of certain restrictions imposed on account of COVID 19 pandemic - orders issued	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
No.DC1/24/2021/LSGD	Circular	22-04-2021	LSGD	കൊവിഡ് 19 - 4പതിരായം - തീവ്ര വ്യാപനം തടയുന്നതിന് അടിയന്തിരമായി സ്വീകരിക്കേണ്ട നടപടികള് - സംബന്ധിച്ച്	Download PDF
G.O(Rt)No.378/2021/ DMD	Order	21-04-2021	Disaster Management	Disaster Management Department - Covid 19 - Surge in Positive Cases - Restrictions for the effective Containment of COVID 19 - Order Issued	Download PDF
G.O(Rt)No.375/2021/ DMD	Order	19-04-2021	Disaster Management	Disaster Management Department - Covid 19 - Containment of Covid Pandemic in the State - Directions / Guidelines	Download PDF
G.O. (Rt)No.878/2021/ H&FWD	Order	18-04-2021	Health and Family welfare	Covid 19 - Containment activities - Incoming Travellers - Surveillance	Download PDF
G.O. (R.T) No. 878/2021/H&FWD	Order	18-04-2021	Health and Family welfare	Health & family welfare department Covid 19 Containment Activities- Incoming Travellers-Surveillance - Order Issued	Download PDF
G.O(Rt)No.371/2021/ DMD	Order	17-04-2021	Disaster Management	Disaster Management Department - Covid 19 - Surge in Positive Cases - Further Restrictions for Effective containment of Covid 19	Download PDF
G.O. (R.T) No. 371/2021/DMD	Order	17-04-2021	Disaster Management	Disaster Management Department- Covid 19-Surge in positive cases - Restrictions for the effective containment of Covid 19-further orders -issued	Download PDF
G.O.(Rt)No.370/2021/ DMD	Order	16-04-2021	Disaster Management	DMD - Covid 19 - Designating District Development Commissioners (DDCs) as 'Covid Warriors' for 2 weeks - Orders issued.	Download PDF
G.O.(Rt)No.369/2021/ DMD	Order	16-04-2021	Disaster Management	DMD - Covid 19 - Restrictions Imposed on Shops - Modified Order	Download PDF
G.O.(Rt)No.370/2021/ DMD	Order	16-04-2021	Disaster Management	DMD - Covid 19 - Designating District Development Commissioners (DDCs) as 'Covid Warriors' for 2 weeks - Orders issued.	Download PDF
G.O. (R.T) No. 369/2021/DMD	Order	16-04-2021	Disaster Management	Disaster Management Department- Covid 19 - Restrictions Imposed Shops- modified- orders -issued	Download PDF
G.O. (Rt) No. 369/2021/ DMD	Order	16-04-2021	Disaster Management	Disaster Management Department- Covid 19 - Restrictions Imposed Shops- modified- orders -issued	Download PDF
No.13/31/F2/2020 Health	Guidelines	15-04-2021	Health and Family welfare	Augmented Testing strategy for kerala state - April 2021	Download PDF
F. No. 43020/07/2020-Ad.II	OFFICE MEMORANDUM	15-04-2021	Ministry of Home Affairs	Preventive measures to contain the spread of COVID-19 reg	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
No 13/31/F2/2020 Health	Guidelines	15-04-2021	Health and Family welfare	Augmented Testing Strategy for Kerala State	Download PDF
F.No 43020/07/2020-A.d.I	Notice	15-04-2021	Home	Preventive measures to contain the spread of COVID-19 reg	Download PDF
G.O.(Rt)No.364/2021/DMD	Order	13-04-2021	Disaster Management	DMD - Covid 19 - Surge in Positive Cases - Restrictions for the effective Containment of Covid 19	Download PDF
G.O.(Rt)No.364/2021/DMD	Order	13-04-2021	Disaster Management	Disaster Management Department- Covid 19-Surge in positive cases - Restrictions for the effective containment of Covid 19-further orders -issued	Download PDF
No.102/SpecialCell/2021/CSO	Report	12-04-2021	GoK	Core group for Covid 19 management	Download PDF
No.12/31/F2/2020 HEALTH	Guidelines	31-03-2021	Health and Family welfare	Advisory On Covid Appropriate Behaviour and Vaccination	Download PDF
No.TRY/1380/2020-E1	Circular	20-03-2021	Treasury	കൊവിഡ് 19 - SDTSB അക്കൗണ്ടുകളിൽ സൂക്ഷിച്ചിരിക്കുന്ന ജീവനക്കാരുടെ മാറ്റിവയ്ക്കപ്പെട്ട ശമ്പളം തിരികെ നൽകുന്നത് - സംബന്ധിച്ച്	Download PDF
No.D.M.A2/54/2021/D.M.D	Circular	02-02-2021	Disaster Management	ഭൂ.നി.വ - സർക്കാർ ഓഫീസുകളുടെ 4പവർത്തനം Work From Home വ്യവസ്ഥയിൽ ചെയ്യുന്നതിന് അനുവാദം നൽകുന്നത് സംബന്ധിച്ച്	Download PDF
G.O. (R.T) No. 242/2020/LSGD	Order	29-01-2021	LSGD	തദ്ദേശ സ്വയം ഭരണ വകുപ്പ് - സംസ്ഥാനത്തെ കൊവിഡ്-19 നിർവ്യാപന/ 4പതിരായ 4പവർത്തനങ്ങൾ വാർഡ്ലെ മോണിറ്ററിംഗ് കമ്മിറ്റികൾ പുനഃസംഘടിപ്പിച്ച് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF
G.O. (R.T) No. 242/2021/LSGD	Order	29-01-2021	LSGD	തദ്ദേശ സ്വയം ഭരണ വകുപ്പ് കൊവിഡ് 19 - നിർവ്യാപന / 4പതിരായ 4പവർത്തനങ്ങൾ - വാർഡ്ലെ മോണിറ്ററിംഗ് കമ്മിറ്റികളും പുനഃസംഘടിപ്പിച്ച് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 183/2021/LSGD	Order	22-01-2021	LSGD	LSGD - കൊവിഡ് 19 - 4പതുക സാഹചര്യം പരിഗണിച്ച് തദ്ദേശ സ്വയംഭരണ സ്ഥാപനങ്ങളിൽ വസ്തു നികുതി പിഴ കൂടാതെ അടയ്ക്കുന്നതിനുള്ള അവസാന തീയതി 31.03.2021 വരെ ദീർഘിപ്പിച്ച് നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF
Q.I.P.1/9141/2020/DGE	Circular	22-01-2021	General Education	പോതു വിദ്യാഭ്യാസം - സ്കൂൾ 4പവർത്തനം - കൂടുതൽ മാർഗ്ഗ നിർദ്ദേശങ്ങൾ പുറപ്പെടുവിക്കുന്നത് - സംബന്ധിച്ച്	Download PDF
No. 3(7)/Pol.5/2021/GAD	Guidelines	18-01-2021	GAD	GAD - Republic Day - 2021 - District level Celebrations - Guidelines forwarding of - reg	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (R.T) No. 25/2021/ DMD	Order	14-01-2021	Disaster Management	Disaster Management Department - Number of persons permitted to attend weddings enhanced from 50 to 100 persons - Sanction accorded - Orders issued.	Download PDF
DO No.T-22020/14/2020-Imm	Notice	14-01-2021	Health and Family welfare	Precautions and Contraindications for COVID-19 Vaccination	Download PDF
G.O. (M.S) No. 16/2021/ GAD	Order	13-01-2021	GAD	GAD - കൊവിഡ് 19 - സംസ്ഥാന സർക്കാർ ഓഫീസുകളുടെയും പോതുമെഖലാ സ്ഥാപനങ്ങളുടെയും, അർദ്ധ സർക്കാർ, സ്വയംഭരണ സ്ഥാപനങ്ങളുടെയും ശ്രമിയാഴ്ച്ച ദിവസങ്ങളിലെ 4പവർത്തനം സംബന്ധിച്ച് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF
G.O. (P) No. 7/2021/FIN	Order	07-01-2021	Finance	Finance Department - Covid -19 pandemic - Relaxing the requirements of performance security/Security Deposit, Bid Security/Earnest Money Deposit and Additional Performance Guarantee for the execution of public works in the Sate - Orders issued	Download PDF
RA 1/1/2021-LSGD	Circular	06-01-2021	LSGD	LSGD - കേട്ടിടനിർമ്മാണാനുമതിയുടെ കാലാവധി അവസാനിച്ച കേട്ടിടങ്ങൾക്ക് നിർമ്മാണാനുമതി ഭേദിപ്പിച്ച് നൽകുന്നത് സംബന്ധിച്ച്.	Download PDF
G.O. (R.T) No. 40/2021/ H&FWD	Order	05-01-2021	Health and Family welfare	Health & Family Welfare Department - COVID 19 - Centralised procurement and distribution of Inj Tocilizumab 200 mg, Inj Remdesivir 100 mg, Cap. Favipiravir 400 mg, Cap Favipiravir 200 mg - Sanction accorded - orders issued.	Download PDF
G.O. (R.T) No. 25/2021/ LSGD	Order	05-01-2021	LSGD	LSGD - ഭിന്നശേഷി വിഭാഗത്തിലെ ഗുണഭോക്താക്കൾക്ക് കൊവിഡ് 19 ന്റെ പശ്ചാത്തലത്തിൽ 4പതുക ധനസഹായമെന്ന നിലയിൽ മുഴുവൻ സാമ്പത്തികാനുകൂല്യങ്ങളും നൽകാൻ അനുമതി നൽകി - ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF
G.O. (R.T) No. 25/2021/ LSGD	Order	05-01-2021	LSGD	LSGD - ഭിന്നശേഷി വിഭാഗത്തിലെ ഗുണഭോക്താക്കൾക്ക് കൊവിഡ് 19 ന്റെ പശ്ചാത്തലത്തിൽ 4പതുക ധനസഹായമെന്ന നിലയിൽ മുഴുവൻ സാമ്പത്തികാനുകൂല്യങ്ങളും നൽകാൻ അനുമതി നൽകി - ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF
No.4/31/F2/H&FWD	Guidelines	04-01-2021	Health and Family welfare	Advisory for performance artists and programmes (indoor and outdoor) in the Context of Covid-19	Download PDF
No.3/31/F2/H&FWD	Guidelines	04-01-2021	Health and Family welfare	Advisory for safe conduct of festivals in the context of Covid 19	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
No.2/31/F2/H&FWD	Guidelines	04-01-2021	Health and Family welfare	Advisory on reopening of Cinema Theatres in the Context of Covid - 19	Download PDF
G.O. (R.T) No. 987/2020/DMD	Order	30-12-2020	Disaster Management	Disaster Management Department- COVID 19 Pandemic - New Year celebrations - To strictly follow COVID 19 Protocols - Orders issued	Download PDF
G.O. (R.T) No. 2433/2020/LSGD	Order	28-12-2020	LSGD	വിശാല കോച്ചി വികസന അതോറിറ്റിയിലെ ജീവനക്കാർക്ക് കൊവിഡ് 19 പിടിപെട്ടതിനെ തുടർന്നു ഓഫീസ് അടച്ചിട്ട നടപടി - സാധൂകരിച്ച ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
No.DA1/323/2020/LSGD	Circular	24-12-2020	LSGD	LSGD - കൊവിഡ് 19 ന്റെ പശ്ചാത്തലത്തിൽ ഭിന്നശേഷി വിഭാഗക്കാർക്ക് ധനസഹായം നൽകുന്നതുമായി ബന്ധപ്പെട്ട സൂഷ്മീകരണം - സംബന്ധിച്ച്	Download PDF
G.O. (R.T) No. 2363/2020/LSGD	Order	21-12-2020	LSGD	തദ്ദേശസ്വയംഭരണ വകുപ്പ് "കൊവിഡും ജീവിതവും നോച്ചാട് നേർന്നെക്കാഴ്ചകൾ " പുസ്തക രൂപത്തിലാക്കി 1000 കോപ്പി അച്ചടിച്ച സൗജന്യമായി വിതരണം ചെയ്യുന്നതിലേക്കായി കണക്കാക്കുന്ന ചെലവ് നോച്ചാട് 4ഗാമപഞ്ചായത്തിന്റേ തനത് ഫെണ്ടിൽ നിന്ന് നൽകുന്നതിനുള്ള അനുമതി നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 964/2020/DMD	Order	10-12-2020	Disaster Management	Disaster Management - കൊവിഡ് - 19 നിർവ്യാപന/4പതിരായ 4പവർത്തനങ്ങൾ - സംസ്ഥാന സർക്കാർ ഓഫീസുകളുടെ 4പവർത്തനം - മാർഗ്ഗ നിർദ്ദേശങ്ങൾ - പുറപ്പെടുവിക്കുന്നു.	Download PDF
No. CDN2/97/2020/GAD	Circular	07-12-2020	GAD	പോതുഭരണം - വിവിധ സർക്കാർ വകുപ്പുകൾക്കാവശ്യമായ തുണിത്തരങ്ങളും മറ്റേതെന്തെങ്കിലും കെത്തി/വാങ്ങി സ്ഥാപനങ്ങളിൽ നിന്നു വാങ്ങുന്നത് - നിർദ്ദേശം പുറപ്പെടുവിക്കുന്നത് - സംബന്ധിച്ച്.	Download PDF
F.No.U-11011/16/2020-MEC	Notice	05-12-2020	Health and Family welfare	NOTICE FOR CHILDREN OF COVID WARRIOR	Download PDF
No./31/F2/2020/Health	Guidelines	27-11-2020	Health and Family welfare	Advisory on Covid-19 Screening and Testing of Officers, Staff and Security Personnel Involved in Election Duties	Download PDF
No.B1/33870/2020/KSEC	Guidelines	27-11-2020	Election Commission	കൊവിഡ് 19 പോസിറ്റീവായ വോട്ടർമാർക്കും ക്യാമ്പിനിലുള്ള വോട്ടർമാർക്കും സ്പെഷ്യൽ പോസ്റ്റൽ ബാലറ്റ് പേപ്പർ വഴി വോട്ട് ചെയ്യുന്നത് സംബന്ധിച്ച് പുറപ്പെടുവിക്കുന്ന മാർഗ്ഗ നിർദ്ദേശങ്ങൾ	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (R.T) No. 947/2020/DMD	Order	24-11-2020	Disaster Management	Disaster Management - കൊവിഡ് 19 നിർവ്യാപന/4പതിരായ 4പവർത്തനങ്ങളുമായി ബന്ധപ്പെട്ട് സാങ്കേതിക വിദ്യോദ്യാസ സ്ഥാപനങ്ങളും, തൊഴിലധിഷ്ഠിത പരിശീലന സ്ഥാപനങ്ങൾ മുതലായവയ്ക്ക് ഏർപ്പെടുത്തിയിരുന്ന നിയന്ത്രണങ്ങളിൽ ഇളവ് നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF
No./31/F2/2020/Health	Guidelines	19-11-2020	Health and Family welfare	Advisory with Regard to Re-Testing of Patients who have been cured of Covid 19.	Download PDF
G.O. (P) No. 63/2020/H&FWD	Order	13-11-2020	Health and Family welfare	അസാധാരണം	Download PDF
G.O. (R.T) No. 179/2020/LSGD	Order	12-11-2020	LSGD	തദ്ദേശസ്വയംഭരണ വകുപ്പ് - തദ്ദേശസ്വയംഭരണ സ്ഥാപനങ്ങളിലെ അഡ്മിനിസ്ട്രേറ്റീവ് കമ്മിറ്റികളുടെ 4പവർത്തനത്തിനുള്ള മാർഗനിർദ്ദേശങ്ങൾ പുറപ്പെടുവിച്ച ഉത്തരവാകുന്നു	Download PDF
Guideline	Guidelines	11-11-2020	Election Commission	കൊവിഡ് - 19 നിയന്ത്രണങ്ങളോടെ പഞ്ചായത്ത്, മുനിസിപ്പാലിറ്റി പോതു തിരഞ്ഞെടുപ്പ് - മാർഗ്ഗ നിർദ്ദേശങ്ങൾ	Download PDF
G.O. (R.T) No. 2125/2020/LSGD	Order	11-11-2020	LSGD	LSGD - നിലവിൽ കൊവിഡ് ഫെസ്റ്റ് ട്രേഡ് ട്രേഡ് 4ടീമേന്റ് സെന്ററുകളുടെ (CFLTC) മാനേജ്മെന്റ് കമ്മിറ്റി അധ്യക്ഷ സ്ഥാനത്തെ 12.11.2020 മുതൽ തദ്ദേശ സ്വയംഭരണ സ്ഥാപന അധ്യക്ഷനു പകരം അതത് തദ്ദേശ സ്വയംഭരണ സ്ഥാപന സേക്രട്ടറിയെ ഉൾപ്പെടുത്തിക്കൊണ്ട് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF
G.O. (P) No. 155/2020/FIN	Order	11-11-2020	Finance	Finance - ദേവസ്വകരാർ ഓവറന അടിസ്ഥാനത്തിൽ നിയമിതരായിട്ടുള്ള ജീവനക്കാർ കൊവിഡുമായി ബന്ധപ്പെട്ട് നിരീക്ഷണത്തിൽ പാകേണ്ട സാഹചര്യത്തിൽ അവർക്ക് ആ ദേവസ്വങ്ങളിലെ ഓവറനം അനുവദിക്കുന്നത് സബ്സിച്ച് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF
G.O. (R.T) No. 2105/2020/H&FWD	Order	10-11-2020	Health and Family welfare	Health & Family welfare Department - Covid 19 - Sabarimala Pilgrimage 2020-2021-Action plan by the Health Department - Approved - Orders issued.	Download PDF
G.O. (R.T) No. 2073/2020/LSGD	Order	04-11-2020	LSGD	LSGD - കൊവിഡ് 19 - 4പതുക സാഹചര്യം പരിഗണിച്ച് തദ്ദേശ സ്വയംഭരണ സ്ഥാപനങ്ങളിൽ നിന്നും നൽകി വരുന്ന വ്യാപാര ട്രേഡ്സ് ഉൾപ്പെടെയുള്ള വിവിധ ട്രേഡ്സുകൾ പുതുക്കുന്നതിനുള്ള അവസാന തീയതി 30.11.2020 വരെ ദീർഘിപ്പിച്ച് നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF
G.O.(Rt)No.888/2020/DMD	Order	04-11-2020	Disaster Management	Disaster Management Department - Covid19 - Rapid Antigen Testing of families Below Poverty Line and Front line Workers - Sanction accorded - Orders issued	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (P) No. 148/2020/ FIN	Order	04-11-2020	Finance	കൊവിഡ് - 19 മഹാമാരിയുടെ പശ്ചാത്തലത്തിൽ ഇടപാടുകാർ 4ടഷറിയിൽ നേരിട്ട് എത്താതെ തന്നെ ഓൺലൈനായി ഇടപാടുകൾ നടത്തുവാനുള്ള സൗകര്യം ഒരുക്കുന്നതിനുള്ള അനുമതി നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF
G.O. (R.T) No. 864/2020/DMD	Order	29-10-2020	Disaster Management	Disaster Management Department - Covid 19 - Extention of Phase 5 unloking of general lockdown - orders issued.	Download PDF
No./31/F2/2020/Health	Guidelines	28-10-2020	Health and Family welfare	Guidelines on the setting up of Post Covid Clinics (Covid 19 Convalescent Clinics)	Download PDF
I-10/22/2020 - W&M	Guidelines	28-10-2020	GOI	Extension of period up to 31.03.2021 for utilisation of the pre-printed packing material stock due to prevalent situation of COVID-19- reg	Download PDF
No./31/F2/2020/Health	Guidelines	28-10-2020	Health and Family welfare	Health Advisory on Sabarimala Pilgrimage in the context of COVID-19	Download PDF
G.O. (P) No. 140/2020/ FIN	Order	25-10-2020	Finance	അസാധാരണം	Download PDF
Gol - Income Tax Returns and Audit Reports	Press Release	24-10-2020	GOI	Extension of due date of furnishing of Income Tax Returns and Audit Reports	Download PDF
DD2/205/2020/LSGD	Guidelines	22-10-2020	LSGD	ത.സ്വ.ഭ.വ - മഹാത്മ ഗാന്ധി ദേശീയ ഹോമിൻ തൊഴിലുറപ്പ് പദ്ധതി - കൊവിഡ് 19 വ്യാപനത്തിന്റെ പശ്ചാത്തലത്തിൽ 65 വയസ്സിന് മുകളിൽ ഹായമുള്ള തൊഴിലാളികൾക്ക് തൊഴിലുറപ്പ് നൽകുന്നതിന് ഏർപ്പെടുത്തിയ വിലക്ക് പിൻവലിക്കുന്നത് സംബന്ധിച്ച്	Download PDF
G.O. (M.S) No. 161/2020/LSGD	Order	22-10-2020	LSGD	തദ്ദേശസ്വയംഭരണ വകുപ്പ് - കേരള ഇൻസ്റ്റിറ്റ്യൂട്ട് ഓഫ് ലോക്കൽ അഡ്മിനിസ്ട്രേഷൻ കില മൂന്നാം ഘട്ട വില്ല്യം എക്സ്റ്റൻഷൻ ഓഫീസർ ഇൻ സർവീസ് പരിശീലനം - കൊവിഡ് 19 ന്റെ പശ്ചാത്തലത്തിൽ പരിശീലനം ഓൺലൈൻ ആയി സംഘടിപ്പിച്ചതിനു സഭ്യേകരണവും ഓൺലൈൻ രീതിയിൽ പരീക്ഷ നടത്തുന്നതിന് കില ഡയറക്ടർ ജനറലിനു അനുമതിയും നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
LR IT Cell - 24012/20	Guidelines	20-10-2020	Revenue	ഇ-സർവ്വീസുകൾ നിലനിർത്താൻ ആവശ്യപ്പെട്ടുകൊണ്ട് നടപടി സ്വീകരിക്കുന്നത് സംബന്ധിച്ച്	Download PDF
No./31/F2/2020/Health	Guidelines	16-10-2020	Health and Family welfare	Advisory for Navarathri Festival Celebrations during Covid-19 Pandemic	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (R.T) No. 439/2020/DMD	Order	14-10-2020	Disaster Management	Disaster Management Department - Covid 19 - Functioning of Secretariat and other government offices at full strength - Clarification - Orders issued	Download PDF
No./31/F2/2020/Health	Guidelines	14-10-2020	Health and Family welfare	Revised Discharge Guidelines for Covid-19 Patients	Download PDF
G.O. (R.T) No. 1903/2020/LSGD	Order	14-10-2020	LSGD	Local Self Government Department - COVID 19: Standard Operating Procedure on Dead Body Management and guidelines for relatives of the deceased and Local Bodies in the State - Order Issued	Download PDF
DP 3/7189/2020/CRD	Order	12-10-2020	Rural Development	ഗ്രാമ വികസന വകുപ്പ് - കൊവിഡ് സെക്ടറിൽ ടീലൻ ടീമിന്റെ സേനാസേനകൾ സ്ഥാപിക്കുന്നത് സംബന്ധിച്ച്	Download PDF
G.O. (P) No. 134/2020/FIN	Order	12-10-2020	Finance	അസാധാരണം	Download PDF
Q.I.P.1/197357/2020/DGE	Circular	10-10-2020	General Education	പൊതുവിദ്യാഭ്യാസം - കുട്ടികളെ ബന്ധിച്ച് റിപ്പോർട്ട് ചെയ്ത് അംഗീകരിക്കുന്നതിന് - സംബന്ധിച്ച്	Download PDF
Base line Report	Guidelines	08-10-2020	Health and Family welfare	Results of community based sero-surveillance using rapid antibody test among special groups in Kerala - Baseline Report	Download PDF
G.O. (P) No. 131/2020/FIN	Order	07-10-2020	Finance	Finance Department - Use of e-TR-5 receipts in Government Departments - Extension of time limit for implementation of e-TR-5 receipts upto 31.03.2021 - approved - orders issued	Download PDF
G.O. (R.T) No. 1820/2020/LSGD	Order	05-10-2020	LSGD	തദ്ദേശസ്വയംഭരണ വകുപ്പ് - ജീവനക്കാർ കൊവിഡ് 19 കാലഘട്ടത്തിൽ പങ്കെടുത്തുള്ള വരുന്ന പാലിയേറ്റീവ് കെയർ നൽകാൻ ഇൻസെൻ്റീവ് അനുവദിക്കുന്നതിന് ആവശ്യമായ കൂടി തുടർച്ചാതയ്ക്കായി നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (RT) No. 3005/2020/GAD	Order	05-10-2020	GAD	GAD കൊവിഡ് 19 പരിഹാര പദ്ധതിയുടെ ഭാഗമായി ബന്ധപ്പെട്ട മാർഗനിർദ്ദേശങ്ങൾ പാലിയേറ്റീവ് സർക്കാർ അധിനിവേശ മന്ത്രിയുടെ അനുമതിയോടെ പാലിയേറ്റീവ് സർവീസുകൾ നൽകി ഉത്തരവാകുന്നു	Download PDF
PAN/11509/2020	Proceedings	05-10-2020	Panchayat	പഞ്ചായത്ത് വകുപ്പ് - കേരള സംസ്ഥാന പൊതുവികസന കമ്മീഷൻ - കൊവിഡ് 19 നിയന്ത്രണം നിലനിൽക്കേ ട്രാൻസ്പോർട്ട് സ്ഥാപനങ്ങളുടെയും സ്വകാര്യ ട്രാൻസ്പോർട്ട് സ്ഥാപനങ്ങളുടെയും നിയമാനുസൃതമല്ലാത്തതായുള്ള പാലിയേറ്റീവ് നിർദ്ദേശിക്കുന്നത് - ഉത്തരവ് പുറപ്പെടുവിക്കുന്നത് സംബന്ധിച്ച്	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (R.T) No. 1815/2020/LSGD	Order	04-10-2020	LSGD	Local Self Government Department - Strategy to be adopted to handle COVID-19 pandemic during the time when the elected representatives will be out of action on account of election campaign, and further in case of delay in conducting the elections, from 2020 November 11 onwards - 3 member team constituted - Orders Issued.	Download PDF
G.O. (R.T) No. 775/2020/DMD	Order	04-10-2020	Disaster Management	Disaster Management Department - Covid 19 - Phase 5 unlocking of general lock down and extension of lock down in containment zones-Orders issued.	Download PDF
G.O. (R.T) No. 774/2020/DMD	Order	01-10-2020	Disaster Management	Disaster Management Department - Advisory regarding public congregations and gatherings - Orders issued	Download PDF
No./31/F2/2020/Health	Guidelines	01-10-2020	Health and Family welfare	Amendment to the Health Care Worker Resource Management Guidelines for Centres Providing Covid-19 care.	Download PDF
No.40-3/2020-DM-I(A)	Order	30-09-2020	GOI	National Disaster Management Authority (NDMA) has directed the undersigned to issue an order to re-open more activities in areas outside the Containment Zones and to extend the lockdown in Containment Zones upto 31.10.2020.	Download PDF
G.O. (R.T) No. 5600/2020/FIN	Order	30-09-2020	Finance	Finance - ഓക്ടോബർ 19 - മഹാമാരി മൂലം സംഭവമായ 4പര്യായ സാഹചര്യത്തിൽ സംസ്ഥാന സർവ്വീസ് പെൻഷൻകാരുടെ/കുടുംബ പെൻഷൻകാരുടെ മസ്തിഷ്ക നശിപ്പിച്ചു നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF
SOP/Guidelines	Guidelines	30-09-2020	Home	SOP/Guidelines for Health and Safety protocols for Reopening of Schools and Learning with Physical/Social Distancing	Download PDF
G.O. (R.T) No. 768/2020/DMD	Order	29-09-2020	Disaster Management	Disaster Management Department - Covid 19 Pandemic -Imminent / Possible surge - Effective containment - Reinvigorating enforcement - Appointing Gazetted Officers of various Departments as Sector Magistrates & Covid Sentinels in local bodies - Orders issued	Download PDF
G.O. (R.T) No. 768/2020/DMD	Order	29-09-2020	Disaster Management	Disaster Management Department - Covid 19 Pandemic - Imminent/Possible surge - Effective containment - Reinvigorating enforcement - Appointing Gazetted Officers of various Departments as Sector Magistrates & Covid Sentinels in local bodies - Orders issued.	Download PDF
DMA2/767/2020-DMD	Circular	26-09-2020	Disaster Management	DMD - Covid 19 - Quarantine procedures for NRIs visiting the State - Clarification issued.	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
B1/30139/2019/SEC	Order	25-09-2020	Election Commission	കേരള സംസ്ഥാന തിരഞ്ഞെടുപ്പ് കമ്മീഷൻ - തദ്ദേശ സ്വയംഭരണ സ്ഥാപനങ്ങളിലേക്കുള്ള 2020 ലെ പോതു തിരഞ്ഞെടുപ്പ് - അന്തിമ വോട്ടർ പട്ടിക 4പസിദ്ധീകരിക്കൽ - തീയ്യത ഒക്ടോബർ 10ലേക്ക് നീട്ടുന്നത് - ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF
No. 33-04/2020-NDM-I	Proceedings	23-09-2020	Home	Item and Norms of assistance under State Disaster Response Fund (SDRF) for containment measures of COVID-19.	Download PDF
G.O. (R.T) No. 756/2020/DMD	Order	22-09-2020	Disaster Management	Disaster Management Department - Covid 19 - Functioning of Secretariat and other Government Offices at full strength - Orders issued.	Download PDF
G.O. (R.T) No. 1704/2020/LSGD	Order	22-09-2020	LSGD	LSGD - ലേഫ് മിഷൻ - ഗുണഭോക്തൃ പട്ടികയിൽ ഉൾപ്പെടാൻ കഴിയാതെ പോയ അർഹരായ ഗുണഭോക്താക്കളുടെ പട്ടിക തയ്യാറാക്കൽ - അപേക്ഷ സമർപ്പിക്കുന്നതിനുള്ള സമയം ദീർഘിപ്പിച്ച് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF
G.O. (R.T) No. 1695/2020/LSGD	Order	20-09-2020	LSGD	തദ്ദേശസ്വയംഭരണ വകുപ്പ്- കുടുംബശ്രീ ,സർക്കാർ ഓഫീസുകൾ കേട്ടിടങ്ങൾ വാഹനങ്ങൾ എന്നിവയുടെ അണുശുദ്ധീകരണ , ശുചീകരണ 4പവർത്തനങ്ങൾ കുടുംബശ്രീ മുഖേന നടപ്പാക്കുന്നതിന് അനുമതി നൽകിക്കൊണ്ടും മാർഗനിർദ്ദേശങ്ങൾ പുറപ്പെടുവിച്ചുകൊണ്ടും ഉത്തരവാകുന്നു	Download PDF
G.O. (R.T) No. 1688/2020/LSGD	Order	18-09-2020	LSGD	തദ്ദേശ സ്വയം ഭരണ വകുപ്പ് - കോവിഡ് 19 - 4പര്യേക സാഹചര്യം പരിഗണിച്ച് തദ്ദേശ സ്വയം ഭരണ സ്ഥാപനങ്ങളിൽ നിന്നും നൽകി വരുന്ന വ്യാപാര ലേന്സ് ഉള്പ്പടെയുള്ള വിവിധ ലേസൻസുകളെ പുതുക്കുന്നതിനുള്ള അവസാന തീയതി 30.09.2020 വരെ ദീർഘിപ്പിച്ച് നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF
G.O.(Rt)No.1684/2020/LSGD	Order	17-09-2020	LSGD	Local Self Government Department - COVID 19 - Containment activities of Noval Corona Virus Disease - Functioning of War Room in Secretariat - Nomination of Nodal Officer - Orders Issued	Download PDF
G.O.(Rt)No.2854/2020/GAD	Order	17-09-2020	GAD	GAD - Covid-19 - containment activities - SOP for registration of guest workers details in the covid19jagratha portal to ensure quarantine and quarantine formalities - SOP cancelled and modified - orders issued	Download PDF
G.O. (P) No. 55/2020/H&FWD	Order	16-09-2020	Health and Family welfare	ആരോഗ്യ കുടുംബക്ഷേമ വകുപ്പ് - >Health< - ജീവനക്കാര്യം - അന്ധികൃതാവധി - പുതുക്കിയ മാർഗ്ഗ നിർദ്ദേശങ്ങൾ സംബന്ധിച്ച് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF
G.O. (P) No. 55/2020/H&FWD	Order	16-09-2020	Health and Family welfare	ആരോഗ്യ കുടുംബക്ഷേമ വകുപ്പ് - >Health< - ജീവനക്കാര്യം - അന്ധികൃതാവധി - പുതുക്കിയ മാർഗ്ഗ നിർദ്ദേശങ്ങൾ സംബന്ധിച്ച് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (M.S) No. 171/2020/GAD	Order	15-09-2020	GAD	GAD - Census - 2021 - Extending the freezing of boundaries of administrative units during the period of the Census operations - order issued	Download PDF
G.O. (R.T) No. 1649/2020/LSGD	Order	14-09-2020	LSGD	LSGD - കോവിഡ് 19 - 4പതിരായ 4പവർത്തനങ്ങളുമായി ബന്ധപ്പെട്ട് 4പവർത്തനിക്കുന്ന ശുചീകരണ തോഴിലാളികൾക്ക് അവർ ഏർപ്പെടുന്ന തോഴിലിലേ Risk Factor പരിഗണിച്ച് 750/- രൂപ ദിവസ വേതനം അനുവദിക്കുന്നതിന് അനുമതി നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF
G.O. (M.S) No. 10/2020/GAD	Order	14-09-2020	P&ARD	പി.എസ്.സി മുഖേന നിയമന ശിപാർശ ലഭിച്ച് നിയമനാധികാരിയിൽ നിന്ന് നിയമന ഉത്തരവ് ലഭിച്ച ഉദ്യോഗാർത്ഥികളുടെ കോവിഡ് 19 വ്യാപനത്തിന്റേ പശ്ചാത്തലത്തിൽ ജോലിയിൽ 4പവർത്തനിക്കുന്നതിന് സമയം ദീർഘിപ്പിച്ചു നൽകുന്നത് സംബന്ധിച്ച് നിർദ്ദേശങ്ങളെ നൽകിയാണ് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 2793/2020/GAD	Order	14-09-2020	GAD	GAD-Covid 19 - Containment activities - SOP for registration of guest workers details in the covid 19 jagratha portal to ensure quarantine and quarantine formalities - orders issued	Download PDF
Post COVID management protocol	Guidelines	13-09-2020	Health and Family welfare	Post COVID management protocol	Download PDF
G.O. (R.T) No. 712/2020/DMD	Order	11-09-2020	Disaster Management	Disaster Management Department - Covid 19 (Corona) - Release of fund to the District Collector, Wayanad - Sanction accorded - Orders issued	Download PDF
4690/03/LA1/2020/KeSCPCR	Order	11-09-2020	Child Rights	സംസ്ഥാനത്തെ സി.ബി.എസ്.ഇ./ഐ.സി.എസ്.ഇ./ജവഹർ നവോദയ/കെ4(ന്റീയ വിദ്യാലയങ്ങളിലെ ഓൺലൈൻ ക്ലാസുകളുമായി ബന്ധപ്പെട്ട് താഴെപറയും 4പകാരം ഒരു ഇടക്കാല ഉത്തരവ് പുറപ്പെടുവിച്ച് ഉത്തരവാകുന്നു.	Download PDF
No.TRY/1317/2020-B3	Guidelines	09-09-2020	Treasury	45ഷറി വകുപ്പ്- കോവിഡ് 19 -വ്യാപനം- 45ഷറി വകുപ്പിലെ ഓഫീസുകളുടെ4പവർത്തനം- തുടർ മാർഗ്ഗ നിർദ്ദേശങ്ങളെ നൽകുന്നത് - സംബന്ധിച്ച്	Download PDF
G.O. (R.T) No. 570/2020/TD	Order	08-09-2020	Tax	നികുതി (എച്ച്) വകുപ്പ് - കേരള ടെക്സ്റ്റൈൽ ഫിനാൻഷ്യൽ എൻറർപ്രൈസസ് ലിമിറ്റേഡ് - കോവിഡ് 19 - മഹാമാരി കാരണം പൊതു വിദ്യാഭ്യാസം സാധ്യമാകാത്ത സാഹചര്യത്തിൽ വിദ്യാർത്ഥിവിദ്യാർത്ഥിനികളുടെ ഓൺലൈൻ പഠന സൗകര്യം ഒരുക്കുന്നതിനായി ആരംഭിച്ച സൂക്ഷ്മ സമ്പാദ്യ പദ്ധതിയായ കെ.എസ്.എഫ്.ഇ വിദ്യാഭ്യാസ - പരിഷ്കരിച്ച - ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
Guideline	Guidelines	08-09-2020	Health and Family welfare	SOP for partial reopening of Schools for students of 9th to 12th classes on a voluntary basis, for taking guidance from their teachers: In the context of COVID -19	Download PDF
G.O. (R.T) No. 1615/2020/LSGD	Order	07-09-2020	LSGD	തദ്ദേശ സ്വയം ഭരണ വകുപ്പ് - ജീവനക്കാര്യം - കോവിഡ് 19 - കാലഘട്ടത്തില് 4പവര്ത്തിച്ച് വരുന്ന പാലിയേറ്റീവി കേയര് നല്ലമാര്ക്ക് ഇന്സെന്റീവ് അനുവദിച്ച് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 691/2020/DMD	Order	01-09-2020	Disaster Management	Disaster Management Department - Covid 19- Regulation to contain the Novel Corona Virus Disease (Covid-19) - Phase 4 unlocking of general lock down and extension of lock-down in Containment Zones - Order Issued	Download PDF
No.40-3/2020-DM-I(A)	Guidelines	29-08-2020	Home	Ministry of Home Affairs (MHA)'s Order of even number issued today whereby guidelines on Unlock 4, for opening up of more activities in areas outside the Containment Zones have been issued.	Download PDF
No.40-3/2020-DM-I(A)	Guidelines	29-08-2020	Home	Guidelines for Phased Re-opening (Unlock 4)	Download PDF
G.O. (R.T) No. 690/2020/DMD	Order	27-08-2020	Disaster Management	Disaster Management Department - Advisory for flower traders and participants of flower arrangement for the onam season - clarification - order issued	Download PDF
G.O. (R.T) No. 2691/2020/GAD	Order	27-08-2020	GAD	GAD- Covid 19 - Containment activities - SOP and health advisories for short visit to other States by employees and people's representatives for official visits - orders issued	Download PDF
G.O. (R.T) No. 689/2020/DMD	Order	27-08-2020	Disaster Management	Disaster Management Department - Public transport system through out the State form 6 AM to 10 PM - Sanction accorded - Orders issued	Download PDF
TR1-000201/2020	Official Memorandum	27-08-2020	KSRTC	കേരള സ്റ്റേറ്റ് റോഡ് ട്രാൻസ്പോർട്ട് കോർപ്പറേഷൻ - സർവ്വീസ് ഓപ്പറേഷൻ കാര്യക്ഷമാക്കുന്നത് സംബന്ധിച്ച്	Download PDF
DMA2/577/2020-DMD	Circular	26-08-2020	Disaster Management	Disaster Management Department - Onam Celebrations during Covid 19 Pandemic - Guidelines	Download PDF
No./31/F2/2020/Health	Guidelines	25-08-2020	Health and Family welfare	Clarification Regarding Quarantine for NRK students appearing for NEET Exam 2020	Download PDF
No./31/F2/2020/Health	Guidelines	22-08-2020	Health and Family welfare	Covid-19 Contact Tracing and Quarantine Guidelines	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
No. B1-30139-2019-KSEC	Guidelines	19-08-2020	Election Commission	സംസ്ഥാന തിരഞ്ഞെടുപ്പ് കമ്മീഷൻ - 2020 ലെ പൊതു തിരഞ്ഞെടുപ്പ് - ഖാതുർപട്ടിക പുതുക്കുന്നത് - അധിക നിർദ്ദേശങ്ങള് - സംബന്ധിച്ച്	Download PDF
No.Rules.B/1/21/2020	Guidelines	18-08-2020	Finance	കൊവിഡ് 19 രോഗവുമായി ബന്ധപ്പെട്ടു 4പതുക ആകസ്മികവതി അനുവദിക്കുന്നത് സംബന്ധിച്ച്	Download PDF
G.O. (R.T) No. 813/2020/Labour	Order	17-08-2020	Labour	തോഴിലും നവപുണ്യവും വകുപ്പ് - കേരളത്തിലെ പുട്ടികിടക്കുന്ന തോട്ടങ്ങളിലെ തോഴിലാളികൾക്ക് സൗജന്യമായി ഓണകിറ്റ് വിതരണം ചെയ്യുന്നതിന് ഫെണ്ട് വിനിയോഗിക്കുന്നതിനുള്ള അനുമതി നൽകി - ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF
G.O. (R.T) No. 95/2020/ED	Order	17-08-2020	Energy	ഊർജ്ജ വകുപ്പ് - കൊവിഡ് 19 രോഗവ്യാപനം മൂലമുള്ള 4പയാസങ്ങൾ പരിഹരിക്കുന്നതിനുമായി ബന്ധപ്പെട്ട് ലോക്ക് ഡൗൺ കാലയളവിലെ വദ്യുതി ഉപഭോഗത്തിനുള്ള ചാർജ്ജിൽ ഇളവുകൾ നൽകുന്നതിന് കെ.എസ്.ഇ.ബി ലിമിറ്റേഡിന് അനുമതി നൽകി കോണ്ട് പുറപ്പെടുവിച്ച സർക്കാർ ഉത്തരവ് - ദേശീയ വരുത്തി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF
DDMA/01/2020/COVID/ CZ-43	Order	16-08-2020	Disaster Management	Covid 19 - Covid 19 Outbreak Control - Relaxation of the Coastal Critical Containment Zone in the coastal Region of Thiruvananthapuram district - Orders issued	Download PDF
No./31/F2/2020/Health	Guidelines	16-08-2020	Health and Family welfare	Covid 19 Sample Management inside a Virus Diagnostic Laboratory	Download PDF
No./31/F2/2020/Health	Guidelines	15-08-2020	Health and Family welfare	Covid -19 - Revised Testing Guidelines	Download PDF
No./31/F2/2020/Health	Guidelines	15-08-2020	Health and Family welfare	Covid-19 Treatment Guidelines for Kerala State	Download PDF
DM1/2717/2020(1)	Guidelines	15-08-2020	Disaster Management	Covid 19 - Cluster declaration - directions and procedures - order issued - Reg:	Download PDF
No./31/F2/2020/Health	Guidelines	14-08-2020	Health and Family welfare	Covid Protocol for the Independence Day Celebrations at the State Head Quarter and at the District Quarters	Download PDF
G.O. (R.T) No. 269/2020/TSM	Order	14-08-2020	Tourism	Tourism Department - crisis in the tourism industry due to the out break of COVID-19 Tourism Employment Support Scheme - Relief scheme - Approved - Orders Issued.	Download PDF
G.O. (R.T) No. 1486/2020/H&FWD	Order	12-08-2020	Health and Family welfare	Health & Family welfare department - Walk-in Covid-19 test facility in private laboratories - orders issued	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
T5-40634/2020/PHQ	Guidelines	11-08-2020	Police	Covid-19 Unlock 3.0 - Instructions based on the Video Conferencing - Regarding	Download PDF
G.O. (R.T) No. 2590/2020/RD	Order	11-08-2020	Revenue	റവന്യൂ വകുപ്പ് - മുഖ്യമന്ത്രിയുടെ ഭേദിതാശ്വാസനിധി കോവിഡ് 19 വ്യാപനത്തിന് പശ്ചാത്തലത്തിൽ നാട്ടിൽ എത്തി വിദേശത്തേക്ക് ജോലി സ്ഥലങ്ങളിലേക്ക് മടങ്ങിപ്പോകാൻ കഴിയാത്ത 4പവാസികൾക്ക് 5000 രൂപ വീതം ധനസഹായം മുഖ്യമന്ത്രിയുടെ ഭേദിതാശ്വാസ നിധിയിൽ നിന്നും നൽകുന്നതിനായി 50 കോടി രൂപ കൂടി നോർക്ക വുട്ടിന് അനുവദിച്ചുകൊണ്ട് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF
No.324.6.EPS.OT. 001.2020	Guidelines	11-08-2020	Election Commission	Broad Guidelines for Conduct of General Elections/Bye-Elections During Covid-19	Download PDF
G.O.(Rt)No.2464/2020/GAD	Order	11-08-2020	GAD	GAD Covid19 regulations to contain the Novel Corona Virus Disease (COVID19) regulations in the form of general lock down payment of hostel fee by students orders issued	Download PDF
G.O. (M.S) No. 140/2020/GAD	Order	10-08-2020	GAD	GAD-Covid 19 - Containment activities or Novel Corona Virus Disease (Covid-19) Lock-Down under the Disaster Management Act and connected activities -functioning of war room in Government Secretariat-restructuring of War Room - order issued	Download PDF
DMA2/627/2020-DMD	Circular	08-08-2020	Disaster Management	DMD-Cancellation of leave of all Revenue Staff posted for Covid Duty - Reg	Download PDF
G.O. (R.T) No. 596/2020/ID	Order	07-08-2020	Industries	Industries Department - Permission to operate Industries Manufacturing essential commodities during Lock Down - Directions - Orders issued	Download PDF
No. 103/Pol.5/2020/GAD	Circular	07-08-2020	GAD	National Day Celebrations - Independence Day 2020 - Adherence to the Guidelines - reg	Download PDF
G.O. (R.T) No. 218/2020/F&CS	Order	06-08-2020	Food & Civil Supplies	ഭക്ഷ്യ പൊതുവിതരണ വകുപ്പ് - 2020 ലെ ഓണത്തൊടനുബന്ധിച്ച് മുൻഗണനേതര വിഭാഗങ്ങൾക്ക് 10 കിലോഗ്രാം അരി വിതരണം ചെയ്യുന്നതിനും 4കിറ്റോക്കൽ കൺബേയിൻമേന്റ് സോണിൽ 5 കിലോഗ്രാം അരി വിതരണം ചെയ്യുന്നതിനും 56,0000 മെട്രിക് ടൺ അരി വിട്ടേടുക്കുന്നതിനും 126 കോടി രൂപ അനുവദിച്ചു - ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF
G.O. (R.T) No. 1456/2020/LSGD	Order	05-08-2020	LSGD	LSGD - കോവിഡ് മഹാമാരിയുടെ പശ്ചാത്തലത്തിൽ തദ്ദേശ ഭരണ സ്ഥാപനങ്ങളിലെ യോഗങ്ങൾ ഓൺലൈൻ ഉൾപ്പെടെയുള്ള മാർഗ്ഗങ്ങളിൽ ചേരുന്നതിന് അനുമതി നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (R.T) No. 1458/2020/LSGD	Order	05-08-2020	LSGD	LSGD - കൊവിഡ്-19 4പതിരായ നടപടികളുടെ ഭാഗമായി കേരള അതാഗാ മേഷിനറി കോർപ്പറേഷൻ ലിമിറ്റേഡ് (KAMCO) വികസിപ്പിച്ച പേഡൽ ഓപ്പറേറ്റേഡ് സാനിറ്റേഷൻ തദ്ദേശ സ്വയംഭരണ വകുപ്പിന് കീഴിലുള്ള സ്ഥാപനങ്ങളിൽ ഉപയോഗിക്കുന്നതിന് അനുമതി നൽകിക്കൊണ്ടുള്ള ഉത്തരവ് - ഭേദഗതി ചെയ്ത ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF
G.O. (R.T) No. 1453/2020/LSGD	Order	04-08-2020	LSGD	LSGD - Covid 19 - Prevention activities - Expert Data Management Team constituted - Orders issued.	Download PDF
G.O. (R.T) No. 1450/2020/LSGD	Order	04-08-2020	LSGD	LSGD - 2020-21 വാർഷിക പദ്ധതി - കൊവിഡ് മഹാമാരിയുടെ പശ്ചാത്തലത്തിൽ ഉത്പാദന മേഖലയിലെ ഗുണഭോക്താക്കളെ തേരത്തേക്കുന്നതിന് നിശ്ചയിച്ചിരുന്ന നടപടി 4കമങ്ങൾ സെവന മേഖലയ്ക്ക് കൂടി ബാധകമാക്കി - ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF
G.O. (R.T) No. 1453/2020/LSGD	Order	04-08-2020	LSGD	LSGD - Covid 19 - Prevention activities - Expert Data Management Team constituted - Order Issued	Download PDF
G.O. (R.T) No. 1447/2020/LSGD	Order	04-08-2020	LSGD	തദ്ദേശസ്വയംഭരണ വകുപ്പ് മഹാത്മാ ഗാന്ധി ദേശീയ ഗ്രാമീണ തൊഴിലുറപ്പ് പദ്ധതി പരക്കോട് ബ്ലോക്കിന് കെസിലുള്ള ഗ്രാമപഞ്ചായത്തുകളിൽ തൊഴിലുറപ്പ് തൊഴിലാളികൾക്ക് ജോലിക്കിടയിൽ കൊവിഡ് 4പതിരായം ഉറപ്പാക്കുന്നതിനുള്ള മാസ്ക് കയ്യുറകൾ എന്നിവ ലഭ്യമാകുന്നതിലേക്കായി ബ്ലോക്ക് പഞ്ചായത്തിന്റെ ജനറൽ പർപ്പസ് ഗ്രാൻഡിൽ നിന്നും തുക അനുവദിച്ചു നടപടി സഭ്യകരിച്ച ഉത്തരവാകുന്നു	Download PDF
G.O. (R.T) No. 4461/2020/FIN	Order	03-08-2020	Finance	Finance - ബഡ്ജറ്റ് വിഹിതം 2020-21 - വികസന ഫെണ്ടിന്റെ രണ്ടാം ഗഡു ബാക്കി തുക 4പാദേശിക സർക്കാരുകൾക്ക് അനുവദിച്ചു ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF
T5-40634/2020/PHQ	Guidelines	03-08-2020	Police	IN THE WAKE OF THE INCREASING NUMBER OF POSITIVE CASES PRIMARILY DUE TO CONTACT, IT HAS BEEN DECIDED, AT THE HIGHEST LEVEL, THAT THE POLICE WILL PLAY AN IMPORTANT ROLE IN BRINGING DOWN THE NUMBER OF CASES IN THE WHOLE STATE.	Download PDF
G.O. (P) No. 99/2020/FIN	Order	30-07-2020	Finance	കൊവിഡ് 19 മഹാമാരിയുടെ പശ്ചാത്തലത്തിൽ സർക്കാർ 4പദ്ധ്യാപിച്ചിരുന്ന വിവിധ ലോക്ക് ഡൗൺ കാലയളവുകളിൽ ജോലിക്ക് ഹാജരാകാൻ സാധിക്കാതിരുന്ന ദേവസ വേതന/കരാർ ജീവനക്കാർക്ക് 4പത്തു ദേവസങ്ങളിൽ ഡ്യൂട്ടിയായി പരിഗണിച്ച് വേതനം അനുവദിക്കുന്നതു സംബന്ധിച്ച് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF
G.O (Ms) No.135/2020/GAD	Order	30-07-2020	GAD	GAD-Covid-19 - regulation to contain the Novel Corona Virus Disease (COVID-19)- phase 3 unlocking of general lock down and extension of lock-down in Containment Zones	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
No./31/F2/2020/Health	Guidelines	29-07-2020	Health and Family welfare	Advisory for home isolation of asymptomatic covid-19 positive health care workers	Download PDF
No.40-3/2020-DM-I(A)	Guidelines	29-07-2020	Home	Guidelines for Phased Re-opening (Unlock 3)	Download PDF
No./31/F2/2020/Health	Guidelines	28-07-2020	Health and Family welfare	Covid 19 - Dedicated Management structures for coordinating Admission, Referrals & Inpatient Facilities	Download PDF
G.O. (M.S) No. 131/2020/GED	Order	27-07-2020	General Education	പൊതു വിദ്യാഭ്യാസം - ഹയർ സെക്കന്ററി വിദ്യാഭ്യാസം - പരീക്ഷ - രണ്ടാം വർഷ ഹയർ സെക്കന്ററി ഇംഗ്ലീഷ് പരീക്ഷയിൽ മൂന്ന് വിഷയങ്ങൾ വരെ ഇംഗ്ലീഷ് ചെയ്യുവാനുള്ള അനുവാദം നൽകിയ ഉത്തരവ് - റദ്ദ് ചെയ്ത ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
DDMA/01/2020/COVID/ Circular	Guidelines	27-07-2020	Disaster Management	കേരള സംസ്ഥാന ദുരന്ത നിവാരണ അതോറിറ്റി 4പസിഡീകരിച്ച കാലവർഷ-തുലാവർഷ മുന്നോക്ക, ദുരന്ത 4പതികരണ മാർഗ്ഗരേഖ, രണ്ടാം പതിപ്പ്	Download PDF
G.O. (R.T) No. 2373/2020/GAD	Order	27-07-2020	GAD	പൊതുഭരണ വകുപ്പ് - കോവിഡ് 19 - വ്യാപനം തടയുന്നതിനുള്ള 4പവർത്തനങ്ങൾ - കണ്ടെയ്ൻമെന്റ് സൊണുകളിൽ നിയന്ത്രണങ്ങൾ കർശനമായി പാലിക്കുന്നുവെന്ന് ഉറപ്പാക്കാൻ പോലീസ് വകുപ്പിന് കൂടുതൽ ചുമതലകൾ നൽകി കോണ്ട് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF
G.O. (R.T) No. 1409/2020/LSGD	Order	27-07-2020	LSGD	LSGD - കേരളത്തിലെ എല്ലാ പഞ്ചായത്തുകളിലും First Line Treatment Centre കളിൽ ആവശ്യമായ എണ്ണം കിടക്കകൾ വാങ്ങുന്നതിന് തദ്ദേശ ഭരണ സ്ഥാപനങ്ങൾക്ക് യഥേഷ്ടമതി നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
GEDN-J2/57/2020/DGE	Guidelines	27-07-2020	General Education	2020-21 അധ്യയന വർഷത്തെ സ്കൂളുകളിലെ തസ്തിക നിർണ്ണയം സംബന്ധിച്ച്	Download PDF
G.O. (Rt) No. 2373/2020/GAD	Order	27-07-2020	GAD	GAD കോവിഡ് 19 വ്യാപനം തടയുന്നതിനുള്ള 4പവർത്തനങ്ങൾ കണ്ടെയ്ൻമെന്റ് സൊണുകളിൽ നിയന്ത്രണങ്ങൾ കർശനമാക്കി പാലിക്കുന്നു എന്ന് ഉറപ്പാക്കാൻ പോലീസ് വകുപ്പിന് കൂടുതൽ ചുമതലകൾ നൽകിക്കോണ്ട് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
No./31/F2/2020/Health	Guidelines	24-07-2020	Health and Family welfare	Guidelines - CFLTCs - Planning and Management of Infrastructures and Admissions	Download PDF
PAN/9150/2020-E1(DP)	Guidelines	23-07-2020	Panchayat	കോവിഡ് 19 - 4പതിരായ 4പവർത്തനങ്ങള് - 4ഗ്രാമ പഞ്ചായത്തുകൾ മുഖാന്തിരം ഏറ്റെടുത്തെ 4പവർത്തനങ്ങൾ കാര്യക്ഷമമായി നടപ്പിലാക്കുന്നതിന് ജീവനക്കാരുടെ സാന്നിദ്ധ്യം ഉറപ്പു വരുത്തുന്നത്	Download PDF
G.O. (P) No. 97/2020/ FIN	Order	23-07-2020	Finance	Adhoc arrangements for paperless bill for salary claims for 6/2020 and 7/2020 by Departments Extension -Approved-Orders-Issued.	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
No.P2-737/2020/Try	Guidelines	23-07-2020	Treasury	കൊവിഡ് 19 രോഗത്തിന്റെ സമൂഹവ്യാപന ഭീഷിണി സംസ്ഥാനത്തെ നിലനിൽക്കുന്ന സാഹചര്യത്തിൽ പെൻഷൻകാരുടെ വാർഷിക ലഭ്യ മസ്റ്ററിങ് താൽക്കാലികമായി നീട്ടിവയ്ക്കുന്നതിനായുള്ള അറിയിപ്പുകൾ എല്ലാ 45പ്പറികൾക്കും നൽകുന്നത് സംബന്ധിച്ച്	Download PDF
No. NHM/2477/CONSULT(Training)/2020/SPMSU	Circular	22-07-2020	Health and Family welfare	Implementation of the self reporting format in all district . reg	Download PDF
GO (Rt) No.2333/2020/GAD	Order	22-07-2020	GAD	GAD- Covid-19- measures to contain the Novel Corona Virus Disease (COVID-19)- declaring Saturdays as holidays for Banks - orders issued.	Download PDF
G.O. (R.T) No. 1382/2020/LSGD	Order	21-07-2020	LSGD	2020-21 വാർഷിക പദ്ധതി - കൊവിഡ് 4പതിരായത്തിന്റെ മൂന്നാം ഘട്ട 4പവർത്തനങ്ങളുടെ ഭാഗമായി അടിയന്തിര ഓപ്പറേഷനുകൾ ഏറ്റെടുക്കുന്നതിന് അനുമതി നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 1379/2020/LSGD	Order	21-07-2020	LSGD	കൊവിഡ് 4പതിരായ പാർത്തനങ്ങളുടെ ഭാഗമായി Foot Operated Sanitizer / Dispenser എന്നിവ സിഡ്കോയിൽ നിന്നും വാങ്ങുന്നതിന് തദ്ദേശ സ്വയം ഭരണ സ്ഥാപനങ്ങൾക്ക് യഥേഷ്ടാനുമതി നൽകി ഉത്തരവാകുന്നു	Download PDF
No.31/f-2/2020/H&FW	Guidelines	21-07-2020	Health and Family welfare	Amendment to the Revised Discharge Guidelines for Covid 19 Patients dated 01/07/2020	Download PDF
G.O. (R.T) No. 199/2020/F&CSD	Order	21-07-2020	Food & Civil Supplies	കൊവിഡ് 19 - തിരുവനന്തപുരം ജില്ലയുടെ തീരദേശ മേഖല - അതീവ ജാഗ്രതാ 4പദേശമായി സമ്പൂർണ്ണ ലോക്ക്ഡൗൺ 4പദ്ധതിയിൽ സാഹചര്യത്തിൽ സൗജന്യ ഭക്ഷ്യധാന്യ വിതരണം സംബന്ധിച്ച്	Download PDF
No.TRY/2067/2020-F2	Guidelines	21-07-2020	Treasury	കൊവിഡ് - 19 പകർച്ച വ്യാധിയുടെ പശ്ചാത്തലത്തിൽ 45പ്പറി ഇടപാടുകളിൽ സ്വീകരിക്കേണ്ട 4കമീകരണങ്ങൾ	Download PDF
No.2/5/2020 - Public	Guidelines	20-07-2020	Home	Independence Day Celebration on 15th Aug 2020	Download PDF
5580/M2-MF/2020/KSHO	Circular	20-07-2020	Kudumbasree	സാമ്പത്തികമായി പിന്നോക്കം നിൽക്കുന്ന വിദ്യാർത്ഥികൾക്ക് ലാപ്ടോപ്പ് ലഭ്യമാകാനായി 6ക് എസ് എഫ് ഇ കുടുംബശ്രീ വഴി നടപ്പിലാക്കുന്ന "6ക് എസ് എഫ് ഇ വിദ്യാർത്ഥി " പദ്ധതി വിശദാംശങ്ങൾ പുറപ്പെടുവിക്കുന്നത് സംബന്ധിച്ച്	Download PDF
No.31/f-2/2020/H&FW	Guidelines	18-07-2020	Health and Family welfare	Advisory On Quarantine and COVID-19 Testing of Guest Workers Returning To KERALA	Download PDF
Reference Guide	Guidelines	18-07-2020	Health and Family welfare	കേരള പകർച്ചവ്യാധികളും,കൊവിഡ് 19 നിയന്ത്രണങ്ങൾ, 2020 ചട്ടങ്ങൾ	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (P) No. 94/2020/Fin	Order	17-07-2020	Finance	Deferment of Surrender of Earned leave - Extended Orders issued	Download PDF
RCC/DIR/PR002/2020	Guidelines	17-07-2020	RCC	കോരാന രോഗവ്യാപനം രൂക്ഷമായ പശ്ചാത്തലത്തിൽ കാൻസർ ചികിത്സയ്ക്കായി ആർ.സി.സി.യിൽ കർശന നിയന്ത്രണം	Download PDF
G.O. (R.T) No. 2297/2020/GAD	Order	17-07-2020	GAD	All the Banks in the State Shall Remain Closed on Saturdays, In Addition to the existing Holidays	Download PDF
G.O. (R.T) No. 1364/2020/LSGD	Order	16-07-2020	LSGD	കോവിഡ് ഫെസ്റ്റ് 1 ലൻ ട്രീറ്റ്മെന്റ് സെന്റർ(CFLTC) രൂപീകരണവും നടത്തിപ്പും സംബന്ധിച്ച പുതുക്കിയ വിശദമായ മാർഗ്ഗനിർദ്ദേശങ്ങൾ പുറപ്പെടുവിക്കുന്നു	Download PDF
J3/5524/2019	Circular	16-07-2020	Panchayat	കോവിഡ് 19 - വ്യാപനത്തിന്റെ പശ്ചാത്തലത്തിൽ പഞ്ചായത്ത് ഓഫീസ് 4പവർത്തനങ്ങൾ ക്രമീകരിക്കുന്നത് - മാർഗ്ഗ നിർദ്ദേശങ്ങൾ	Download PDF
G.O. (R.T) No. 413/2020/F&P	Order	16-07-2020	Fisheries	തീരദേശത്ത് കോവിഡ് 19 അതിവ്യാപന മേഖലകൾ കണ്ടെയ്ൻമെന്റ് റെഗുലേഷനുകളായി 4പവ്യാപിച്ചിട്ടുള്ള സാഹചര്യത്തിൽ മത്സ്യബന്ധനം , മത്സ്യ വിൽപന എന്നിവയ്ക്ക് നിയന്ത്രണങ്ങൾ സംബന്ധിച്ച് മാർഗ്ഗരേഖ	Download PDF
G.O. (R.T) No. 623/2020/DMD	Order	15-07-2020	Disaster Management	COVID 19 (nCorona) - Release of fund to District Collectors for setting up of the Covid Firstline Treatment Centres	Download PDF
No.B3-1317/2020/Try	Guidelines	14-07-2020	Treasury	കോവിഡ് 19 വ്യാപനം 4ട്രഷറി ഓഫീസുകളുടെ 4പവർത്തനം - മാർഗ്ഗ നിർദ്ദേശങ്ങൾ	Download PDF
No.31/f-2/2020/H&FW	Guidelines	14-07-2020	Health and Family welfare	Sentinel Surveillance in Coastal, Slum & Tribal Areas	Download PDF
DCKLM/1827/2020-DM2	Order	13-07-2020	Collectorate	Kollam Intensified lockdown measures in Coastal areas	Download PDF
G.O. (R.T) No. 607/2020/DMD	Order	13-07-2020	Disaster Management	Deputing IAS Officers to assist District Collectors for setting up and operationalizing covid Firstline Treatment Centers (CFLTSS) and Reverse Quarantine Facility (RQF)	Download PDF
G.O. (R.T) No. 2237/2020/GAD	Order	12-07-2020	GAD	കോവിഡ് 19 - വ്യാപനം തടയുന്നതിനുള്ള 4പവർത്തനങ്ങളും തിരുവനന്തപുരം കോർപ്പറേഷൻ പരിധിയിലെ സർക്കാർ സ്ഥാവനങ്ങളുടെയും ഓഫീസുകളുടെയും 4പവർത്തനങ്ങളുമായി ബന്ധപ്പെട്ട ക്രമീകരണങ്ങൾ	Download PDF
DDMA/01/2020/COVID/ CZ-14 (6)	Order	12-07-2020	Disaster Management	Covid 19 - nCorona Virus Outbreak Control - Containment Zone Declaration Directions and Procedures - Order Issued	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
DCKLM/1827/2020 - DM2	Order	10-07-2020	Collectorate	കോല്ലം ജില്ലയിലെ കടലാശ മത്സ്യ ബന്ധനം നിരോധിച്ച് ഉത്തരവുകുന്നത്	Download PDF
DCKLM/1827/2020 - DM2	Order	10-07-2020	Collectorate	കോല്ലം ജില്ല അന്യ സംസ്ഥാന തൊഴിലാളികളുടെ ക്വാറന്റയിൻ	Download PDF
G.O. (P) No. 91/2020/Fin	Order	03-07-2020	Finance	പൊതു മെഖല/സ്വയം ഭരണ സ്ഥാപനങ്ങളിലെ ജീവനക്കാരുടെ ശബള വിഹിതം സർക്കാരിന്റേ കൊവിഡ് 4പവർത്തനങ്ങൾക്കായി കിഴിവ് ചെയ്യുന്നത് സംബന്ധിച്ച് - ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF
G.O. (R.T) No. 1235/2020/H&FWD	Order	02-07-2020	Health and Family welfare	Health & Family Welfare Department - Covid 19 - Public Private Partnership for Covid 19 testing - Orders issued	Download PDF
G.O. (M.S) No. 128/2020/GAD	Order	02-07-2020	GAD	കൊവിഡ് 19 - വ്യാപനം തടയുന്നതിനുള്ള 4പവർത്തനങ്ങള് - സംസ്ഥാന സർക്കാർ ഓഫീസുകളുടെയും / സ്ഥാപനങ്ങളുടെയും 4പവർത്തനം - പുതുക്കിയ മാർഗ്ഗ നിർദ്ദേശങ്ങൾ	Download PDF
G.O. (R.T) No. 1236/2020/H&FWD	Order	02-07-2020	Health and Family welfare	Covid 19 - Private Laboratory - Covid 19 Test - rate Fixed - Order Issued	Download PDF
No.31/f-2/2020/H&FW	Order	02-07-2020	Health and Family welfare	Addendum to Advisory on Testing of expatriates screened positive for IGM at Airport	Download PDF
G.O. (P) No. 35/2020/H&FWD	Order	02-07-2020	Health and Family welfare	Kerala Epidemic Diseases Ordinance 2020 - Additional Regulations	Download PDF
TR2-000223/2020	Order	02-07-2020	KSRTC	കൊവിഡ് 19 - മഹാമാരി നിലനിൽക്കുന്ന സാഹചര്യത്തിൽ നിരക്ക് വർദ്ധന 2020 - നടപ്പിലാക്കുന്നത് സംബന്ധിച്ച്	Download PDF
No. CDN1/41/2020/GAD	Circular	02-07-2020	GAD	കേരളത്തിലെ എല്ലാ സർക്കാർ വകുപ്പുകളും വിദ്യാഭ്യാസ സ്ഥാപനങ്ങളും ഖീദി ബോർഡിൽ നിന്നും മാസ്ക് വാങ്ങുന്നത് സംബന്ധിച്ച്	Download PDF
Guideline	Order	02-07-2020	Home	Revised guidelines for Home Isolation of very mild/pre-symptomatic/asymptomatic COVID-19 cases	Download PDF
No.MS 1/264/2020/GAD	Circular	02-07-2020	GAD	കൊവിഡ് 19 - ന്റ്വ്യാപനവുമായി ബന്ധപ്പെട്ട് ഭരണ സിരാകെ4ന്ദ്രമായ ഗവ. സേ4കട്ടെറിയേറ്റിൽ പാലിക്കെണ്ട മുൻകരുതലുകൾ	Download PDF
DCTSR/14476/2019-H4	Order	02-07-2020	Collectorate	Thrissur District Containment Zones	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
No.31/f-2/2020/H&FW	Guidelines	02-07-2020	Health and Family welfare	Covid 19 Virus Outbreak Control and Prevention State Cell , Instruction to District Surveillance offers on Preparing A Contact Map of Cases from Local Transmission	Download PDF
No.SS1/236/2020/GAD	Circular	01-07-2020	GAD	കൊവിഡ് 19 - നിർവ്യാപനവുമായി ബന്ധപ്പെട്ട് ജീവനക്കാർ അന്യ ജില്ലകളിലുള്ള സർക്കാർ ഓഫീസുകളിൽ പാജരാകുന്നതിന് പകരം ജീവനക്കാർ താമസ്സിക്കുന്ന ജില്ലകളിൽ ജോലി ചെയ്യുന്നതിനുള്ള മാർഗ്ഗ നിർദ്ദേശങ്ങൾ	Download PDF
G.O. (Rt.)No.2173/2020/GAD	Order	01-07-2020	GAD	GAD- Novel Corona Virus disease (Covid-19)containment activities- - Functioning of War Room- Extended - Orders issued	Download PDF
G.O. (M.S) No. 127/2020/GAD	Order	30-06-2020	GAD	GAD - Covid-19 - regulations to contain the Novel Corona Virus (COVID-19) - unlocking of general lock down phase -2 and extension of lock down in containment zones - orders issued.	Download PDF
No.PAN/8686/2020-DBT1(DP)	Guidelines	30-06-2020	Panchayat	മാസ്റ്ററിങ്ങ് - അക്ഷയ കേന്ദ്രങ്ങളിലെ തിരക്കും / തദ്ദേശ സ്വയംഭരണ സ്ഥാപനങ്ങളിലെ തിരക്കും ഒഴിവാക്കുന്നത് സംബന്ധിച്ച്	Download PDF
Guideline	Guidelines	30-06-2020	Health and Family welfare	STANDARD OPERATING PROCEDURE (SOP) FOR HEALTH CARE IN COVID-19 FIRST LINE TREATMENT CENTRES (CFLTC)	Download PDF
No.40-3/2020-DM-I(A)	Order	29-06-2020	Home	Guideline on Unlock 2	Download PDF
N.M.A 1/9375/2019/ D.G.E	Guidelines	29-06-2020	General Education	ഉച്ചഭക്ഷണ പദ്ധതി - ഗുണഭോക്താക്കളായ കുട്ടികൾക്ക് ഭക്ഷ്യ സുരക്ഷ അലവൻസ് - ഭക്ഷ്യ കിറ്റ് വിതരണം - മാർഗ്ഗ നിർദ്ദേശങ്ങൾ	Download PDF
G.O. (R.T) No. 1278/2020/LSGD	Order	29-06-2020	LSGD	കൊവിഡ് 19 - വ്യാപനം തടയുന്നതിന് സംസ്ഥാനത്തെ ലോക്ക്ഡൗൺ ഏർപ്പാടുത്തിയ കാലയളവിൽ തദ്ദേശസ്വയംഭരണ സ്ഥാപനങ്ങളുടെയും വിക,ന അതോറിറ്റികളുടെയും ഉടമസ്ഥതയിലുള്ളതും ലോക്ക്ഡൗൺ കാരണം തുറന്ന് 4പവർത്തിക്കാൻ സാധിക്കാത്തതുമായ സ്ഥാപനങ്ങളുടെ വാടക ഇളവ് നൽകുന്നതിന് തീരുമാനമെടുക്കാൻ തദ്ദേശസ്വയംഭരണ സ്ഥാപനങ്ങളെയും വികസന അതോറിറ്റികളെയും അനുവദിച്ചുകൊണ്ട് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
DMC.3-391/2020	Order	29-06-2020	Collectorate	കൊവിഡ് 19 - മൊഗവ്യാപനം തടയുന്നത് - ആലപ്പുഴ ജില്ലയിലെ കാർത്തികപ്പള്ളി താലൂക്കിലെ കായംകുളം നഗരസഭ വാർഡ് നം-4,9 എന്നീ വർഡുകൾ കണ്ടെയ്ൻമെന്റ് ഷോൺ ആക്കുന്നത് / ക്ലസ്റ്റർ ക്വാന്റിയിൻ നടപടികൾ സ്വീകരിക്കുന്നത്	Download PDF
No. IT-B1/48/2020-ITD	Order	29-06-2020	Home	Covid 19- Security of Sensitive Personally identifiable Information - Guidelines	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (R.T) No. 353/2020/ID	Order	28-06-2020	Industries	കൊവിഡ് 19 ന്റെ പശ്ചാത്തലത്തിൽ സംസ്ഥാനത്തെ ടേക്നിക്കൽ മെഖലയുടെ പുനരുദ്ധാരണത്തിനുള്ള 4പതുക പാക്കേജിനു അംഗീകാരം നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
DCMPM/1734/2020-DM1	Order	28-06-2020	Collectorate	രോഗനിർവ്യാപന 4പതിരായ ലഘൂകരണ 4പവർത്തനങ്ങള് - ലോക്ക് ഡൗൺ - കർശന നിയന്ത്രണങ്ങൾ 4പഖ്യാപിച്ച ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
DDMA/01/2020/COVID/ CZ-8	Order	26-06-2020	Health and Family welfare	nCorona Virus Outbreak Control - Containment Zone declaration - directions and procedures - Orders issued - reg.	Download PDF
G.O. (M.S) No. 22/2020/ DMD	Order	26-06-2020	Panchayat	Guidelines for the payment of expenditure of institutional quarantines (IQs) and relief expenditure of migrant laborers - sanction accorded	Download PDF
G.O. (R.T) No. 80/2020/ LSGD	Order	26-06-2020	Energy	കൊവിഡ് - 19 രോഗവ്യാപനം മുഖേനയുള്ള 4പയാസങ്ങൾ പരിഹരിക്കുന്നത് - ലോക്കൗൺ സമയത്തെ 1വദേയുതി ഉപഭോഗത്തിനുള്ള ചാർജ്ജ് - ഇളവുകൾ നൽകുന്നതിന് കെ.എസ്.ഇ.ടി ലിമിറ്റേഡിന് അനുമതി നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (M.S) No. 21/2020/ DMD	Order	25-06-2020	Disaster Management	Guidelines for the payment of expenditure of institutional quarantines and relief expenditure for migrant labourers	Download PDF
G.O. (R.T) No. 1266/2020/LSGD	Order	25-06-2020	LSGD	അയ്യൻകാളി നഗരതോഴിലുറപ്പ് പദ്ധതിക്ക് കീഴിൽ 2018-19 സാമ്പത്തിക വർഷത്തിൽ 100 ദിവസം തോഴിലേടുത്തെ കുടുംബങ്ങൾക്ക് കൊവിഡ് മഹാമാരിയുടെ 4പതുക സാഹചര്യം കണക്കിലെടുത്ത് 4പതുക സഹായം അനുവദിച്ചു ഉത്തരവാകുന്നു.	Download PDF
G.O.(Rt) No.2088/2020/ GAD	Order	25-06-2020	GAD	General Administration Department - COVID-19 - arrival of Pravasis - supervising the arrangement at airports - officers deputed - orders issued	Download PDF
G.O.(Rt.) No.2066/2020/ GAD	Order	24-06-2020	GAD	GAD- Covid-19- Containment activities of Novel Corona Virus (COVID-19)- SOPs for reopening of various sectors after Lock Down- SOP for opening of places of worshipClarification issued.	Download PDF
G.O. (R.T) No. 380/2020/NORKA	Order	24-06-2020	NORKA	COVID-19 testing - Issuance of consent letter to operate chartered flights - conditions for returnees - Orders issued.	Download PDF
G.O. (R.T) No. 843/2020/HED	Order	23-06-2020	Higher Education	കൊളേജ് വിദ്യാഭ്യാസം - ജീവനകാര്യം - കൊളേജ് വിദ്യാഭ്യാസ വകുപ്പിന് കീഴിലുള്ള ഹോസ്റ്റലുകൾ വിദ്യാർത്ഥികൾക്കായി ഏഴ് ദിവസത്തെക്ക് മാത്രം തുറന്ന് 4പവർത്തിക്കുന്നതിന് അനുവാദം നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
1492204/S.F.C-B2/2020/Fin	Order	23-06-2020	Finance	സാമൂഹ്യ സുരക്ഷ / ക്ഷേമ നിധി ബോർഡ് പെൻഷൻ മാസ്റ്ററിംഗിനായി സമയം അനുവദിക്കുന്നത് സംബന്ധിച്ച്	Download PDF
G.O. (R.T) No. 1241/2020/LSGD	Order	23-06-2020	LSGD	കൊവിഡ് 19 പശ്ചാത്തലത്തിൽ ഓരോ സ്റ്റാഫ് മെമ്പ്ലിനെ എല്ലാ പി.എച്ച്.സി കളിലും , സി.എച്ച്.സി കളിലും നിയമിക്കുന്നതിന് അനുമതി നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O.(Rt)No.2037/2020/GAD	Order	23-06-2020	GAD	GAD Covid19 containment activities SOPs and Health advisories for short visit to the State Orders issued	Download PDF
E-32099/4/CYBER ALERT/EDP CELL/39741/2020-1265-(E)	Order	21-06-2020	Health and Family welfare	CYBER ALERT:REG	Download PDF
G.O. (R.T) No. 369/2020/NORKA	Order	19-06-2020	NORKA	Covid 19 - Containment Activities - Advance Registration of Details of NRIs in Covid 19 Jagratha Portal	Download PDF
Notification	Order	19-06-2020	Home	Conduct of Elections (Amendment) Rules,2020	Download PDF
G.O.(Ms) No.119/2020/GAD	Order	19-06-2020	GAD	General Administration Department - COVID-19 containment activities - exempting Sunday, the 21st June, 2020 from lock down - orders issued	Download PDF
G.O(Ms) No 116/2020/GAD	Order	18-06-2020	GAD	GAD- Regulation to contain COVID-19 pandemic - General lock down order - lifting of regulations regarding indoor shooting of cinema/television - revised - orders issued	Download PDF
G.O. (M.S) No. 117/2020/GAD	Order	18-06-2020	GAD	GAD കൊവിഡ് 19 വ്യാപനം തടയുന്നതിനുള്ള 4പവർത്തനങ്ങൾ സംസ്ഥാന സർക്കാർ ഓഫീസുകളുടെയും സ്ഥാപനങ്ങളുടെയും 4പവർത്തനം - മാർഗനിർദ്ദേശങ്ങൾ പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (M.S) No. 19/2020/DMD	Order	18-06-2020	Disaster Management	Covid 19 - Standard Operating Procedure for Institutional Quarantine in Residential Facilities and Dwelling Units - Sanction Accorded - Order Issued	Download PDF
DCTSR/14476/2020-H4	Order	16-06-2020	Collectorate	തൃശ്ശൂർ ജില്ല - കണ്ടെയ്ൻമെന്റ് സോണുകൾ 4പവ്യാപിച്ച് നിയന്ത്രണമാർഗ്ഗ നിർദ്ദേശങ്ങൾ നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
No.D.C.1/258/2020/LSGD	Circular	16-06-2020	LSGD	കൊവിഡ് 19 - വ്യാപനം തടയുന്നതിനുള്ള 4പവർത്തനങ്ങള് - വിവിധ ആവശ്യങ്ങൾക്കായി തദ്ദേശ സ്വയംഭരണ സ്ഥാപനങ്ങളിൽ എത്തുന്ന പൊതുജനങ്ങൾക്കുള്ള നിർദ്ദേശങ്ങൾ	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
No.DA1/113/2020/LSGD	Circular	15-06-2020	LSGD	കൊവിഡ് 4പതിരായ 4പവർത്തനങ്ങളിൽ - ആർ.ആർ.ടി വാർഡ് സമിതികളിൽ - റോട്ടേഷനും തുടർ പരിശീലനവും സംബന്ധിച്ച്	Download PDF
G.O. (R.T) No. 1880/2020/GAD	Order	14-06-2020	GAD	COVID-19 containment activities- SOPs and Health advisories for short visit to the State- Orders issued	Download PDF
G.O. (R.T) No. 1515/2020/LSGD	Order	14-06-2020	LSGD	തദ്ദേശസ്വയംഭരണ വകുപ്പ് കൊവിഡ് 19 ന്റെ പശ്ചാത്തലത്തിൽ ഹാർബർ മാനേജ്മെന്റ് ട്രസ്റ്റിസറ്റിയുടേയല്ലാത്ത ഫെഷ് ലാൻഡിംഗ് സെന്ററുകളും മത്സ്യ മാർക്കറ്റുകളും പുനരാരംഭിക്കുന്നത് സംബന്ധിച്ച് തദ്ദേശസ്വയംഭരണ സ്ഥാപനങ്ങൾക്കുള്ള - മാർഗരവ - അംഗീകരിച്ച -ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (M.S) No. 114/2020/GAD	Order	13-06-2020	GAD	COVID-19 containment activities- Exemption for travel of devotees and students from Lock down on sundays- Orders issued.	Download PDF
G.O. (R.T) No. 1877/2020/GAD	Order	13-06-2020	GAD	കൊവിഡ് 19 വ്യാപനം തടയുന്നതിനുള്ള 4പവർത്തനങ്ങളിൽ - സംസ്ഥാനത്തെ വാണിജ്യ, വാണിജ്യേതര സ്ഥാപനങ്ങൾ പാലിക്കണ്ട ആരോഗ്യ മാർഗ്ഗ നിർദ്ദേശങ്ങൾ	Download PDF
No.4341/H1/2020/KSHO	Guidelines	13-06-2020	Kudumbasree	സുഭിക്ഷ കേരളം പദ്ധതി - കുടുംബശ്രീ കാർഷിക 4പവർത്തനങ്ങളിൽ - സംയോജനം	Download PDF
G.O. (R.T) No. 1131/2020/LSGD	Order	13-06-2020	LSGD	Covid -19 വ്യാപനത്തിന്റെ പശ്ചാത്തലത്തിൽ തിരുവനന്തപുരം വികസന അതോറിറ്റിയുടെ ഉടമസ്ഥതയിലുള്ള കേട്ടിടങ്ങൾക്ക് പലിശ, പിഴ പലിശ എന്നിവ ഇല്ലാതെ വാടക അടയ്ക്കുന്നതിന് 05/07/2020 വരെ സമയം അനുവദിച്ചു ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
Q.I.P.1/9141/2020/DGE	Order	12-06-2020	General Education	ഓൺലൈൻ ക്ലാസ്സ് - തുടർ മാർഗ്ഗനിർദ്ദേശങ്ങൾ പുറപ്പെടുവിക്കുന്നത് സംബന്ധിച്ച്	Download PDF
G.O. (R.T) No. 1114/2020/LSGD	Order	12-06-2020	LSGD	ഓൺലൈൻ പഠന സൗകര്യത്തിനായി വിദ്യാർത്ഥികൾക്ക് ടെലിവിഷൻ / ലാപ്ടോപ്പ് / കമ്പ്യൂട്ടർ എന്നിവ വാങ്ങുന്നതിന് തദ്ദേശ സ്ഥാപനങ്ങളുടെ ഫണ്ട് ഉപയോഗിക്കുന്നതിന് അനുമതി നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF
G.O. (M.S) No. 19/2020/PEAD	Order	12-06-2020	Finance	2020-2021 വാർഷിക പദ്ധതി - കൊവിഡ് 19 മഹാമാരി കണക്കിലെടുത്ത് നടപ്പ് സൂചനാപരമായ വർഷത്തെ രണ്ട് അർദ്ധവാർഷികങ്ങളായി തിരിച്ച് പദ്ധതികളുടെ മുൻഗണനാക്രമം ചിട്ടപ്പെടുത്തി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (R.T) No. 1128/2020/LSGD	Order	12-06-2020	LSGD	തദ്ദേശസ്വയംഭരണ വകുപ്പ്- കോവിഡ് 19 പശ്ചാത്തലത്തിൽ പോതു വിദ്യാഭ്യാസ വകുപ്പ് നടപ്പാക്കുന്ന സാങ്കേതിക വിദ്യയ്ക്ക് അടിസ്ഥാനമാക്കിയിട്ടുള്ള പഠന പരിപാടി "ഫെസ്റ്റ് ബേൽ " എല്ലാ കുട്ടികൾക്കും ലഭ്യമാക്കുന്നതിന് തദ്ദേശസ്വയംഭരണ സ്ഥാപനങ്ങൾ സ്വീകരിക്കേണ്ട നടപടികൾ സംബന്ധിച്ച് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 1101/2020/LSGD	Order	11-06-2020	LSGD	കോവിഡ് 19 4പതിരായത്തിന്റേ ഭാഗമായി കേരള ആഘാത മേഖലയിലെ കോർപ്പറേഷൻ ലിമിറ്റേഡ് (KAMCO) വികസിപ്പിച്ച പേഡൽ ഓപ്പറേറ്റേഡ് സാനിറ്റേഷൻ തദ്ദേശസ്വയംഭരണ വകുപ്പിന് കീഴിലുള്ള സ്ഥാപനങ്ങളിൽ ഉപയോഗിക്കുന്നതിന് അനുമതി നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 3510/2020/FIN	Order	10-06-2020	Finance	നിയോജകമണ്ഡല ആസ്തി വികസന പദ്ധതി (LAC ADS) / എം.എൽ എ മാരുടെ 4പതുക വികസന നിധി (MLA SDF) - COVID 19 ന്റെ പശ്ചാത്തലത്തിൽ പോതു വിദ്യാഭ്യാസ വകുപ്പ് ആരംഭിച്ചിട്ടുള്ള ഓൺലൈൻ ക്ലാസുകൾ ലഭ്യമാക്കാൻ വിദ്യാർത്ഥികൾക്ക് പഠന സംവിധാനം ഒരുക്കുന്നതിനായി ആസ്തി വികസന ഫെണ്ടും 4പതുക വികസന നിധിയും വിനിയോഗിക്കുന്നതിന് അനുമതി നൽകി ഉത്തരവാകുന്നു	Download PDF
G.O. (R.T) No. 762/2020/HED	Order	10-06-2020	Higher Education	കോവിഡ് 19 വ്യാപനത്തിന്റേ പശ്ചാത്തലത്തിലുണ്ടായ സാമ്പത്തിക 4പതിസന്ധി - സംസ്ഥാനത്തെ 64പാഠശാലകളിൽ കോളേജുകൾ ഉൾപ്പെടെയുള്ള ഉന്നത വിദ്യാഭ്യാസ സ്ഥാപനങ്ങളിലെ വിദ്യാർത്ഥികളുടെ 4പദവശന ഫീസ് വർദ്ധനവ് / അധ്യാപക - അന്യധ്യാപക ജീവനക്കാരുടെ ശമ്പളവും / ഓണററിയവും വിതരണം ചെയ്യുന്നത് സംബന്ധിച്ച് മാർഗ്ഗ നിർദ്ദേശങ്ങൾ	Download PDF
No.DC1/222/2020/LSGD	Circular	10-06-2020	LSGD	കോവിഡ് 19 - മാലിന്യ സംസ്കരണവുമായി ബന്ധപ്പെട്ട തദ്ദേശ സ്വയംഭരണ സ്ഥാപനങ്ങളുടേയും സേകട്ടറി	Download PDF
G.O. (M.S) No. 112/2020/GAD	Order	07-06-2020	GAD	കോവിഡ് 19 - വ്യാപനം തടയുന്നതിനുള്ള 4പദവശനങ്ങളെ - സംസ്ഥാന സർക്കാർ ഓഫീസുകളുടെയും / സ്ഥാപനങ്ങളുടെയും 4പദവശനം സംബന്ധിച്ച് നാളിതുവരെ പുറപ്പെടുവിച്ചിട്ടുള്ള എല്ലാ സർക്കാർ ഉത്തരവുകളും സർക്കുലറുകളും പരിഷ്കരിച്ചുകൊണ്ട് പുതിയ മാർഗ്ഗരേഖ നിർദ്ദേശങ്ങൾ	Download PDF
M.3484/2020	Guidelines	06-06-2020	Cochin Devasam Board	കോച്ചിൻ ദേവസ്വം ബോർഡിന്റേ കീഴിലുള്ള ക്ഷേത്രങ്ങളിൽ ഭക്തർക്ക് 4പദവശനം അനുവദിക്കുന്നത് സംബന്ധിച്ച്	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (R.T) No. 1062/2020/LSGD	Order	05-06-2020	LSGD	കൊവിഡ് 19 - 4പര്യായ സാഹചര്യം പരിഗണിച്ച് തദ്ദേശസ്വയംഭരണ സ്ഥാപനങ്ങളിലെ വസ്തു നികുതി പിഴകൂടാതെ അടയ്ക്കുന്നതിനും വ്യാപാര ലേസൻസ് ഉൾപ്പെടെയുള്ള വിവിധ ലേസൻസുകൾ പുതുക്കുന്നതിനും വിനോദ നികുതി അടയ്ക്കുന്നതിനുമുള്ള അവസാന തീയതി 30.06.2020 വരെ ദീർഘിപ്പിച്ച് നൽകിയും തദ്ദേശസ്വയംഭരണസ്ഥാപനങ്ങളുടെ ഉടമസ്ഥയിലുള്ള കെട്ടിടങ്ങളുടെ വാടക കുടിശ്ശിക പിഴ ഒഴിവാക്കി അടയ്ക്കുന്നതിനുള്ള സമയ പരിധി 05.07.2020 വരെ ദീർഘിപ്പിച്ച് നൽകിയും ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 1065/2020/LSGD	Order	05-06-2020	LSGD	കൊവിഡ് 19 - നിർവ്യാപന /4പതിരായ 4പവർത്തനങ്ങളിൽ - വിദേശത്തു നിന്നും മറ്റ് സംസ്ഥാനങ്ങളിൽ നിന്നും എത്തുന്ന കേരളീയരുടെ ക്വാറന്റയിൻ സംവിധാനം - ശുചീകരണ 4പവർത്തനങ്ങൾക്കായി ദിവസം ഒമ്പതന അടിസ്ഥാനത്തിൽ ജോലിക്കാരെ (Paid Worker) നിയോഗിക്കുന്നതിന് അനുമതി നൽകി ഉത്തരവാക്കുന്നു	Download PDF
G.O. (R.T) No. 1762/2020/GAD	Order	05-06-2020	GAD	Covid 19 - Containment activities of Novel Corona Virus (Covid - 19) - SOPs for reopening of Various Sectors after Lock Down	Download PDF
Guideline	Guidelines	04-06-2020	Home	SOP on preventive measures in Hotels and Other Hospitality Units to contain spread of COVID-19	Download PDF
Reference Guide	Guidelines	04-06-2020	Home	SOP on preventive measures to contain spread of COVID-19 in religious places/places of worship	Download PDF
Guideline	Guidelines	04-06-2020	Home	SOP on preventive measures in Restaurants to contain spread of COVID-19	Download PDF
Guideline	Guidelines	04-06-2020	Home	SOP on preventive measures in shopping malls to contain spread of COVID-19	Download PDF
Q.I.P.1/9141/2020/DGE	Guidelines	04-06-2020	General Education	ഓൺലൈൻ ക്ലാസ്സ് - മാർഗ്ഗരേഖ 4പസിദ്ധീകരിക്കുന്നത് സംബന്ധിച്ച്	Download PDF
G. O. (Ms) No. 108/2020/GAD	Order	04-06-2020	GAD	GAD- Covid-19- containment activities of Novel Corona Virus (COVID-19)- designating Addt. Chief Secretary, Home & Vigintance in overall charge of att Covid-19 retated activities in the Sitate- orders issued	Download PDF
No.33/f-2/2020/H&FW	Guidelines	03-06-2020	Health and Family welfare	Advisory on Performance assessment of District Surveillance Unit	Download PDF
QIP(1)/9141/2020/DGE	Circular	03-06-2020	General Education	ഓൺലൈൻ ക്ലാസുകൾ - കുട്ടികൾക്ക് ക്ലാസ്സുകളുടെ ലഭ്യത - തുടർ നടപടികൾ സംബന്ധിച്ച്	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
No.31/f-2/2020/H&FW	Order	03-06-2020	Health and Family welfare	Revised Guideline on Covid -19 Testing and Quarantine / Isolation	Download PDF
G.O. (R.T) No. 362/2020/ID	Order	02-06-2020	Industries	- COVID-19 - MSME- VYAVASAYA BHADRATHA - Scheme for Interest Subvention on Term Loan and Working Capital Loan- Details of the Scheme, guidelines and Implementation Procedures- Approved -Orders issued	Download PDF
G.O. (M.S) No. 1008/2020/H&FWD	Order	02-06-2020	Health and Family welfare	സ്റ്റേറ്റ് പബ്ലിക് ഹെൽത്ത് ക്ലിനിക് ലഭ്യതയിലേ മിനിസ്റ്റീരിയൽ സ്റ്റാഫിന്റെ ഡ്യൂട്ടി സമയം പരിഷ്കരിച്ച് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 998/2020/H&FWD	Guidelines	02-06-2020	Home	Operational guidelines for the implementation of Triage system in all Emergency Departments across the State of Kerala - Orders issued.	Download PDF
No.I.A 1/116/2020/LSGD	Circular	01-06-2020	LSGD	കമ്മ്യൂണിറ്റി ക്വിന്റ് - നിർമ്മാണപരമായ കമ്മ്യൂണിറ്റി ക്വിന്റുകളിൽ ലഭ്യമായ ഭക്ഷ്യവസ്തുക്കളുടെ വിതരണം - സംബന്ധിച്ച്	Download PDF
G.O. (M.S) No. 106/2020/GAD	Order	01-06-2020	GAD	Covid 19- Regulations to contain the covid 19 pandemic - general lock down order - extension of general lock down in containment zones and lifting of regulations in a phased manner	Download PDF
T. 405/II/ COVID Specials /2020	Order	30-05-2020	Home	Running of special trains over Southern Railway.	Download PDF
G.O. (R.T) No. 1690/2020/GAD	Order	30-05-2020	GAD	കോവിഡ് 19 - ലോക്ക് ഡൗണിനെ തുടർന്ന് അന്യ സംസ്ഥാനങ്ങളിൽ അകപ്പെട്ടുപോയ മലയാളികൾക്ക് കേരളത്തിലേക്ക് മടങ്ങി വരുന്നതിനും കേരളത്തിൽ നിന്നും മറ്റ് സംസ്ഥാനങ്ങളിലേക്ക് ആളുകൾ പോകുന്നതിനുമായി സർക്കാർ പുറപ്പെടുവിച്ചിട്ടുള്ള മാർഗ്ഗനിർദ്ദേശങ്ങൾ സംഗ്രഹിച്ച് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
DMC.3-391/2020	Order	30-05-2020	Collectorate	കോവിഡ് 19 രോഗവ്യാപന നിയന്ത്രണം - ആലപ്പുഴ ജില്ല - നിയന്ത്രണങ്ങൾ ഏർപ്പെടുത്തി ഉത്തരവാകുന്നത് സംബന്ധിച്ച്	Download PDF
G.O. (R.T) No. 1009/2020/LSGD	Order	29-05-2020	LSGD	സുഭിക്ഷ കേരളം - സബ്സിഡി മാർഗ്ഗരേഖയിൽ ഭേദഗതികളും കൂട്ടിച്ചേർക്കലുകളും	Download PDF
No.31/f-2/2020/H&FW	Order	29-05-2020	Health and Family welfare	Covid 19 Health Advisory for the conduct of examinations in poly technical colleges/technical education department	Download PDF
Guideline	Guidelines	28-05-2020	Health and Family welfare	പരീക്ഷാ കേന്ദ്രങ്ങളിൽ പാടില്ലാത്തത്	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
Guideline	Guidelines	28-05-2020	Health and Family welfare	സ്കൂൾ പരീക്ഷ - പോതു നിർദ്ദേശങ്ങൾ	Download PDF
Guide	Guidelines	28-05-2020	Disaster Management	ദുരന്ത നിവാരണത്തിനുള്ള ഓറഞ്ച് പുസ്തകം	Download PDF
No.SS1/190/2020/GAD	Circular	28-05-2020	GAD	കൊവിഡ് 19 - നിർവ്യാപനവുമായി ബന്ധപ്പെട്ട് വിവിധ സർക്കാർ വകുപ്പുകളും ഏജൻസികളും നടത്തുന്ന 4പവർത്തനങ്ങൾ സംബന്ധിച്ച വിവരങ്ങൾ ഒറ്റ പ്ലാറ്റ്ഫോമിൽ പോതു ജനങ്ങൾക്ക് ലഭ്യമാക്കുന്നത് സംബന്ധിച്ച്	Download PDF
G.O. (R.T) No. 1737/2020/GED	Order	28-05-2020	General Education	സർക്കാർ, എയിഡഡ് വിദ്യാലയങ്ങളിൽ ഒന്നു മുതൽ പത്തുവരെ ക്ലാസ്സുകളിലേക്കുള്ള 4പവശനം , വിടുതൽ സർട്ടിഫിക്കറ്റേ നൽകൽ എന്നിവ ഓൺലൈനായി നടത്തുന്നതിന് അനുമതി നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 672/2020/HEDN	Order	27-05-2020	Higher Education	2020-2021 അധ്യായന വർഷത്തെ ട്രക്കിംഗിൽ ഹസ്താക്ഷരങ്ങളിലെ അഡ്മിഷൻ ഓൺലൈൻ മുഖേന നടത്തുന്നതിന് അനുമതി നൽകിക്കൊണ്ട് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 959/2020/H&FWD	Order	27-05-2020	Health and Family welfare	National Health Mission - Proposal for setting up of State Blood Cell for Hemophilia and Hemoglobinopathies for Government of Kerala - Sanctioned - Orders issued.	Download PDF
G.O. (R.T) No. 677/2020/HEDN	Order	27-05-2020	Higher Education	കൊവിഡ് ട്രാൻസ് വ്യാപനം 4പതിരായിക്കുന്നതുമായി ബന്ധപ്പെട്ട മാർഗരഖ പാലിച്ചുകൊണ്ട് സർവ്വകലാശാലാ പരീക്ഷകൾ നടത്തുന്നത് - സർവ്വകലാശാല 4പവർത്തന പരിധിക്ക് പുറത്ത് പരീക്ഷാർത്ഥികൾക്ക് സജ്ജമാക്കുന്നതിന് അനുമതി നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
No.232/DC1/20/LSGD	Circular	27-05-2020	LSGD	സ്കൂളുകളുടെ ശുചിത്വം , പരിസര ശുചിത്വം എന്നിവ ഉറപ്പാക്കുന്നതിന് തദ്ദേശസ്വയംഭരണ സ്ഥാപനങ്ങളുടെ മെൽനോട്ടത്തിൽ നടപടികൾ സ്വീകരിക്കുന്നത് സംബന്ധിച്ച്	Download PDF
No.31/f-2/2020/H&FW	Order	27-05-2020	Health and Family welfare	Addendum to the Advisory for quarantine and testing of prisoners who are newly Incarcerated or returning to jail after parole	Download PDF
No.31/f-2/2020/H&FW	Order	27-05-2020	Health and Family welfare	Protocol for compassionate use of convalescent plasma for treatment of patients with severe/critical covid 19 infection in kerala	Download PDF
No.E2-1329/2020/Try	Order	25-05-2020	Treasury	45ആം നിയന്ത്രണം 2020 - 2021 തുടർ നിർദ്ദേശം നൽകുന്നത് - സംബന്ധിച്ച്	Download PDF
DI-3/28738/2020	Official Memorandum	25-05-2020	High Court	Production of accused in the mangistrate courts - Risk arising out of Covid -19 pandemic - Usage of electronic video Linkage for production. reg	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
No.31/f-2/2020/H&FW	Order	25-05-2020	Health and Family welfare	Truenat Beta CoV Testing at Government Laboratories	Download PDF
G.O. (R.T) No. 955/2020/LSGD	Order	25-05-2020	LSGD	കൊവിഡ് 19 - കൊവിഡ് ഫെസ്റ്റ് ലെൻ 451റ്റ്മേൻ്റ് സെൻ്റർ (CFTC) രൂപീകരണവും നടത്തിപ്പും സംബന്ധിച്ച മാർഗ്ഗനിർദ്ദേശങ്ങൾ	Download PDF
No.C2-1300(1)/2020/DMO	Circular	24-05-2020	Health and Family welfare	കൊവിഡ് 19 - 4പതിരായം - കോളം ഗവ: വിക്ടോറിയ ആശുപത്രിയിലെക്ക് ഡോക്ടർമാരെയും ഇതര ജീവനക്കാരെയും നിയോഗിച്ച് - ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
No.31/f-2/2020/H&FW	Guidelines	23-05-2020	Health and Family welfare	Covid 19 Health Advisory - students appearing the Examination	Download PDF
Press Release	Press Release	23-05-2020	General Education	എസ് എസ് എൽ സി / ഹയർസെക്കൻററി / വോക്കേഷണൽ ഹയർ സെക്കൻററി പരീക്ഷാകേന്ദ്ര മാറ്റം അനുവദിച്ചുകൊണ്ടുള്ള ലിസ്റ്റ് 4പരിശീലിപ്പിച്ചു	Download PDF
DCPKD/1858/2020/J5	Order	23-05-2020	Collectorate	Palakkad District - Under section 144 of Code of Criminal Procedure 1973	Download PDF
G.O. (R.T) No. 1599/2020/GAD	Order	23-05-2020	GAD	Corona Virus disease (COVID-19)- SOP for air travel (domestic sector)- orders issued	Download PDF
G.O. (P) No. 1282/2020/GAD	Order	23-05-2020	Finance	കൊവിഡ് പകർച്ചവ്യാധിയുടെ പശ്ചാത്തലത്തിൽ ഉടലെടുത്ത സാമ്പത്തിക 4പതിസന്ധി തരണം ചെയ്യുന്നതിനായി ജീവനക്കാരുടെയും അധ്യാപകരുടെയും ശമ്പളത്തിൽ ഒരു ഭാഗം താൽക്കാലികമായി മാറ്റിവേക്കുന്നതിനായി പുറപ്പെടുവിച്ച ഉത്തരവ് റദ്ദ് ചെയ്ത ഉത്തരവാകുന്നു	Download PDF
No.31/f-2/2020/H&FW	Guidelines	22-05-2020	Health and Family welfare	Covid 19 Health Advisory for Drivers, Crew and Passengers of Taxis and Interstate Vehicles	Download PDF
V/T 405/Spl/Vol.XII	Order	21-05-2020	Home	Running Of Special trains - Janasadhabdhi- Kerala	Download PDF
G.O. (P) No. 64/2020/FIN	Order	21-05-2020	Finance	Salary Deferred - Amendment	Download PDF
Press Release	Press Release	20-05-2020	Press Information Buerau	Guidelines for Train Services beginning on 1st June 2020	Download PDF
L.R.E1-231/2020	Guidelines	20-05-2020	Revenue	കൊവിഡ് 19 - വ്യാപനം തടയുന്നതിനുള്ള 4പവർത്തനങ്ങള്, നിയന്ത്രണങ്ങള്, ഓഫീസ് 4പവർത്തനങ്ങൾ എന്നിവ സംബന്ധിച്ച്	Download PDF
DTP/2020/05/285	Order	20-05-2020	Home	Operation of Special Trains	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (R.T) No. 928/2020/LSGD	Order	20-05-2020	LSGD	"സുഭിക്ഷ കേരളം" പദ്ധതി വാർഷിക പദ്ധതിയുടെ ഭാഗമാക്കുന്നതിനുള്ള മാർഗ്ഗ നിർദ്ദേശങ്ങൾ	Download PDF
No.C.C.S./1558/2020-B1	Guidelines	20-05-2020	Food & Civil Supplies	ജീവനക്കാരും - കോവിഡ് 19 - വ്യാപനം തടയുന്നതിനുള്ള 4പവർത്തനങ്ങളും - നിയന്ത്രണങ്ങളും നടപടി 4കമങ്ങളും ലൊക്കഡൗണുമായി ബന്ധപ്പെട്ട് സിവിൽ സപ്ലൈസ് വകുപ്പിൽ 2020 മേയ് 20 മുതൽ 31 വരെ നടപ്പാക്കുന്ന മാർഗ്ഗ നിർദ്ദേശങ്ങൾ പുറപ്പെടുവിച്ച് ഉത്തരവാകുന്നു	Download PDF
G.O. (R.T) No. 3110/2020/FIN	Order	20-05-2020	Finance	ദേശീയ സമ്പാദ്യ പദ്ധതി ഏജൻ്റ് കോവിഡ്- 19 നിയന്ത്രണങ്ങൾ മൂലം നിക്ഷേപ സമാഹരണം നടത്തുന്നതിന് നിലനിന്നിരുന്ന വിലക്കുകൾക്ക് ഇളവ് നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 1193/2020/HOME	Order	20-05-2020	Home	Newly admitted prisoners to be brought to prison after testing for COVID by Police, Excise, Forest Departments - Guidelines Issued	Download PDF
No.31/f-2/2020/H&FW	Guidelines	20-05-2020	Health and Family welfare	Advisory on COVID 19 - Patient clinical data reporting by COVID Hospitals	Download PDF
NO.EA2-26220/2020/DHS	Order	20-05-2020	Health and Family welfare	Rural Posting of Outgoing interns from Medical Colleges in the wake of COVID 19 Pandemic - Order Issued	Download PDF
G.O. (M.S) No. 99/2020/DMD	Order	18-05-2020	GAD	കോവിഡ് 19 വ്യാപനം തടയുന്നതിനുള്ള 4പവർത്തനങ്ങളും - നിയന്ത്രണങ്ങളും നടപടി 4കമങ്ങളും - ലൊക്കഡൗണുമായി ബന്ധപ്പെട്ട് സംസ്ഥാനത്തെ 2020 മേയ് 18 മുതൽ 31 വരെ നടപ്പാക്കുന്ന മാർഗ്ഗനിർദ്ദേശങ്ങൾ പുറപ്പെടുവിച്ച് ഉത്തരവാകുന്നു	Download PDF
G.O. (M.S) No. 41/2020/TD	Order	18-05-2020	Tax	കോവിഡ് 19 - ലൊക്കഡൗൺ നിയന്ത്രണങ്ങൾക്കു വിധേയമായി വിദേശമുദ്രയ്ക്ക് ഷോപ്പുകൾ, ബാങ്ക്, ബിയർ/റവൻ പാർലറുകൾ എന്നിവ തുറക്കുന്നതിന് അനുമതി നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 622/2020/HEDN	Order	18-05-2020	Higher Education	കോവിഡ് 19 - പകർച്ചവ്യാധി നിയന്ത്രണ - 4പവർത്തനങ്ങൾ പൊളിടേക്സിക്ക് കൊളളുകളിലെ പരീക്ഷാ നടത്തിപ്പ് സംബന്ധിച്ച മാനദണ്ഡങ്ങൾ പുതുക്കി നിശ്ചയിച്ച് ഉത്തരവാകുന്നു	Download PDF
Guideline	Guidelines	18-05-2020	Home	Guidelines on preventive measures to contain spread of COVID-19 in workplace settings	Download PDF
G.O. (R.T) No. 421/2020/SCSTDD	Order	18-05-2020	SC/ST Dept	കോവിഡ് 19 പശ്ചാത്തലത്തിൽ നിലവിലുള്ള എസ്.സി 64പാമോട്ടർമാരുടെ സേവന കാലാവധി ദീർഘിപ്പിച്ച് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
Guideline	Guidelines	18-05-2020	Home	Strategy for covid 19 testing in India (Version 5, dated 1st May 2020)	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (M.S) No. 14/2020/P&EA	Order	18-05-2020	Finance	കൊവിഡ് 19 - സുരക്ഷ കേരളം : ഭക്ഷ്യോത്പാദന വർദ്ധനവിനുള്ള മഹായജ്ഞം - മാർഗ്ഗരേഖ	Download PDF
No. IT-B1/25/2020-ITD	Order	18-05-2020	Home	Covid 19 - Collection of personal information - General guidelines on data collection and processing	Download PDF
G.O. (R.T) No. 1543/2020/GAD	Order	17-05-2020	GAD	Novel Corona Virus disease (Covid-19)containment activities- - Functioning of War Room- Extended - Orders issued	Download PDF
No.40-3/2020-DM-I(A)	Order	17-05-2020	Home	Lock down Extended up to 31.05.2020	Download PDF
No. 1-29/2020-PP	Guidelines	17-05-2020	Disaster Management	Lock Down Extended up to 31.05.2020	Download PDF
No.Q.I.P.1/9141/2020/D.G.E	Circular	15-05-2020	General Education	സർക്കാർ / എസ്സഡ് / അൺ എസ്സഡ് വിദ്യാലയങ്ങളിലെ പരീക്ഷകൾ , വിടുതൽ സംബന്ധിച്ച്	Download PDF
No. 16834/S.A 1/2020/NS	Circular	15-05-2020	Legislative Assembly Secretariat	കൊവിഡ് 19 -നിർവ്യാപനം - ലോക്സഭയിൽ ഇളവുകൾ വരുത്തിയ സാഹചര്യത്തിൽ നിയമസഭാ സെക്രട്ടറിയേറ്റ് ജീവനക്കാരുടെ ഡ്യൂട്ടി ക്രമീകരണം - മാർഗ്ഗ നിർദ്ദേശങ്ങൾ	Download PDF
DI-3/27275/2020	Official Memorandum	15-05-2020	High Court	Functioning of subordinate courts from 18-05-2020 - advisory issued	Download PDF
A7-127/2020	Official Memorandum	15-05-2020	High Court	Reopening of the High Court w.e.f 18.05.2020 after mid summer vacation 2020 instructions issued	Download PDF
B1(A)-76258/2019(1)	Proceedings	15-05-2020	High Court	General Transfers 2020, in respect of Judicial Offers - order Issued	Download PDF
No.C4/9661/2020	Circular	14-05-2020	General Education	പൊതുവിദ്യാഭ്യാസ ഡയറക്ടറുടെ 13/05/2020 ലെ വീഡിയോ കൊൺഫറൻസിലെ നിർദ്ദേശങ്ങൾ	Download PDF
G.O. (R.T) No. 3032/2020/FIN	Order	14-05-2020	Finance	കൊവിഡ് 19 ന്റെ പശ്ചാത്തലത്തിൽ സംസ്ഥാന സർക്കാരിന്റെ റവന്യൂ ചെലവുകളും റവന്യൂ വരുമാനവും തമ്മിലുള്ള അന്തരം ക്രമീകരിച്ചുകൊണ്ട് വർദ്ധിച്ചുവരുന്ന സാഹചര്യത്തിൽ ഒഴിവാക്കപ്പെടേണ്ട ചെലവുകൾ കണ്ടെത്തി ചെലവ് ക്രമീകരണം സംബന്ധിച്ച് അപലോകനം നടത്തി റിപ്പോർട്ട് സമർപ്പിക്കുന്നതിന് വിദേശ സമിതി രൂപീകരിച്ച് ഉത്തരവാകുന്നു	Download PDF
DCKLM/01/2020-E1	Press Release	13-05-2020	Collectorate	സർക്കാർ ജീവനക്കാർക്ക് മാത്രമായി 2020 മേയ് 15 മുതൽ ഓഫീസ് പവർത്തി ദിവസങ്ങളിൽ കേ എസ് ആർ ടി സി ബസ് സൗകര്യം	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (R.T) No. 140/2020/TRANS	Order	12-05-2020	KSRTC	കൊവിഡ് 19 ന് തുടർന്നുള്ള ലോക്ക്ഡൗൺ കാലഘട്ടം - ജീവനക്കാർക്കായി പാലാൻഡിംഗ് ഓഫീസ് സമുച്ചയങ്ങളും, സിവിൽ സപ്ലൈകളും, കളക്ടറേറ്റുകളും, ട്രാൻസ്പോർട്ട് തുടങ്ങിയ സ്ഥലങ്ങളിലേക്ക് പരസ്യ സർവീസി നടത്തുന്നത് - അനുമതി നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
Advisory No.2020/NHM	Guidelines	12-05-2020	Health and Family welfare	Quarantine series-5- Cleaning the room	Download PDF
G.O. (R.T) No. 1492/2020/GAD	Order	12-05-2020	GAD	Novel Corona Virus disease (COVID-19) containment activities - Paid Quarantine facility for returnees- Guidelines- Orders issued.	Download PDF
G.O. (R.T) No. 872/2020/H&FWD	Order	12-05-2020	Health and Family welfare	Using Covid - 19 Jagratha Platform real time surveillance, care and support for people affected / quarantined b COVID 19 - Basic user Guide for management of COVID 19 JAGRATHA approved	Download PDF
Affidavit	Affidavit	11-05-2020	GoK	Home quarantine ൽ പൊതുജനങ്ങൾ സമർപ്പിക്കേണ്ട Affidavit	Download PDF
No.ME 3-10505/2020/ Try	Guidelines	11-05-2020	Treasury	2020 ഏപ്രിൽ , മേയ് മാസങ്ങളിലെ ശമ്പള ബില്ലുകളുടെ കൊപ്പികൾ അക്കൗണ്ടന്റ് ജനറലിനു നൽകുന്നത് - സംബന്ധിച്ച്.	Download PDF
No.40-3/2020-DM-I(A)	Order	11-05-2020	Home	Standard Operating Protocol (SOP), for movement of persons by train	Download PDF
G.O. (R.T) No. 1489/2020/GAD	Order	11-05-2020	GAD	Novel Corona Virus disease (COVID-19)- interstate movement of migrant labourers, tourists, students and other persons stranded in Kerala and other States owing to national lock down- guidelines for infrastructure arrangements and procedures through different modes of transport- modified orders issued	Download PDF
G.O. (R.T) No. 857/2020/H&FWD	Order	10-05-2020	Health and Family welfare	സംസ്ഥാനത്തെ കൊവിഡ് 19 നിയന്ത്രണം - ഹോം ക്വാറന്റൈൻ, പരിശോധന നടപടി ക്രമങ്ങളും - വിശദമായ മാർഗ്ഗനിർദ്ദേശങ്ങൾ സംബന്ധിച്ച് - ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
Press Release	Report	10-05-2020	Press Information Buerau	Gradual Resumption of Select Passenger Services by Indian Railway	Download PDF
Guideline	Guidelines	10-05-2020	Home	Revised guidelines for Home Isolation of very mild/pre-symptomatic COVID-19 cases	Download PDF
G.O. (M.S) No. 94/2020/ DMD	Order	09-05-2020	GAD	COVID-19- Regulations to contain the COVID-19 pandemic- total lock-down on Sundays- orders issued	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (R.T) No. 849/2020/LSGD	Order	09-05-2020	LSGD	കൊവിഡ് 19 നിർവ്യാപന / 4പതിരായ 4പവർത്തനങ്ങളിൽ - വിദേശത്തു നിന്നും മറ്റേ സംസ്ഥാനങ്ങളിൽ നിന്നും എത്തുന്ന കെരളീയരുടെ ക്വാറന്റയിൻ സംവിധാനം - തദ്ദേശ സ്വയംഭരണ സ്ഥാപനങ്ങൾ നിർവഹിക്കേണ്ട ചുമതലകളും 4പവർത്തനങ്ങളും നിശ്ചയിച്ച് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
No.DCKKD/2803/2020-F3	Order	08-05-2020	Collectorate	കൊവിഡ് 19 വ്യാപനം തടയൽ, പോതുസ്ഥലങ്ങളിൽ ആരോഗ്യ സ്കീനിം നടത്തുന്നതിന് ജീവനക്കാരെ നിയമിക്കുന്നത് സംബന്ധിച്ച്	Download PDF
G.O. (R.T) No. 853/2020/H&FWD	Order	08-05-2020	Health and Family welfare	COVID-19 Procurement of One lakh RTPCR testing materials through KMSCL- Orders issued	Download PDF
G.O. (R.T) No. 1470/2020/GAD	Order	08-05-2020	GAD	Covid-19- SoP for domestic passengers entering the state through land borders - Modified- orders issued	Download PDF
G.O. (P) No. 57/2020/FIN	Order	08-05-2020	Finance	The Payment of Wages of Contractual / casual / daily wage / Outsources staff during lock down period due to COVID 19 - Extension Orders.Reg	Download PDF
G.O. (R.T) No. 229/2020/F&P	Order	08-05-2020	Fisheries	മത്സ്യഫൈഡിന്റ നേതൃത്വത്തിലുള്ള വല നിർമ്മാണശാലകളും, വ്യാസ സ്റ്റാറുകളും അടിയന്തിരമായി 4പവർത്തിപ്പിക്കുന്നതിനുള്ള അനുമതി നൽകി - ഉത്തരവാകുന്നു	Download PDF
G.O. (R.T) No. 2980/2020/FIN	Order	08-05-2020	Finance	മുഖ്യമന്ത്രിയുടെ ഭേദിതാശ്വാസ നിധിയിലേക്ക് സർവ്വീസ് പെൻഷണർമാരുടെ ഒരുമാസത്തെ പെൻഷൻ തുക സംഭാവന നൽകുന്നത് - മാർഗ്ഗ നിർദ്ദേശങ്ങൾ പുറപ്പെടുവിച്ച് ഉത്തരവാകുന്നു	Download PDF
Q.I.P.1/9141/2020/DGE	Circular	08-05-2020	General Education	2020 - 21 അദ്ധ്യായന വർഷത്തെക്കുള്ള കുട്ടികളുടെ 64പാഠമാപ്പൻ മാർഗ്ഗ നിർദ്ദേശങ്ങൾ നൽകുന്നത് - സംബന്ധിച്ച്	Download PDF
G.O (Rt) No.1469/2020/GAD	Order	08-05-2020	GAD	GAD- Novel Corona Virus disease (COVID-19)- war room duty - appointment of officers - orders issued	Download PDF
G.O. (R.T) No. 846/2020/H&FWD	Order	07-05-2020	Health and Family welfare	National Health Mission - Providing additional incentives to ASHA for COVID-19 activities - Sanctioned - Revised Orders issued.	Download PDF
No. R.A. 1/168/2020/LSGD	Order	07-05-2020	LSGD	ലോക്കഡൗൺ കാലയളവിൽ നിർമ്മാണാനുമതിയുടെ കാലാവധി അവസാനിച്ച കേട്ടിടങ്ങൾക്ക് നിർമ്മാണാനുമതി ദീർഘിപ്പിച്ചു നൽകുന്നു	Download PDF
G.O. (R.T) No. 836/2020/LSGD	Order	07-05-2020	LSGD	സംസ്ഥാനത്തെ 1മതകാ സ്മാർത്ത് ആൻ്റ് മീഡിയം എൻ്റർപ്രൈസസ് (MSME) യൂണിറ്റുകൾക്ക് 1ലസൻസ് പുതുക്കുന്നതിനുള്ള കാലാവധി 31.10.2020 വരെ ദീർഘിപ്പിച്ച് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (R.T) No. 256/2020/NORKA	Order	07-05-2020	NORKA	Outbreak of Novel Corona virus disease (Covid 19) standard operating procedures (SOP) to screen and quarantine indian nationals stranded outside the country, returning to Kerala - Modified	Download PDF
G.O. (R.T) No. 402/2020/LSGD	Order	07-05-2020	PWD	കൊവിഡ് 19 - കരാറുകാരുടെ ലൈസൻസ് പുതുക്കുന്നതിനുള്ള സമയം ദീർഘിപ്പിച്ച് നൽകുന്നു	Download PDF
G.O. (R.T) No. 831/2020/LSGD	Order	06-05-2020	LSGD	കൊവിഡ് 19 - നിർവ്യാപന / 4പതിരായ 4പവർത്തനങ്ങളും 4പവാസികളുടെയും മറ്റ് സംസ്ഥാനങ്ങളിൽ നിന്നുള്ള മലയാളികളുടെയും തിരിച്ചുവരവ് കണക്കിലെടുത്ത് നടത്തുന്ന 4കമീകരണങ്ങളും - വാർഡുതല മൊണിറ്ററിംഗ് കമ്മിറ്റികളും തദ്ദേശ സ്ഥാപനതല കമ്മിറ്റികളും രൂപീകരിച്ച് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
No.22/2020/Fin	Circular	06-05-2020	Finance	പങ്കാളിത്തെ പെൻഷൻ പദ്ധതിയിൽ ഉൾപ്പെട്ട ജീവനക്കാരുടെ ഏപ്രിൽ 2020 മുതൽ അഞ്ച് മാസത്തെയ്ക്കുള്ള എൻ.പി.എസ് വിഹിതം ഈടാക്കുന്നതിൽ വ്യക്തത വരുത്തുന്നു	Download PDF
No.E.G 3-27547/2020/H&FWD	Circular	06-05-2020	Health and Family welfare	ജീവന കാര്യം - കൊവിഡ് 19 - അടിയന്തിര സാഹചര്യം തരണം ചെയ്യുന്നതിന് ഭാഗമായ് ജൂനിയർ ഹെൽത്ത് ഇൻസ്പെക്ടർ 4ഗഡ് -II തസ്തികയിൽ അഡ് ഹോക്ക് നിയമനം നടത്തുന്നതിനുള്ള അനുമതി	Download PDF
G.O. (R.T) No. 298/2020/TD	Order	06-05-2020	Tax	കേരളാ സ്റ്റേറ്റ് ഫിനാൻഷ്യൽ എൻറർപ്രൈസ് ലിമിറ്റേഡ് (കെ.എസ്.എഫ്.ഇ) - കൊവിഡ് 19 - മാറ്റി വച്ച ചിട്ടി ലേലം / നൽകേണ്ട - പുനരാരംഭിക്കുന്നതിന് അനുമതി നൽകി ഉത്തരവുപുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 831/2020/LSGD	Order	06-05-2020	LSGD	തദ്ദേശ സ്വയം ഭരണ വകുപ്പ് കൊവിഡ് 19 - നിർവ്യാപന / 4പതിരായ 4പവർത്തനങ്ങൾ - 4പവാസികളും മറ്റും സംസ്ഥാനങ്ങളിൽ നിന്നുള്ള മലയാളികളുടെയും തിരിച്ചു വരവ് കണക്കിലെടുത്ത് നടത്തുന്ന 4കമീകരണങ്ങൾ - വാർഡ് തല മൊണിറ്ററിംഗ് കമ്മിറ്റികളും തദ്ദേശ സ്ഥാപനതല കമ്മിറ്റികളും രൂപീകരിച്ച് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 828/2020/LSGD	Order	05-05-2020	LSGD	തദ്ദേശസ്വയംഭരണ വകുപ്പ് അയ്യൻകാളി നഗര തോഴിലുറപ്പ് പദ്ധതി കൊവിഡ് 19 പകർച്ച വ്യാധിയുടെ പശ്ചാത്തലത്തിൽ 4പവർത്തികൾ ആരംഭിക്കുന്നതിനു മാർഗനിർദ്ദേശങ്ങൾ പുറപ്പെടുവിച്ചു ഉത്തരവാകുന്നു	Download PDF
G.O. (M.S) No. 73/2020/LSGD	Order	05-05-2020	LSGD	കൊവിഡ് പകർച്ച വ്യാധിയുടെ പശ്ചാത്തലത്തിൽ തദ്ദേശ സ്വയം ഭരണ സ്ഥാപനങ്ങളിലെ ജന 4പതിനിധികളുടെ ഹോണററിയം കുറവ് ചെയ്യുന്നത് സംബന്ധിച്ച്	Download PDF
No.SS1/91/2020/GAD	Circular	05-05-2020	GAD	കൊവിഡ് 19 വ്യാപനം തടയുന്നതിനുള്ള 4പവർത്തനങ്ങളും - സംസ്ഥാന സർക്കാർ ഓഫീസുകൾ 4പവർത്തിക്കുന്നതിനുള്ള മാർഗ്ഗ നിർദ്ദേശങ്ങളും - ഭേദഗതി	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
No. Pol-5/60(21)/2020/GAD	Circular	05-05-2020	GAD	Covid 19 Lockdown - Interstate transit of Stranded Persons - Additional Instructions	Download PDF
No.40-3/2020-DM-I(A)	Order	05-05-2020	Home	Movement of Indian Nationals Stranded Outside the Country and of Specified persons to Travel Abroad strict implementation by Ministries / Departments of Government of India, State/Union Territory Governments and State /Union Territory Authorities	Download PDF
No.E1-1380/2020/Try	Guidelines	05-05-2020	Treasury	04/2020 മുതൽ 08/2020 വരെയുള്ള ശമ്പളം മാറ്റുന്നതിന് - തുടർ നിർദ്ദേശം	Download PDF
G.O. (R.T) No. 2945/2020/FIN	Order	05-05-2020	Finance	Study on the impact of COVID-L9 - Constitution of Expert Committee - Orders issued.	Download PDF
No.DA1/130/2020/LSGD	Circular	05-05-2020	LSGD	കൊവിഡ് 4പതിരായ 4പവർത്തനം - ഭക്ഷ്യവസ്തുക്കളുടെ ലഭ്യതയും ഉല്പാദനവും വർദ്ധിപ്പിക്കാനുള്ള വിവിധ പദ്ധതികൾ - ബഹു. മുഖ്യമന്ത്രി നടത്തുന്ന വീഡിയോ കോൺഫറൻസ് - സംബന്ധിച്ച്	Download PDF
G.O. (R.T) No. 2941/2020/FIN	Order	05-05-2020	Finance	4പാദശേരിക സർക്കാർ അധികാരികൾ ഡിജിറ്റൽ ട്രാൻസ് ചെയ്തിട്ടില്ല എന്ന കാരണത്താൽ വിധവാ പെൻഷൻ / 50 വയസ്സിനുമുകളിലുള്ളവർക്കുള്ള അവിവാഹിത പെൻഷൻ തടഞ്ഞു വേർതിരിച്ചു ഗുണഭോക്താക്കൾക്ക് 2019 ഒക്ടോബർ , നവംബർ, ഡിസംബർ, 2020 ജനുവരി, ഫെബ്രുവരി, മാർച്ച്, ഏപ്രിൽ മാസങ്ങളിലെ സാമൂഹ്യ സുരക്ഷാ പെൻഷൻ അനുവദിച്ച് ഉത്തരവാകുന്നു	Download PDF
No. R&R(1)/ 90070/2020/DGE	Order	05-05-2020	General Education	പോതു വിദ്യാഭ്യാസം - 2020 -21 അദ്ധ്യായന വർഷം സ്കൂൾ തുറക്കുന്നതിനു മുമ്പായി സ്വീകരിക്കേണ്ട നടപടികളുടെ മാർഗ്ഗ നിർദ്ദേശങ്ങൾ നൽകുന്നു	Download PDF
G.O. (R.T) No. 2947/2020/FIN	Order	05-05-2020	Finance	കൊവിഡ് 19 വ്യാപനം - സാമ്പത്തിക പാക്കേജ് - സാമൂഹ്യ സുരക്ഷാ / പെൻഷനുകൾ ലഭിക്കാത്ത ഓരോ BPL(PHH), AAY കുടുംബത്തിനും - സാമ്പത്തിക സഹായം അനുവദിച്ച് - ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 820/2020/LSGD	Order	04-05-2020	LSGD	കൊവിഡ് 19 - 4പതുക സാഹചര്യം പരിഗണിച്ച് താഴ്ന്നവർക്കും അല്ലാത്തവർക്കും സ്ഥാപനങ്ങളിൽ വസ്തു നികുതി പിഴകൂടാതെ അടയ്ക്കുന്നതിനും വ്യാപാര ട്രേഡിംഗ് ഉൾപ്പെടെയുള്ള വിവിധ ട്രേഡിംഗ്സ്കൾക്കും പുതുക്കുന്നതും വിനോദ നികുതി അടയ്ക്കുന്നതിനുമുള്ള അവസാന തീയതി 31.05.2020 വരെ തീർപ്പാക്കിയിട്ടു നൽകുന്നു	Download PDF
G.O. (M.S) No. 86/2020/GAD	Order	04-05-2020	GAD	കൊവിഡ് 19 വ്യാപനം തടയുന്നതിനുള്ള 4പവർത്തനങ്ങൾ - നിയന്ത്രണങ്ങളും നടപടിക്രമങ്ങളും - മാർഗ്ഗ നിർദ്ദേശങ്ങൾ	Download PDF
G.O. (M.S) No. 71/2020/LSGD	Order	04-05-2020	LSGD	മുഖ്യമന്ത്രിയുടെ തദ്ദേശ ഭാഗ് പുനരുദ്ധാരണ പദ്ധതി യുടെ രണ്ടാം ഘട്ടത്തിൽ 2018 4പവർത്തനങ്ങൾക്കായി ഭരണാനുമതി നൽകുന്നു	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (R.T) No. 818/2020/LSGD	Order	04-05-2020	LSGD	മുഖ്യമന്ത്രിയുടെ തദ്ദേശ റോഡ് പുനരുദ്ധാരണ പദ്ധതി - മാർഗ്ഗ നിർദ്ദേശങ്ങൾ	Download PDF
No.D.C.1/191/2020/LSGD	Circular	04-05-2020	LSGD	മഴക്കാല പൂർവ്വ ശുചീകരണം - പകർച്ചവ്യാധി 4പതിരായ 4പവർത്തനങ്ങളു് , വരൾച്ചയും കൂടിവെള്ള വിതരണവുമായി ബന്ധപ്പെട്ട വിഷയങ്ങൾ തുടങ്ങിയവ സംബന്ധിച്ച മാർഗ്ഗനിർദ്ദേശങ്ങൾ	Download PDF
No.ITSF-2/7/2020/Fin-(1)	Circular	04-05-2020	Finance	Request for exemption from salary reduction in the case of those who contributed one month gross salary to CMDRF in the wake of Covid -19 pandemic - Instructions to be followed for exempting such employees in SPARK- Issued	Download PDF
No.R-10/2020(SS)	Official Memorandum	04-05-2020	High Court	Extension of general lock down - Functioning of Courts	Download PDF
DCKKD/2803/2020/F3(2)	Order	04-05-2020	Collectorate	കൊവിഡ് 19(കോറോണ വൈറസ്) രോഗബാധ വ്യാപനം തടയുന്നത് - സാക്ഷ്യം ഡിസ്റ്റൻസിങ്ങ് ടീമിന്റേ 4പവർത്തനങ്ങൾ സംബന്ധിച്ച ഉത്തരവ്	Download PDF
DCKNR/1396/2020/DM1	Order	04-05-2020	Collectorate	കൊവിഡ് 19 - 4പതിരായ നടപടികളുടെ ഭാഗമായി പോതുവിതരണ സംവിധാനം വഴി അനുവദിക്കുന്ന റേഷൻ / കിറ്റുകളുടെ വിതരണം സംബന്ധിച്ച്.	Download PDF
G.O. (Rt.)No.1412/2020/GAD	Order	03-05-2020	GAD	GAD- Novel Corona Virus disease containment activities- - Functioning of Covid-19 War Room extended - orders issued	Download PDF
G.O (Ms) No. 85/2020/GAD	Order	02-05-2020	GAD	GAD- COVID-19- regulations to contain the COVID-19 pandemic- general lock down order- extension of general lock down- orders issued	Download PDF
DCPTA/1185/2020/DM5	Order	02-05-2020	Collectorate	കൊവിഡ് 19 വൈറസ് രോഗബാധ - അടിയന്തിരപ്പെട്ട 4പതിരായ 4പവർത്തനങ്ങൾ നടപ്പാക്കുന്നത് - ക്വാറന്റൈനിൽ താമസിപ്പിക്കുന്നതിനുള്ള 4കമീകരണങ്ങൾ	Download PDF
G.O. (R.T) No. 1411/2020/GAD	Order	02-05-2020	GAD	Novel Corona Virus disease (COVID-19)- Interstate movement of migrant labourers, tourists, students and other persons stranded in Kerala and other States owing to national lock down- guidelines for infrastructure arrangements and procedures- orders	Download PDF
G.O. (M.S) No. 84/2020/GAD	Order	02-05-2020	GAD	GAD- Covid-19 containment activities- Interstate transit of persons stranded due to lock down- Appointment of officers- orders issued	Download PDF
Press Release	Press Release	02-05-2020	GoK	ലോക്ക്ഡൗണിനെത്തുടർന്ന് അന്യസംസ്ഥാനങ്ങളിൽ കൂടുങ്ങിപ്പോയ മലയാളികൾക്ക് തിരികെ വരുന്നതിന് പാസുകൾ നൽകുന്നു	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
DCTSR/14476/2020-H4	Order	02-05-2020	Collectorate	കൊവിഡ് 19 - 4പതിരായ4പവർത്തനങ്ങൾക്ക് അധ്യാപകരെ നിയോഗിച്ച ഉത്തരവാകുന്നു	Download PDF
No. M2-9301/2020(1)	Guidelines	02-05-2020	Food & Civil Supplies	സപ്തകാലം - മാർക്കറ്റിംഗ് - കൊവിഡ് 19 - ലോക്ക് ഡൗൺ - അതിജീവന കിറ്റുകളുടെ തയ്യാറാക്കലും വിതരണവും - സംബന്ധിച്ച്	Download PDF
Press Release	Press Release	01-05-2020	Home	EXTENSION OF LOCK DOWN FOR A FURTHER PERIOD OF TWO WEEKS WITH EFFECT FROM MAY 4, 2020.	Download PDF
No.40-3/2020-DM-I(A)	Order	01-05-2020	Home	New Guidelines on the measures to be taken by Ministries/ Departments of Government of India, State/ UT Governments and State/ UT authorities for containment of COVID-19 in the country for the extended period of National Lockdown for a further period of two weeks with effect from 4th May, 2020	Download PDF
G.O. (P) No. 54/2020/ FIN	Order	01-05-2020	Finance	ജീവനക്കാരുടെയും , അധ്യാപകരുടെയും സർക്കാരിലേക്കുള്ള വായ്പയും മുൻകൂറും 2020 ഏപ്രിൽ മാസം മുതൽ ആഗസ്റ്റ് വരെയുള്ള മാസങ്ങളിലെ തിരിച്ചടവ് മാറ്റിവേക്കുന്നത് സംബന്ധിച്ച്	Download PDF
No. 60(8)/Pol.5/2020/ GAD	Guidelines	01-05-2020	GAD	Covid 19 Operational guidelines for outward movement of stranded persons other than migrant laborers from kerala - standard procedures forwarding	Download PDF
No. 6936/Leg.A1/2020/ Law.	Ordinance	30-04-2020	Law	THE KERALA DISASTER AND PUBLIC HEALTH EMERGENCY (SPECIAL PROVISIONS) ORDINANCE, 2020	Download PDF
G.O. (R.T) No. 69/2020/ LSGD	Order	30-04-2020	LSGD	കൊവിഡ് 19 4പതിരായ, ആശ്വാസ നടപടികൾ - ഗുരുതര രോഗം ബാധിച്ചവർക്ക് ജീവൻ രക്ഷാ മരുന്നുകൾ ലഭ്യമാക്കുവാൻ തദ്ദേശഭരണ സ്ഥാപനങ്ങൾക്ക് മാർഗ്ഗനിർദ്ദേശങ്ങൾ നൽകി ഉത്തരവു പുറപ്പെടുവിക്കുന്നു	Download PDF
Guide	Guidelines	30-04-2020	Health and Family welfare	കൊവിഡ് - 19 ഫൈസിലിറ്റേറ്റേർമാർക്കുള്ള ടഗഡ് - 4പതികരണ നിയന്ത്രണ നടപടികൾ എ.എൻ.എം (ANM), ആശ (ASHA), എ.ഡബ്ല്യു (AWW) എന്നിവർക്കുള്ള പരിശീലന ടൂളി കിറ്റ്	Download PDF
Guide	Guidelines	30-04-2020	Health and Family welfare	കൊവിഡ് 19 ബുക്ക് ഓഫ് ലൈഫ് - 4പതിരായ രോഗത്തെ ആരോഗ്യ 4പവർത്തകർക്കും സന്നദ്ധ 4പവർത്തകർക്കുമുള്ള 4പതികരണങ്ങളും നിർദ്ദേശങ്ങളും	Download PDF
Reference Guide	Guidelines	30-04-2020	Health and Family welfare	Response to COVID 19 - Milestones in the Battle against COVID 19	Download PDF
G.O. (R.T) No. 439/2020/DMD	Order	30-04-2020	Disaster Management	Entrusting M/S Tata Projects Limited for the construction of COVID 19 Hospital - an Emergency Quarantine and Isolation Facility at Kasaragode	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (R.T) No. 440/2020/DMD	Order	30-04-2020	Disaster Management	Establishment and Management of COVID Firstline Treatment Centre - Roles, Responsibilities and Financial Provisions General Administrative Sanction accorded	Download PDF
G.O. (R.T) No. 819/2020/H&FWD	Order	30-04-2020	Health and Family welfare	കൊവിഡ് 19 ചികിത്സയും 4പതിരായവുമായി ബന്ധപ്പെട്ട 4പവർത്തനങ്ങളിൽ മനരിട്ട് ഇടപെടുന്ന 2020 ഏപ്രിൽ 30 ന് വിരമിച്ച ജീവനക്കാരുടെ സേവനം തുടർന്നും ലഭ്യമാക്കുന്നതിന് അനുമതി നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (P) No. 53/2020/Fin	Order	30-04-2020	Finance	In exercise of the powers conferred by sections 4 and 5 of the Kerala Disaster and Public Health Emergency (Special Provisions) Ordinance, 2020 (30 of 2020) and in view of the declaration of Corona Virus (Covid-19) as a notified disaster affecting the entire State, there is a public health emergency situation, the Government of Kerala hereby defer the pay and allowances in part, to the extent of 20 percent of the total monthly pay and allowances (six days) due to an employee and teacher employed by the Government, an employee employed in any institution owned or controlled or aided by the Government	Download PDF
No. 6862/Leg.I2/2020/ Law.	Order	30-04-2020	Law	further to amend the Payment of Salaries and Allowances Act, 1951. Preamble.—WHEREAS, Kerala is grappling with Corona Virus (COVID-19) pandemic which has severe health and economic ramifications for the people of the State; AND WHEREAS, the Corona Virus (COVID-19) pandemic has shown the importance of expeditious relief and assistance and therefore, it is necessary to take certain emergency measures to prevent and contain the spread of said pandemic;AND WHEREAS, in order to manage and control such situation, it has become necessary to raise resources by reduction of salaries and allowances of Ministers, Speaker, Deputy Speaker, Leader of the Opposition, Chief Whip and the Members of the Kerala Legislative Assembly;This Ordinance may be called the Payment of Salaries and Allowances (Amendment) Ordinance, 2020.	Download PDF
DCKLM/1827/2020 - DM2	Circular	30-04-2020	Collectorate	കൊവിഡ് 19 4പവാസി ക്ഷേമ കേന്ദ്രം - ജീവനക്കാരെ നിയോഗിച്ച് ഉത്തരവാക്കുന്നത് സംബന്ധിച്ച്	Download PDF
G.O. (R.T) No. 69/2020/ LSGD	Order	30-04-2020	LSGD	തദ്ദേശസ്വയംഭരണ വകുപ്പ്- കൊവിഡ് 19- 4പതിരായ ആശ്വാസ നടപടികൾ - ഗുരുതര രോഗം ബാധിച്ചവർക്ക് ജീവൻ രക്ഷാ മരുന്നുകൾ ലഭ്യമാകുവാൻ തദ്ദേശസ്വയംഭരണ സ്ഥാപനങ്ങൾക്ക് മാർഗനിർദ്ദേശങ്ങൾ നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O (Rt) No. 1404/2020/ GAD	Order	29-04-2020	GAD	GAD- Novel Corona Virus disease (COVID-19)- bringing back the people who are stranded in other States due to Lock Down- orders issued	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
No.P2-737/2020/Try	Circular	29-04-2020	Treasury	കൊവിഡ് 19 രോഗ വ്യാപന ഭീഷണിയുടെ വേളിച്ചെത്തിൽ സാധ്യമായ സുരക്ഷാ മുൻകരുതലുകൾ ഉറപ്പു വരുത്തി 2020 മേയ് മാസം ആദ്യേ ഭവനസംരക്ഷണത്തിൽ ഏറ്റെടുക്കുന്നതിനുള്ള മാർഗ്ഗ നിർദ്ദേശങ്ങൾ	Download PDF
Expert Report	Report	29-04-2020	KILA	കോറോണ അതിജീവനകാലത്തെ കേരളത്തിലെ സ്മൃതികളും പേൺകുട്ടികളും നേരിടുന്ന ഗാർഹികാതിക്രമങ്ങളെക്കുറിച്ചും അതിനേതിനു ന്യായീകരിക്കേണ്ടതായ നടപടികൾ സംബന്ധിച്ചുമുള്ള പഠന റിപ്പോർട്ട്	Download PDF
DCKTM/2717/2020-DM1	Order	29-04-2020	Collectorate	കൊവിഡ് 19 - കൊട്ടയം ജില്ല - റേഡ് സൊണായി 4പദ്ധതിയിൽ - നിയന്ത്രണങ്ങൾ ഏർപ്പെടുത്തി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
No.40-3/2020-DM-I(A)	Order	29-04-2020	Home	In continuation of Ministry of Home Affairs's Orders No.40-3/2020- DM-I(A) dated is" April, 2020, 16th April, 2020, 19th April 2020, 21st April 2020 and 24th April 2020 and in exercise of the powers, conferred under Section 10(2)(1) of the Disaster Management Act, the undersigned, in his capacity as Chairperson, National Executive Committee, hereby orders to includethe following in the consolidated revised guidelines for strict implementation by Ministries /Departments of Government of India, State/Union Territory Governments and State /Union Territory Authorities	Download PDF
G.O. (R.T) No. 802/2020/LSGD	Order	29-04-2020	LSGD	തദ്ദേശസ്വയംഭരണ സ്ഥാപനങ്ങളുടെ ഉടമസ്ഥതയിലുള്ള കെട്ടിടങ്ങളുടെ വാടക കുടിശ്ശിക, പിഴയും പിഴ പലിശയും ഒഴിവാക്കി ഒടുക്കുന്നതിന് സമയ പരിധി ഭേദിപ്പിച്ചു നൽകി ഉത്തരവാകുന്നു	Download PDF
No. 4292864/B3/2020/ F&CSD	Circular	28-04-2020	Food & Civil Supplies	പെൺ കാർഡ് ഇല്ലാത്തവർക്ക് കാർഡ് ലഭ്യമാക്കുന്നത് സംബന്ധിച്ച്	Download PDF
G.O. (P) No. 50/2020/ FIN	Order	28-04-2020	Finance	സംസ്ഥാന സർക്കാർ ജീവനക്കാരുടെ വായ്പയും മുൻകൂറും 2020 ഏപ്രിൽ മുതൽ ആഗസ്റ്റ് വരെയുള്ള മാസങ്ങളിലെ തിരിച്ചടവ് മാറ്റി വയ്ക്കുന്നത് സംബന്ധിച്ച് ഉത്തരവ്	Download PDF
G.O. (R.T) No. 51/2020/ ITD	Order	27-04-2020	IT	Electronic and Information technology department - Resurgent measures to tide over economic crisis faced by IT/TeS companies / Establishments in Government IT Parks due to the outbreak of COVID-19 Pandemic	Download PDF
P7-13617/2014/DUA Vol2	Circular	27-04-2020	Urban Affairs	പെൺഷൻ വിഭാഗം - നാഷണൽ പെൺഷൻ സ്കീം - ഏപ്രിൽ 2020 മുതൽ 5 മാസത്തെകൈ എൻ പി എസ് തുക ഒടുക്കുന്നത് സംബന്ധിച്ച്	Download PDF
No.E1-1380/2020/Try	Circular	27-04-2020	Treasury	04/2020 മുതൽ 08/2020 വരെ ശമ്പളത്തിൽ നിന്നും മാറ്റി വയ്ക്കുന്ന തുക നിക്ഷേപിക്കുന്നതിനു STSB അക്കൗണ്ട് തുടങ്ങുന്നത് - മാർഗ്ഗനിർദ്ദേശം	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
No.E1-1209/2020/Try	Circular	27-04-2020	Treasury	Ashoc Arrangements for Paperless Bill for the salary Claim of 4/2020 - Extended	Download PDF
G.O. (P) No. 48/2020/ FIN	Order	27-04-2020	Finance	Adhoc Arrangement for paperless bill for Claiming the remuneration for the months in the lock down period of Temporary employees with TEN in SPARK - Approved	Download PDF
G.O. (P) No. 49/2020/ FIN	Order	27-04-2020	Finance	Deferment of Surrender of Earned Leave - Exemption - Order Issued	Download PDF
G.O. (R.T) No. 786/2020/LSGD	Order	27-04-2020	LSGD	തദ്ദേശസ്വയംഭരണ വകുപ്പ് സംസ്ഥാനത്തെ ഓരോ മെമ്പലിലും ഇളവ് ലഭിക്കുന്ന തീയതി മുതൽ പി എം എ I വ ജി, പി എം എസ് I വ, ഡബ്ബിയു ഡി സി എന്നിവയുടെ 4പവർത്തങ്ങൾ പുനരാരംഭിക്കുവാനുള്ള അനുമതി നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 784/2020/LSGD	Order	26-04-2020	LSGD	തദ്ദേശസ്വയംഭരണ വകുപ്പ് - കോവിഡ് 19 തദ്ദേശസ്വയംഭരണ സ്ഥാപനങ്ങളിലെ ഭരണ സമിതിയുടേയും ജീവനക്കാരുടേയും ഏകോപിച്ചുള്ള 4പവർത്തനങ്ങൾ - നിർദ്ദേശങ്ങൾ പുറപ്പെടുവിക്കുക ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
FAQ	FAQ	26-04-2020	GoK	ലോക്ക്ഡൗൺ കാലത്തെ യാത്ര ചെയ്യുമ്പോൾ പാലിക്കേണ്ടതു എന്താക്കെ , സംശയങ്ങളും ഉത്തരങ്ങളും	Download PDF
J 3-5524/2020	Circular	26-04-2020	Panchayat	കോവിഡ് -19 വ്യാപനം തടയുന്നതിനുള്ള 4പവർത്തനങ്ങള് - പഞ്ചായത്ത് വകുപ്പുമായി ബന്ധപ്പെട്ട ഓഫീസുകൾ 4പവർത്തിക്കുന്നതിനുള്ള മാർഗ്ഗനിർദ്ദേശങ്ങൾ	Download PDF
G.O. (R.T) No. 782/2020/LSGD	Order	25-04-2020	LSGD	സംസ്ഥാനത്ത് കോവിഡ് 19 4പതിരായ ആശ്വാസ നടപടികളുടെ ഭാഗമായി നടത്തുന്ന കമ്മ്യൂണിറ്റി കിച്ചുണുകളുടെ സുഗമമായ 4പവർത്തനത്തിന് കൂടുതലായ വനിതകളെ കൂടാതെ പാലക തൊഴിലാളികളെ കൂടി നിയോഗിക്കുന്നതിന് അനുമതി നൽകി ഉത്തരവാകുന്നു	Download PDF
G.O. (M.S) No. 82/2020/ GAD	Order	25-04-2020	GAD	COVID 19- containment activities- Revised consolidated guidelines- amended- orders issued	Download PDF
G.O. (P) No. 47/2020/ FIN	Order	24-04-2020	Finance	Lockdown in the wake of COVID-19 Absent days as "On Duty" for the employees in State Public Sector Undertakings	Download PDF
No.40-3/2020-DM-I(A)	Order	24-04-2020	Home	Amendments in Consolidated Revised Guidelines on measures to be taken by Ministries/Departments of Government of India, State/ UT Governments and State/ UT authorities for Containment of COVID-19 in the Country	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (R.T) No. 219/2020/F&P	Order	24-04-2020	Fisheries	കൊവിഡ്-19 പശ്ചാത്തലത്തിൽ ഉളിനാടൻ മത്സ്യബന്ധനം / മത്സ്യ കൃഷി നടത്തുന്നത് സംബന്ധിച്ച മാർഗ്ഗരേഖ	Download PDF
No./31/F2/2020/Health	Guidelines	24-04-2020	Health and Family welfare	Advisory COVID 19 - Testing augmentation - Xpert - SARS - CoV-Testing	Download PDF
No./31/2020/Health	Guidelines	24-04-2020	Health and Family welfare	Reallocation of Laboratories with districts for sending routine covid samples for testing by RT-PCR	Download PDF
G.O. (M.S) No. 80/2020/GAD	Order	23-04-2020	GAD	Covid 19 - Containment Activities - revised Consolidated Guidelines	Download PDF
G.O. (P) No. 46/2020/FIN	Circular	23-04-2020	Finance	കൊവിഡ് പകർച്ചവ്യാധിയുടെ പശ്ചാത്തലത്തിൽ ഉടലെടുത്ത സാമ്പത്തിക 4പതിസന്ധി തരണം ചെയ്യുന്നതിനായി ജീവനക്കാരുടെയും അദ്ധ്യാപകരുടെയും ശമ്പളത്തിൽ ഒരു ഭാഗം താത്കാലികമായി മാറ്റിവെച്ച് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
No. 1/12020-E-II(B)	Official Memorandum	23-04-2020	Home	Freezing of Dearness Allowance to Central Government Employees and Dearness Relief to Central Government Pensioners at Current Rates till July 2021	Download PDF
G.O. (P) No. 35/2020/Co-op	Order	23-04-2020	Department of Cooperation	Under sub section (1) of section 28 of the Kerala Co-operative Societies Act, 1969(21 of 1969), the general body of a society shall constitute a committee for a period of five years in accordance with the bylaws and entrust the management of the affairs of the society	Download PDF
No.SS1/70/2020/GAD	Circular	22-04-2020	GAD	കൊവിഡ് 19 വ്യാപനം തടയുന്നതിനായുള്ള 4പവർത്തനങ്ങളും - സംസ്ഥാന സർക്കാർ ഓഫീസുകൾ 4പവർത്തിക്കുന്നതിനുള്ള മാർഗ്ഗ നിർദ്ദേശങ്ങൾ	Download PDF
CG-DL-E-22042020-219108	Ordinance	22-04-2020	Home	The Epidemic Diseases (Amendment) Ordinance 2020	Download PDF
No.2145/P2/SSK	Circular	22-04-2020	SSK	2020 - 21 കോറോണ I വറസ് (കൊവിഡ് 19) വ്യാപനം തടയുന്നതിന്റേ ഭാഗമായി അടുത്തെ അധ്യായന വർഷാരംഭത്തിൽ കുട്ടികൾക്ക് മുഖാവരണം (മാസ്ക്) വിതരണം - നിർദ്ദേശം	Download PDF
G.O. (M.S) No. 65/2020/LSGD	Order	22-04-2020	LSGD	മഹാത്മാഗാന്ധി ദേശീയ 4ഗ്രാമീണ തൊഴിലുറപ്പ് പദ്ധതി - കൊവിഡ് 19 പശ്ചാത്തലത്തിൽ തൊഴിലുറപ്പ് പദ്ധതിക്ക് കീഴിൽ 4പവർത്തികൾ ആരംഭിക്കുന്നത് - മാർഗ്ഗനിർദ്ദേശങ്ങൾ	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (R.T) No. 770/2020/H&FWD	Order	22-04-2020	Health and Family welfare	Covid 19 List of Revised Hot Spots - Modified	Download PDF
NHM/1298/csd/2020/SPMSU	Circular	21-04-2020	NHM	രാജ്യത്തെ കോവിഡ് 19 പടർന്നു പിടിക്കുന്ന സാഹചര്യത്തിൽ ആശാ 4പവർത്തകർക്ക് ഇൻസൻറീവ് നൽകുന്നത് സംബന്ധിച്ച്	Download PDF
G.O. (P) No. 56/2020/TD	Order	21-04-2020	Tax	In exercise of the powers conferred by sections 24 and 29 of the Abkari Act, 1 of 1077, the Government of Kerala hereby make the following rules further to amend the Kerala Foreign Liquor Rules issued under notification No. S.R4-1859/52/RD dated 17th January, 1953 and published in the Travancore-Cochin Gazette Extraordinary No. 2 dated 17th January, 1953	Download PDF
G.O. (R.T) No. 771/2020/LSGD	Order	21-04-2020	LSGD	മഹാത്മാഗാന്ധി ദേശീയ തോഴിലുറപ്പ് പദ്ധതി - കോവിഡ് 19 പശ്ചാത്തലത്തിൽ 4പവർത്തി എടുക്കുന്ന തോഴിലാളികൾക്ക് ആവശ്യമായ ഫൈയിസ് മാസ്ക്സ് കയ്യുറകളും നൽകുന്നതിന് 4ഗാമപഞ്ചായത്തുകളുടെ തനത് / ജനറൽ പർപ്പസ്സ് ഫണ്ട് വിനിയോഗിക്കുന്നതിന് അനുമതി നൽകി ഉത്തരവാകുന്നു	Download PDF
G.O. (R.T) No. 765/2020/LSGD	Order	20-04-2020	LSGD	കോവിഡ്-19 4പതിരായ ആശ്വാസനടപടികളുടെ ഭാഗമായി തദ്ദേശസ്വയംഭരണ സ്ഥാപനങ്ങളുടെയും കുടുംബശ്രീകളുടെയും നേതൃത്വത്തിൽ നടത്തുന്ന കമ്മ്യൂണിറ്റി കിച്ചനുകളിൽ വിനിയോഗിക്കുന്ന പാചക ജോലിക്കാർക്ക് ഹോണററിയം നിശ്ചയിച്ച് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
R.10/2020(SS)	Official Memorandum	20-04-2020	High Court	Functioning of Courts and hearing and disposal of cases following relaxation in the restrictions on account of lock down - clarification	Download PDF
No.DB4/531/20/C.E/LSGD	Circular	20-04-2020	LSGD	സാങ്കേതിക വിഭാഗം - "മുഖ്യമന്ത്രിയുടെ തദ്ദേശ റോഡ് പുനരുദ്ധാരണ പദ്ധതി" [Chief Minister's Local Roads Rebuild Project (CMLRRP)] യുടെ 4പവർത്തികളിൽ - നിർവഹണം സംബന്ധിച്ച്	Download PDF
G.O. (R.T) No. 740/2020/H&FWD	Order	20-04-2020	Health and Family welfare	Health and Family Welfare Department - Covid-19 - List of Hot Spots - Modified -Orders issued	Download PDF
No.D.C.1/188/2020/LSGD	Circular	20-04-2020	LSGD	കോവിഡ് 19 വിവിധ ഓസാതസ്സുകളിൽ നിന്നും ബയോമേഡിക്കൽ മാലിന്യവും ഖരമാലിന്യവും ശേഖരിച്ച് സംസ്കരിക്കുന്നത് സംബന്ധിച്ച്	Download PDF
G.O. (R.T) No. 236/2020/Norka	Order	20-04-2020	NORKA	കേരളത്തിലേയ്ക്ക് മടങ്ങിയെത്തുന്ന 4പവാസികൾക്കുള്ള 4കമീകരണം - മാർഗ്ഗ നിർദ്ദേശങ്ങൾ പുറപ്പെടുവിച്ചും , സേക്ടറിതല സമിതി രൂപീകരിച്ചും ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 750/2020/H&FWD	Order	20-04-2020	Health and Family welfare	Covid 19 - List of revised Hot Spots - Modified	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (P) No. 44/2020/ FIN	Order	20-04-2020	Finance	Adhoc Arrangement for Paperless bill for Salary Clime of 4/2020 by all Departments- Extension Approved	Download PDF
No./31/F2/2020/Health	Guidelines	20-04-2020	Health and Family welfare	Advisory for ensuring TB Services in Kerala in the Context of COVID 19	Download PDF
PAN/5771/2020-B1(DP)	Circular	19-04-2020	Panchayat	കൊവിഡ്- 19 - തദ്ദേശ സ്വയംഭരണ സ്ഥാപനങ്ങളിൽ ജനന-മരണങ്ങൾ റിപ്പോർട്ട് ചെയ്യുന്നതിനും രജിസ്റ്റർ ചെയ്യുന്നതിനുമുള്ള കാലാവധി ദീർഘിപ്പിച്ചു നൽകുന്നു	Download PDF
Guideline	Guidelines	19-04-2020	Police	കൊവിഡ് 19 രോഗ നിയന്ത്രണത്തിന് പുതിയ മാർഗ്ഗരേഖ	Download PDF
G.O. (M.S) No. 68/2020/ H&FWD	Order	19-04-2020	Health and Family welfare	Covid-19 - Identification of Hot Spots	Download PDF
G.O. (R.T) No. 293/2020/ID	Order	18-04-2020	Industries	Covid - 19 Exemption from Lockdown from 20th April 2020 - Conditions / Standard Opration Procedure	Download PDF
L.R.E1-231/2020	Circular	18-04-2020	Revenue	കൊവിഡ് 19 റേവന്യൂ ഓഫീസുകൾ തുറന്നു 4പവർത്തിക്കുന്നത് സംബന്ധിച്ച്	Download PDF
G.O. (R.T) No. 762/2020/LSGD	Order	18-04-2020	LSGD	കൊവിഡ് 19 4പതിരായങ്ങളുമായി ഏകോപിച്ച് നഗരസഭയിലെ ശുചീകരണ 4പവർത്തനങ്ങളും മഴക്കാല പൂർവ്വ ശുചീകരണ 4പവർത്തനങ്ങളും നടപ്പിലാക്കുന്നത്	Download PDF
FAQ	FAQ	17-04-2020	Health and Family welfare	കൊവിഡ് 19 രോഗികൾ അറിയാൻ - സംശയങ്ങളും ഉത്തരങ്ങളും - പാർട്ട് 1	Download PDF
G.O. (M.S) No. 78/2020/ GAD	Order	17-04-2020	GAD	Covid 19 - Containment Activities - revised consolidated guidelines	Download PDF
A5/25/2020-TC	Guidelines	17-04-2020	MVD	കൊവിഡ് 19- ലോക്ക്ഡൗൺ-2020- ഏപ്രിൽ 20 മുതലുള്ള ഇളവുകള് - ഓഫീസുകളുടെ 4പവർത്തനം സംബന്ധിച്ച മാർഗ്ഗ നിർദ്ദേശങ്ങൾ	Download PDF
G.O. (R.T) No. 760/2020/LSGD	Order	17-04-2020	LSGD	തദ്ദേശസ്വയംഭരണ വകുപ്പ് - കൊവിഡ് 19 വ്യാപനം തടയുന്നതിന് ലോക്ക് ഡൗൺ ഏർപ്പെടുത്തിയ സാഹചര്യത്തിൽ 2020-21 കാലയളവിലെക് വിമുക്ത ഭടന്മാർ / വിമുക്ത ഭടന്മാർ ഭാര്യ/ വിധവ എന്നിവർ വസ്തു നൽകി ഇളവിന് സാക്ഷ്യപത്രം ബന്ധപ്പെട്ട തദ്ദേശഭരണ സ്ഥാപനത്തിൽ സമർപ്പിക്കേണ്ട സമയപരിധി 30 -06 -2020 വരെ ദീർഘിപ്പിച്ച് നൽകി ഉത്തരവ് പുറപ്പെടുവിടുന്നു	Download PDF
G.O. (P) No. 42/2020/Fin	Order	16-04-2020	Finance	Kerala Service Rule - Periodical Surrender of Earned Leave - Deferred - Order Isued	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (R.T) No. 234/2020/Norka	Order	16-04-2020	NORKA	കൊവിഡ് 19 ന്റെ പശ്ചാത്തലത്തിൽ 4പവാസികൾക്കു വിദേശ രാജ്യങ്ങളിലേക്ക് ജീവൻ രക്ഷാ മരുന്നുകൾ ലഭ്യമാക്കുന്നത് സംബന്ധിച്ചുള്ള മാർഗ്ഗ നിർദ്ദേശങ്ങൾ	Download PDF
G.O. (R.T) No. 522/2020/HEDN	Order	16-04-2020	Higher Education	കൊവിഡ് 19 ലോക്ക്ഡൗണിന് ശേഷം അക്കാദമിക 4പവർത്തനങ്ങളും പരീക്ഷാ നടത്തിപ്പും പൂർത്തിയാക്കുവാൻ വേണ്ട ക്രമീകരണങ്ങൾ സംബന്ധിച്ചും ഇത്തരം സാഹചര്യങ്ങളെ അതിജീവിക്കുവാൻ സ്ഥാപനങ്ങൾ ഭാവിയിൽ ട്രക്കിംഗുള്ള നടപടികളെ സംബന്ധിച്ചും പഠനം നടത്തി വിപ്ലവീയ സമർപ്പിക്കുവാനായി ഒരു സമിതി രൂപീകരിച്ച് ഉത്തരവു പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 725/2020/H&FWD	Order	16-04-2020	Health and Family welfare	Covid 19 Antibody Testing (IgG and IgM) in the private sector in Kerala Order Issued	Download PDF
No./31/F2/2020/Health	Guidelines	16-04-2020	Health and Family welfare	Advisory for restarting immunization activities regarding Universal Immunization Programme in the state	Download PDF
No.40-3/2020-DM-I(A)	Order	15-04-2020	Home	Consolidated Revised Guidelines on measures to be taken by Ministries/ Departments of Government of India, State/ UT Governments and State/ UT authorities for Containment of COVID-19 in the Country	Download PDF
No.40-3/2020-DM-I(A)	Order	15-04-2020	Home	രാജ്യത്തെ COVID-19 നിയന്ത്രിക്കുന്നതിനായി ഭാരത സർക്കാർ, മന്ത്രാലയങ്ങൾ / വകുപ്പുകൾ, സംസ്ഥാന / കേന്ദ്ര ഭരണ സർക്കാരുകളും, സംസ്ഥാന / കേന്ദ്ര ഭരണ അധികാരികൾ സ്വീകരിക്കേണ്ട നടപടികളുടെ പുതുക്കിയ ഏകീകൃത മാർഗ്ഗനിർദ്ദേശങ്ങൾ	Download PDF
G.O. (R.T) No. 1330/2020/GAD	Order	15-04-2020	GAD	Covid-19 - regulations in the form of lock down- interstate travel of persons during lock down period-orders issued	Download PDF
G.O. (R.T) No. 1328/2020/GAD	Order	14-04-2020	GAD	GAD- Novel Corona Virus disease containment activities- regulations to contain the Covid-19 pandemic- functioning of Covid-19 War Room extended - orders issued	Download PDF
Go (Ms) No.74/2020/GAD	Order	14-04-2020	GAD	GAD കൊവിഡ് 19 4പതിരായ 4പവർത്തനങ്ങൾ - ലോക്ക് ഡൗൺ മാനദണ്ഡങ്ങളിൽ ഇളവുകൾ നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
No (C.S)A.10-516/2020	Guidelines	13-04-2020	Food & Civil Supplies	കൊവിഡ് -19 പലവൃഞ്ചന കിറ്റ് വിതരണം - പൊർട്ടബിളിറ്റി അനുവധിക്കുന്നത് സംബന്ധിച്ച്	Download PDF
G.O. (R.T) No. 233/2020/Norka	Order	13-04-2020	NORKA	കൊവിഡ് 19 - ന്റെ പശ്ചാത്തലത്തിൽ അർഹരായ 4പവാസി മലയാളികൾക്ക് അടിയന്തിര ധനസഹായ അനുവദിച്ചുകൊണ്ട് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (R.T) No. 521/2020/HEDN	Circular	13-04-2020	Higher Education	ലോക് ഡൗൺ സംസ്ഥാനത്തെ സർവകലാശാലകൾ, സർക്കാർ എസ്സെസ്, സർക്കാർ നിയമിത സ്വയംഭരണ കോളേജുകൾ, സർക്കാർ എസ്സെസ് എഞ്ചിനീയറിങ് കോളേജുകൾ, പോളിടെക്നിക് കോളേജുകൾ എന്നിവിടങ്ങളിലെ വിദ്യാർത്ഥികൾക്ക് ഹോസ്റ്റൽ ഫെീ, ലാബറി ഫെൻ എന്നിവ 2020 മാർച്ച് 23 മുതൽ മേയ് 15 വരെ ഒഴിവാക്കി	Download PDF
No. (C.S) A.10 - 516/2020	Guidelines	13-04-2020	Food & Civil Supplies	പോതു വിതരണം - കൊവിഡ് 19 - പലവ്യജ്ഞന കിറ്റ് വിതരണം - പൊർട്ടബിളിറ്റി അനുവദിക്കുന്നത് സംബന്ധിച്ച്	Download PDF
No.90/S.S.1/2020/GAD	Circular	11-04-2020	GAD	കൊവിഡ് 19 വ്യാപനം തടയുന്നതിനുള്ള 4പതിരായ 4പവർത്തനങ്ങൾ ലോക്ഡൗൺ ഏർപ്പെടുത്തുന്നതുമായി ബന്ധപ്പെട്ട കെഎസ്-സംസ്ഥാന സർക്കാരുകൾ പുറപ്പെടുവിച്ച മാർഗ്ഗനിർദ്ദേശങ്ങളുടെ ക്രമീകരണം	Download PDF
G.O. (M.S) No. 62/2020/LSGD	Order	11-04-2020	LSGD	തദ്ദേശസ്വയംഭരണ സ്ഥാപനങ്ങളുടെ 2020-21 വാർഷിക പദ്ധതി - അംഗീകാര നടപടികൾ പൂർത്തിയാക്കുവാനുള്ള മാർഗ നിർദ്ദേശങ്ങൾ	Download PDF
G.O. (M.S) No. 71/2020/GAD	Order	10-04-2020	GAD	കൊവിഡ് 19 4പതിരായ 4പവർത്തനങ്ങളെ - ലോക് ഡൗൺ മാനദണ്ഡങ്ങളിൽ ഇളവുകൾ നൽകി ഉത്തരവ്	Download PDF
G.O. (R.T) No. 1319/2020/GAD	Order	10-04-2020	GAD	Novel Corona Virus disease regulations to contain the Covid 19 pandemic operation of food processing units clarification orders issued	Download PDF
G.O. (M.S) No. 70/2020/GAD	Order	09-04-2020	GAD	GAD-Covid -L9 - general lock down - exemption categories-permission to function rubber plantation and factories involved in latex processing and production of rubber / surgical gloves	Download PDF
G.O. (M.S) No. 69/2020/GAD	Order	09-04-2020	GAD	GAD-Covid-19 - general lock down- exemption categories-permission for authorised plumbers and electricians to undertake maintenance works in residential houses and flats	Download PDF
G.O. (M.S) No. 62/2020/H&FWD	Order	09-04-2020	Health and Family welfare	Health and Family Welfare Department- Medical Education Department- Establishment- Creation of 273 posts at Government Medical College,Kasargod- Sanction- Accorded	Download PDF
N.M.A 3/24295/2019/D.G.E	Circular	08-04-2020	General Education	സംസ്ഥാന സ്കൂൾ ഉച്ചഭക്ഷണ പദ്ധതി - സ്കൂൾ പാചക തൊഴിലാളികൾക്ക് 2020 മാർച്ച് മാസത്തെ ഓണററിയം ഇനത്തിലുള്ള കുടിശ്ശിക - അലാട്ട്മെന്റായി അനുവദിച്ചു	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (R.T) No. 746/2020/LSGD	Order	08-04-2020	LSGD	കൊവിഡ്-19 വ്യാപനം തടയുന്നതിന് ലോക്ക്ഡൗൺ ഏർപ്പെടുത്തിയ സാഹചര്യത്തിൽ ഒരു അർദ്ധ വർഷത്തേക്ക് അറുപതു ദിവസമോ അതിൽ കൂടുതലോ ആയ കാലയളവിലേക്ക് തുടർച്ചയായി ഒരു ആവശ്യത്തിനും ഉപയോഗിക്കാതെ ഒഴിഞ്ഞു കിടക്കുന്ന കെട്ടിടങ്ങൾക്ക് വസ്തുനികുതിയിളവ് (വെക്കൻസി റേമിഷൻ) അനുവദിക്കുന്നതിനുള്ള അപേക്ഷ ബന്ധപ്പെട്ട തദ്ദേശസ്വയംഭരണ സ്ഥാപനത്തിൽ സമർപ്പിക്കാനുള്ള കാലാവധി 2020 ജൂൺ വരെ ദീർഘിപ്പിക്കുന്നു	Download PDF
No-103/FM3/2020/LSGD	Circular	08-04-2020	LSGD	LSGD-Utilization of 14th Finance Commission's (FFC) Grants for tackling COVID-19 pandemic in Gram Panchayats-Extension of time limit for utilizing FFC grants up to 31/3/2021-instruction	Download PDF
G.O. (M.S) No. 68/2020/GAD	Order	08-04-2020	GAD	General Administration Department - COVID 19 - General lock down - exemption -Permission for the staff of Irrigation Department in connection with work for supply of water - sanctioned	Download PDF
G.O. (M.S) No. 66/2020/LSGD	Order	08-04-2020	GAD	Covid 19 general lock down exemption categories functioning of shops and service centres for mobile phones and computers	Download PDF
RCS/2315/2020C.B.(3)	Circular	08-04-2020	Department of Cooperation	കൊവിഡ് 19 വ്യാപനത്തിന്റേ പശ്ചാത്തലത്തിൽ ബഹു.മുഖ്യമന്ത്രി 4പവ്വോപിച്ച 4പതുക പാക്കേജിൽ ഉൾപ്പെട്ട കുടുംബശ്രീ, അയൽക്കൂട്ടങ്ങൾ മുഖേനയുള്ള "മുഖ്യമന്ത്രിയുടെ സഹായ ഹസ്തം വായ്പ പദ്ധതി" (CMs Helping Hand Loan Scheme - CMHLS) - സഹകരണ സ്ഥാപനങ്ങൾ മുഖേന നടപ്പാക്കുന്നതിന് മാർവ്വ നിർദ്ദേശങ്ങൾ പുറപ്പെടുവിക്കുന്നു.	Download PDF
No.SS1/70/2020/GAD	Circular	08-04-2020	GAD	COVID-19 guidelines for protection and safety of persons with disabilities - regulations to depute them on emergency duty	Download PDF
No. E-4/2020-MPLADS (PtII)	Circular	08-04-2020	GOI	Non-Operation of Member of Parliament Local Area Development Scheme (MPLADS) for two years (2020-21 & 2021-22) for managing the health and adverse impact of COVID-19 on the society.	Download PDF
No.21/2020/Fin	Circular	08-04-2020	Finance	2019-20 സാമ്പത്തിക വർഷാവസാനത്തിൽ ട്രഷറി ക്യൂവിൽ ഉൾപ്പെടുത്തിയ ബില്ലുകൾ / ചേക്കുകൾ ക്ലിയർ ചെയ്യുന്നതിനുള്ള നടപടി ക്ലിയർ ചെയ്യുന്നതിനുള്ള നടപടിക്രമങ്ങൾ	Download PDF
KSHO/8943/C/18	Circular	08-04-2020	Kudumbasree	കൊവിഡ് 19 ചെറുത്തു നിൽപ്പിനായി കേരള സർക്കാർ 4പവ്വോപിച്ച മുഖ്യമന്ത്രിയുടെ സഹായഹസ്തം വായ്പ (CM's Helping Hand Loan Scheme-CMHLS) പദ്ധതിയുടെ നടത്തിപ്പ് വിശദാംശങ്ങൾ	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (R.T) No. 156/2020/AYUSH	Order	08-04-2020	AYUSH	AYUSH Department - COVID-19- Action Plan outlining the Ayurveda Strategies for prevention, mitigation and rehabilitation of COVID-19 patients in Kerala - approved orders-issued	Download PDF
KSHO/8943/C/18	Circular	08-04-2020	Kudumbasree	കൊവിഡ് 19 ചെറുത്തെ നിലിനായി കേരള സർക്കാർ 4പവുവിച്ച "മുഖ്യമന്ത്രിയുടെ സഹായ ഹസ്തം വായ്പ പദ്ധതി" (CMs Helping Hand Loan Scheme - CMHLS) - നടത്തിപ്പ് വിശദാംശങ്ങൾ പുറപ്പെടുവിക്കുന്നത് സംബന്ധിച്ച്	Download PDF
G.O. (M.S) No. 64/2020/ GAD	Order	07-04-2020	GAD	GAD-Covid-19 general lock down- exemption categories-permission for cooperation department to engage staff required for distribution of social security pension and distribution of essential commodities- orders issued	Download PDF
G.O. (M.S) No. 65/2020/ GAD	Order	07-04-2020	GAD	Covid- 19 - General lock down - exemption categories - permission for the functioning of automobile workshops and spare parts shops	Download PDF
G.O. (R.T) No. 108/2020/F&CSD	Order	07-04-2020	Food & Civil Supplies	കൊവിഡ് 19- സംസ്ഥാനത്തെ അഗതി മന്ദിരങ്ങൾ, ഭക്ഷ്യ സ്ഥാപനങ്ങൾ, ആശുപത്രികൾ എന്നിവിടങ്ങളിലെ അന്തരവാദികൾക്ക് ഭക്ഷ്യ ധാന്യങ്ങളും കിറ്റും വിതരണം ചെയ്യുന്നതിനുള്ള നിർദ്ദേശം	Download PDF
G.O. (R.T) No. 106/2020/F&CSD	Order	06-04-2020	Food & Civil Supplies	കൊവിഡ് - 19 പോതുജനങ്ങൾക്കുണ്ടാകുന്ന ബുദ്ധിമുട്ടുകൾ പരിഹരിക്കുന്നതിന് ഭാഗമായി എല്ലാ കുടുംബങ്ങൾക്കും അവശ്യ സാധനങ്ങളടങ്ങിയ ഭക്ഷ്യ കിറ്റ് വിതരണം	Download PDF
Expert Report	Report	06-04-2020	GoK	REPORT OF THE EXPERT COMMITTEE ON STRATEGY FOR EASING LOCKDOWN RESTRICTIONS	Download PDF
RCC/DIR/PR004/2020	Press Release	06-04-2020	RCC	Medicine Distribution	Download PDF
CII & FACE	Guidelines	06-04-2020	Confederation of Indian Industries	Guidance Checkpoints for Fruits and Vegetables Mandis with Measures for Protecting Health and Ensuring Availability of Fruits and Vegetables in Mandis when in operation	Download PDF
No./31/F2/2020/Health	Guidelines	06-04-2020	Health and Family welfare	Cloth Mask - Best Practices	Download PDF
No./31/F2/2020/Health	Guidelines	06-04-2020	Health and Family welfare	Cloth Mask Best Practice English	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (R.T) No. 739/2020/LSGD	Order	06-04-2020	LSGD	തദ്ദേശസ്വയംഭരണ വകുപ്പ് സംസ്ഥാനത്തെ കോവിഡ് 19 4പതിരായ 4പവർത്തനങ്ങളുമായി ബന്ധപ്പെട്ട തദ്ദേശസ്വയംഭരണ വകുപ്പിൽ രൂപീകരിച്ച കോവിഡ് 19 സെല്ലിൽ കേരള ബ്ലോക്ക് പ്ലാനിംഗ് ബോർഡിലെ ഡിസെൻറലൈസ്ഡ് പ്ലാനിംഗ് ഡിവിഷൻ ചീഫ് ആയ 4ശ്രീമതി ജോസഫൈൻ ജേ യെ അംഗമായി ഉൾപ്പെടുത്തി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O (Ms) No. 63/2020/ GAD	Order	06-04-2020	GAD	GAD- Covid-19 general lock down- exemption categories- permission for procurement and transport of needed components, materials and equipments for the treatment of Covid-19 patients- orders issued	Download PDF
Go (Ms) No. 60I2020/ GAD	Order	04-04-2020	GAD	GAD Covid 19 general lock down- exemption categories-permission for mineral based industries orders issued	Download PDF
GO (Ms) No. 61 /2020/ GAD	Order	04-04-2020	GAD	GAD-Covid-19 general lock Government of Kerala Abstract down- proposal from Chief postmaster General, Keraia Circle to pay cash to the individuals at their residence through Aadhar enables payment system(AePS)- Approved - Orders Issued	Download PDF
Go (Ms) No.62/2o20/ cAD	Order	04-04-2020	GAD	GAD- covid-19- regulations to contain the covid-19 pandemic- regulations post lock down -expert committee to formulate the guidelines-orders issued	Download PDF
G.O. (R.T) No. 736/2020/LSGD	Order	04-04-2020	LSGD	കുടുംബശ്രീ - കോവിഡ് 19 വ്യാപനത്തിന് പശ്ചാത്തലത്തിൽ ബഹു.മുഖ്യമന്ത്രി 4പഖ്യാപിച്ച 4പര്യേക പാക്കേജിൽ ഉൾപ്പെട്ട കുടുംബശ്രീ മുഖേനയുള്ള 2000/-കോടി രൂപയുടെ "മുഖ്യമന്ത്രിയുടെ സഹായ ഹസ്തം വായ്പ പദ്ധതി" (CMs Helping Hand Loan Scheme - CMHLS) - കുടുംബശ്രീ അയൽക്കൂട്ടങ്ങൾ വഴി നടപ്പിലാക്കുന്നതിന് അനുമതി നൽകുന്നു	Download PDF
No. 28/2020	Circular	04-04-2020	Department of Cooperation	കോവിഡ് - 19 - വിവിധ മെമ്പലുകളിലുണ്ടായ നഷ്ടം - വായ്പകൾക്ക് മോറട്ടോറിയം അനുവദിച്ചു	Download PDF
G.O. (R.T) No. 09/2020/ SPD	Order	04-04-2020	Store Purchase	Covid - 19 Emergency Situation in the State - Administrative and Financial Arrangements - Relaxation in Purchase Rule	Download PDF
J 3-5524/2020	Circular	04-04-2020	Panchayat	കോവിഡ് - 19 4പതിരായ നടപടികള് , കുടുംബശ്രീയുടെ ആഭിമുഖ്യത്തിലുള്ള കമ്മ്യൂണിറ്റി കിച്ചണ് / ജനകീയ ഹോട്ടൽ നടത്തിപ്പ്.	Download PDF
G.O. (R.T) No. 733/2020/LSGD	Order	03-04-2020	LSGD	സംസ്ഥാനത്ത് കോവിഡ്-19 4പതിരായ നടപടികള് - കുടുംബശ്രീയുടെ ആഭിമുഖ്യത്തിലുള്ള കമ്മ്യൂണിറ്റി കിച്ചൻ രൂപീകരണം - സൃഷ്ടീകരണം നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
WCD/NNM4/5965(A)/2020	Circular	03-04-2020	Women and Child Welfare	കൊവിഡ് - 19 4പതിരായ 4പവർത്തനങ്ങളും - മുതിർന്ന പൗരന്മാർക്കുള്ള 4പതൃക 4ശ്രദ്ധ - ക്ഷമാഭ്യർത്ഥനയ്ക്കായി എസ് സി ഡി എസ് 4പവർത്തനങ്ങൾ ചുമതലപ്പെടുത്തി ഉത്തരവ്	Download PDF
Go (Ms) No. 58/2020/G	Order	03-04-2020	GAD	GAD-Covid-1g - general lock down- exemption categories-permission for parcel service to function- orders issued	Download PDF
Go (Ms) No. 59/2020/cA	Order	03-04-2020	GAD	General Administration Department - Covid 19 containment activities permission to open Tea, Cardamom, Coffee, Oil Palm, Cashew and Clove plantations for essential farming activities - granted - orders issued	Download PDF
GO (Ms) No.56/2020/G	Order	02-04-2020	GAD	GAD-Covid-1g - general lock down- exemption categories-Permission for online delivery of foods to operate up to 8 pm- order issued	Download PDF
No.4337724/D1/2020/F&CSD	Circular	02-04-2020	Food & Civil Supplies	സംസ്ഥാനത്തെ അഗതി മന്ദിരങ്ങളും, അനാഥാലയങ്ങളും, ശിശുഭവനങ്ങളും, വൃദ്ധ സദനങ്ങളും, ആതുര ചികിത്സാ കേന്ദ്രങ്ങൾ എന്നിവിടങ്ങളിലെ അന്തരവാസികൾക്ക് ഭക്ഷ്യ ലഭ്യത ഉറപ്പാക്കുന്നത് സംബന്ധിച്ച്	Download PDF
G.O. (R.T) No. 687/2020/H&FWD	Order	01-04-2020	Health and Family welfare	കൊവിഡ് 19 - ചികിത്സയും 4പതിരായവുമായി ബന്ധപ്പെട്ട 4പവർത്തനങ്ങളിൽ മെരിട്ട് ഇടപഴകുന്ന 2020 മാർച്ച് 31 ന് വിരമിച്ച ജീവനക്കാരുടെ സേവനം തുടർന്നും ലഭ്യമാക്കുന്നതിന് അനുമതി നൽകുന്നു	Download PDF
G.O. (R.T) No. 111/2020/AHD	Order	01-04-2020	Animal Husbandry	Agri (Animal Husbandry) Dept- KCMMF (MILMA)-Covid-19-Regulatory Measures taken-Demand in the demand of milk and milk product-Direction to District Collectors	Download PDF
GO (Ms) No. 55/2020/G	Order	01-04-2020	GAD	GAD-Covid-1g - general lock down- exemption to hotels near check posts to run their take away counters-orders issued	Download PDF
No./31/F2/2020/Health	Guidelines	31-03-2020	Health and Family welfare	Addendum to Revised Guidelines for Testing, Quarantine, Hospital Admission and Discharge for COVID-19 based on current risk management grid published on 12/03/2020	Download PDF
No./31/F2/2020/Health	Guidelines	31-03-2020	Health and Family welfare	COVID 19 - Guidelines for Human Resource Management in COVID Hospitals	Download PDF
No. P2/53/2020 - Health	Circular	31-03-2020	Health and Family welfare	H&FWD - Covid 19 Pandemic - Protocols for hygiene and . protection in hospitals - Dress code of hospital staff	Download PDF
MENTAL HEALTH PROGRAMME	Guidelines	31-03-2020	Health and Family welfare	കോറോണ ഒപ്പോട്വബക് - മാനസികാരോഗ്യ മാർഗ്ഗനിർദ്ദേശങ്ങളും - കുട്ടികളെ പരിചരിക്കുന്നവർക്കുള്ള നിർദ്ദേശങ്ങൾ	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
MENTAL HEALTH PROGRAMME	Guidelines	31-03-2020	Health and Family welfare	കോറോണ ട്വന്റൈബ്ക്ക് - മാനസികാരോഗ്യ മാർഗ്ഗനിർദ്ദേശങ്ങൾ - 4പായാധികൃതരുള്ള നിർദ്ദേശങ്ങൾ	Download PDF
MENTAL HEALTH PROGRAMME	Guidelines	31-03-2020	Health and Family welfare	കോറോണ ട്വന്റൈബ്ക്ക് - മാനസികാരോഗ്യ മാർഗ്ഗനിർദ്ദേശങ്ങൾ - ഐസോലേഷനിൽ കഴിയുന്നവർ	Download PDF
MENTAL HEALTH PROGRAMME	Guidelines	31-03-2020	Health and Family welfare	കോറോണ ട്വന്റൈബ്ക്ക് - മാനസികാരോഗ്യ മാർഗ്ഗനിർദ്ദേശങ്ങൾ - പൊതുജനങ്ങൾക്ക്	Download PDF
Reference Guide	Guidelines	31-03-2020	Health and Family welfare	വായുജന്യ രോഗങ്ങളിൽ നിന്ന് രക്ഷനേടാൻ മാസ്ക് ഉപയോഗിക്കേണ്ട വിധം	Download PDF
Reference Guide	Guidelines	31-03-2020	Health and Family welfare	Reference Guide for Converting Hospitals into dedicated COVID Hospitals	Download PDF
G.O. (R.T) No. 1223/2020/RD	Order	31-03-2020	Revenue	മുഖ്യമന്ത്രിയുടെ ദുരിതാശ്വാസ നിധി - കോവിഡ് 19 - ആശ്വാസ 4പവർത്തനങ്ങളുടെ ഭാഗമായി സംസ്ഥാനത്തെ എല്ലാ റെപ്പബ്ലിക് കാർഡ് ഉടമകൾക്കും റെപ്പബ്ലിക് കാർഡില്ലാത്തവർക്കും ഭക്ഷ്യ ധാന്യ കിറ്റ് സൗജന്യമായി വിതരണം ചെയ്യുന്നതിനുവേണ്ടി മുഖ്യമന്ത്രിയുടെ ദുരിതാശ്വാസ നിധിയിൽ നിന്നും 350 കോടി രൂപ അനുവദിച്ചുകൊണ്ട് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
No. 4357721/D2/2020/F&CSD	Order	31-03-2020	Food & Civil Supplies	കോവിഡ് 19 - അതിഥി തൊഴിലാളികൾക്ക് ഭക്ഷ്യ ധാന്യം നൽകുന്നത് - സംബന്ധിച്ച്	Download PDF
MENTAL HEALTH PROGRAMME	Guidelines	30-03-2020	Health and Family welfare	കോറോണ ട്വന്റൈബ്ക്ക് - മാനസികാരോഗ്യ മാർഗ്ഗനിർദ്ദേശങ്ങൾ - ആരോഗ്യ 4പവർത്തനകർക്ക്	Download PDF
Go (Ms) No.52l l2020lGAD	Order	30-03-2020	GAD	GAD- Covid-19- regulations to contain the Covid-19 pandemic- arangements for functioning of excise department-orders issued	Download PDF
G.O.(Ms)No.53/2020l GAD	Order	30-03-2020	GAD	GAD- COVID-19- lockdown in the entire state of Kerala - designating Addl. Chief Secretary, Home & Vigilance in overall charge of all Covid19 related activities inthe State- orders issued	Download PDF
Go (Rq No. 1285 /2020/ GAD	Order	28-03-2020	GAD	GAD-Covid-1g issuing instructions, guidelines, directions to various authorities in connection with COVID-19 containment activities-orders issued	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.o.(Rt)No. I 286/ 2020 I G AD	Order	28-03-2020	GAD	GAD- Covid- 19- strong possibility of a widespread outbreak of Novel Corona Virus (COVID-19) lockdown in the entire state of Kerala - regulations under Section 2 of the Epidemic Diseases Act, 1897 and The Disaster Management Act- round the clock war room in government secretariat-head of war room changed-orders issued	Download PDF
No. DC1/71/2020/LSGD	Circular	28-03-2020	LSGD	കൊവിഡ്-19 4പതിരായ 4പവർത്തനങ്ങൾ - വോളണ്ടിയർമാരുടെ സേവനം - മാർഗ്ഗ നിർദ്ദേശങ്ങൾ	Download PDF
No. DC1/71/2020/LSGD	Circular	28-03-2020	LSGD	കൊവിഡ്-19 4പതിരായ 4പവർത്തനങ്ങൾ - തദ്ദേശ സ്വയംഭരണ സ്ഥാപനങ്ങളുടെയും കുടുംബശ്രീയുടെയും ആഭിമുഖ്യത്തിലുള്ള കമ്മ്യൂണിറ്റി കിച്ചൻ - 4പവർത്തന മാർഗ്ഗരേഖ	Download PDF
No./31/F2/2020/Health	Guidelines	28-03-2020	Health and Family welfare	Advisory for Patient Admissions to COVID Care Centers	Download PDF
No./31/F2/2020/Health	Guidelines	28-03-2020	Health and Family welfare	Advisory for Patient admissions to COVID First-Line Treatment Centre (CFLTC)	Download PDF
G.O. (R.T) No. 715/2020/LSGD	Order	27-03-2020	LSGD	കുടുംബശ്രീ - 2019-2020 സാമ്പത്തിക വർഷത്തെ പ്ലാൻ ഫെണ്ടിൽ നിന്നും 23.64 കോടി രൂപ പിൻവലിക്കുന്നതിനും സംസ്ഥാനത്ത് കൊവിഡ് - 19 വ്യാപനത്തിന്റെ പശ്ചാത്തലത്തിൽ ബഹു.മുഖ്യമന്ത്രി 4പഖ്യാപിച്ച ആശ്വാസ നടപടികളുടെ ഭാഗമായ 20 രൂപയ്ക്ക് ഉച്ചയുണ് വിതരണം നടത്തുന്നതിന് വേണ്ടി "Corpus Fund to Kudumbashree for setting up of 1000 Community Kitchens" - ന്റെ 4പാദം ചിലവുകൾക്കായി 4പസ്തുത തുക വിനിയോഗിക്കുന്നതിനും ഉള്ള ഉത്തരവ്	Download PDF
No. DC1/71/2020/LSGD	Circular	27-03-2020	LSGD	സംസ്ഥാനത്ത് കൊവിഡ്-19 4പവർത്തനങ്ങൾ കൂടുതൽ ഉൾജ്ജ്വലിക്കുന്നതിലേക്കായി ഹോം ഇന്റസോലേഷനിൽ ഉള്ളവരുടെ വിവരശേഖരണം സംബന്ധിച്ച്	Download PDF
G.O. (R.T) No. 1282/2020/GAD	Order	27-03-2020	GAD	കൊവിഡ് -19 വ്യാപനം തടയുന്നതിനുള്ള 4പതിരായ 4പവർത്തനങ്ങൾ - സർക്കാർ ജീവനക്കാരുടെയും ഓഫീസുകളുടെയും 4പവർത്തനം സംബന്ധിച്ച് പുതുക്കിയ ഉത്തരവ്	Download PDF
G.O. (R.T) No. 196/2020/F&P	Order	27-03-2020	Fisheries	Covid 19 - Epidemic Control Measures Prohibitives orders issued under Epidemic Act,1897 and the Disaster Management Act -2005 - Regulatory Measures to be followed in mArine and Inland Fisheries	Download PDF
No. 6650/Leg.H1/2020/ Law.	Ordinance	27-03-2020	Law	The Kerala Epidemic Diseases Ordinance - 2020	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
No (C.S)A.4/516/2020	Guidelines	27-03-2020	Food & Civil Supplies	കൊവിഡ് 19 - സൗജന്യ റേഷൻ വിതരണം - നടത്തുന്നതിനുള്ള നിർദ്ദേശങ്ങൾ നടപ്പിലാക്കുന്നത് സംബന്ധിച്ച്	Download PDF
G.O. (R.T) No. 713/2020/LSGD	Order	26-03-2020	LSGD	കൊവിഡ്-19 4പതിരായ നടപടികൾ - തദ്ദേശസ്വയംഭരണ സ്ഥാപനങ്ങളുമായി ഒത്തു ചെർന്ന് കുടുംബശ്രീയുടെ ആഭിമുഖ്യത്തിലുള്ള കമ്മ്യൂണിറ്റി കിച്ചൻ രൂപീകരണം - മാർഗ നിർദ്ദേശങ്ങൾ	Download PDF
No. DC1/71/2020/LSGD	Circular	26-03-2020	LSGD	സംസ്ഥാനത്തെ കൊവിഡ്-19 പടർന്നു പിടിക്കുവാനുള്ള സാധ്യത - 4പതിരായ നടപടികൾ - പരിസര ശുചിത്വ 4പവർത്തനങ്ങൾ സംബന്ധിച്ച്	Download PDF
G.O. (M.S) No. 55/2020/ DMD	Order	26-03-2020	Disaster Management	Covid -19 The Guideline on Measures to be taken by Ministries/ Departments/Departments of Government of INDIA, State/Union Territory Governments and State/Union Territory Authorities for Containment of COVID-19 epidemic Issued by Ministry of Home Affairs,Governemnt of India Accepted	Download PDF
G.O. (M.S) No. 50/2020/ GAD	Order	26-03-2020	GAD	കൊവിഡ് -19 വ്യാപനം തടയുന്നതുമായി ബന്ധപ്പെട്ട് സ്വീകരിക്കേണ്ട നിയന്ത്രണങ്ങൾ തുടർ നടപടികൾ	Download PDF
No./31/F2/2020/Health	Guidelines	26-03-2020	Health and Family welfare	കൊവിഡ് 19 - റസിഡൻസ് അസോസിയേഷനുകൾക്കുള്ള മാർഗനിർദ്ദേശങ്ങൾ	Download PDF
G.O. (P) No. 33/2020/ FIN	Order	26-03-2020	Finance	The Payment of wages of contractual / casual / daily wage / outsourced staff during lock down period due to COVID 19 - approved	Download PDF
E.N.F 4113/2020	Circular	26-03-2020	Labour	കോറോണ I വറസ് (കൊവിഡ് 19) ബാധയുടെ പശ്ചാത്തലത്തിൽ സംസ്ഥാനത്തെ പോതു/സ്വകാര്യ മെഖലയിലെയും നിർമ്മാണ മെഖല,തൊട്ടം മെഖല, കശുവണ്ടി, മത്സ്യ സംസ്കരണം, കയർ എന്നിവിടങ്ങളിലെയും സ്ഥാപനങ്ങളുടെ ഉടമകളും ഫൊക്സി ഉടമകളും തൊഴിലാളികളും പാലിക്കേണ്ട നടപടി 4കമങ്ങൾ	Download PDF
G.O. (R.T) No. 713/2020/LSGD	Order	26-03-2020	LSGD	കൊവിഡ് 4പതിരായ 4പവർത്തനങ്ങളിൽ തദ്ദേശ സ്വയം ഭരണ സ്ഥാപനങ്ങളുമായി ചെർന്ന് കുടുംബശ്രീയുടെ ആഭിമുഖ്യത്തിൽ ഉള്ള കമ്മ്യൂണിറ്റി കിച്ചൻ രൂപീകരണം മാർഗനിർദ്ദേശങ്ങൾ നൽകി ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു	Download PDF
G o(Ms) No.5112020/ GAD	Order	26-03-2020	GAD	GAD- Covid-19- strong possibility of a widespread outbreak of Novel Corona Virus COVID 19) lockdown in the entire state of Kerala - regulations under section 2 of the Epidemic Diseases Act,1897 and The Disaster Management Act- modified orders issued	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
GO (R0 No.1269 I2020IG	Order	26-03-2020	GAD	GAD- Covid-19- strong possibility of a widespread outbreak of Novel Corona Virus (COVID-19) lockdown in the entire state of Kerala - regulations under Section 2 of the Epidemic Diseases Act, 1897 and The Disaster Management Act- round the clock war room in government secretariat- orders issued	Download PDF
G.O. (R.T) No. 710/2020/LSGD	Order	25-03-2020	LSGD	സംസ്ഥാനത്തെ കോവിഡ്-19 പതിവായി വ്യാപിക്കുന്നതിനുള്ള തടവുകാരെ സംബന്ധിച്ച സാമ്പത്തിക നിയന്ത്രണങ്ങൾ സ്വീകരിക്കേണ്ട നടപടികൾ സംബന്ധിച്ച തുടർ നിർദ്ദേശങ്ങൾ	Download PDF
No./31/F2/2020/Health	Protocol	25-03-2020	Health and Family welfare	COVID - 19 Protocol for Management of Covid Care Centers	Download PDF
G.O. (P) No. 16/2020/ HOME	Order	25-03-2020	Home	In exercise of the powers conferred by sub clauses (i) and (ii) of clause (a) of sub-section (1) of Section 2 of the Kerala Essential Services Maintenance Act 1994 (6 of 1994), the Government of Kerala hereby declare the services connected with the following to be essential services for the purposes of the said Act	Download PDF
No./31/F2/2020/Health	Guidelines	25-03-2020	Health and Family welfare	COVID-19 Guidelines for Distribution of Laboratories	Download PDF
No. 4342357/D2/2020/ F&CSD	Order	25-03-2020	Food & Civil Supplies	കോവിഡ് 19 - സൗജന്യ ഭക്ഷണം - സംബന്ധിച്ച്	Download PDF
No./31/F2/2020/Health	Guidelines	24-03-2020	Health and Family welfare	Covid - 19 Advisory for Pregnancy and Labour Management	Download PDF
NO./31/2020/Health	Guidelines	24-03-2020	Health and Family welfare	Covid - 19 Advisory for Infection Control Precautions to be adopted in dental care settings	Download PDF
No./31/F2/2020/Health	Guidelines	24-03-2020	Health and Family welfare	Guidelines for Routine Vaccination including Out Reach Immunisation Programme under UIP	Download PDF
NO./31/2020/Health	Guidelines	24-03-2020	Health and Family welfare	COVID-19 INTERIM Treatment Guidelines for Kerala State	Download PDF
NO./31/2020/Health	Medical Board	24-03-2020	Health and Family welfare	COVID - 19 State Medical Board Decision with regard to Quarantine of Healthcare workers who are Low Risk Asymptomatic Secondary Contact of A Proven Covid -19 Case	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
G.O. (M.S) No. 49/2020/ GAD	Order	23-03-2020	GAD	GAD - Covid-19- strong possibility of a widespread outbreak of Novel Corona Virus (COVID-19) lockdown in the entire state of Kerala - regulations under section 2 of the Epidemic Diseases Act, 1897 and The Disaster Management Act, 2005	Download PDF
G.O. (M.S) No. 54/2020/ H&FWD	Order	21-03-2020	Health and Family welfare	In exercise of the powers conferred by sections 2, 3 & 4 of the Epidemic Diseases Act, 1897 (Central Act 3 of 1897), the Government of Kerala issue the following regulations regarding COVID-19 for the strict compliance, for the containment management and control of COVID-19 as part of endeavor to eliminate COVID-19 from the State	Download PDF
G. O. (Ms) No.4Bi2 020 I GAD	Order	21-03-2020	GAD	GAD - Covid-L9- strong possibility of a widespread outbreak of Novel Corona Virus (COVID-19) in Kerala State - regulations under section 2 of the Epidemic Diseases Act, LB97 - orders issued	Download PDF
G.O. (M.S) No. 55/2020/ LSGD	Order	20-03-2020	LSGD	സംസ്ഥാനത്തെ കൊവിഡ്-19 പതിവായി നടപടികളുമായി ബന്ധപ്പെട്ട് തദ്ദേശസ്വയംഭരണ സ്ഥാപനങ്ങൾ ഏറ്റെടുക്കേണ്ട പരിരക്ഷണനടപടികളും ഉത്തരവാദിത്വങ്ങളും	Download PDF
G.O. (R.T) No. 686/2020/LSGD	Order	20-03-2020	LSGD	സംസ്ഥാനത്തെ കൊവിഡ്-19 പതിവായി നടപടികളുമായി ബന്ധപ്പെട്ട് തദ്ദേശസ്വയംഭരണ വകുപ്പിന് 'കൊവിഡ് - 19 സെൽ' രൂപീകരിച്ചു	Download PDF
G.O. (R.T) No. 695/2020/LSGD	Order	20-03-2020	LSGD	കൊവിഡ്-19 പര്യന്തം സാഹചര്യം പരിഗണിച്ച് തദ്ദേശസ്വയംഭരണ സ്ഥാപനങ്ങളിൽ വസ്തു നികുതി പിടിക്കാതെ അടയ്ക്കുന്നതിനും വ്യാപാര ലേസൻസ് ഉൾപ്പെടെയുള്ള വിവിധ ലേസൻസുകൾ പുതുക്കുന്നതിനും, വിനോദ നികുതി അടയ്ക്കുന്നതിനുള്ള അവസാന തീയതി 30/04/2020 വരെ ദീർഘിപ്പിച്ചിരിക്കുന്നു.	Download PDF
NO./31/2020/Health	Guidelines	20-03-2020	Health and Family welfare	Covid - 19 Guidelines for Employees in Shopping Centers and Shopping Malls	Download PDF
NO./31/2020/Health	Guidelines	20-03-2020	Health and Family welfare	Covid - 19 Guidelines for Beauty Parlours and Saloons	Download PDF
Reference Guide	Guidelines	20-03-2020	Health and Family welfare	Reference Guide for Converting Hospitals into Dedicated COVID Hospitals	Download PDF
G.O. (R.T) No. 1247/2020/GAD	Order	20-03-2020	GAD	കൊവിഡ് -19 പതിവായി പരിരക്ഷണനടപടികൾ - സംസ്ഥാനത്തെ സർക്കാർ ആരോഗ്യകേന്ദ്രങ്ങളിലെ ജീവനക്കാരുടെ ജോലിസമയം, ഹാജർ എന്നിവ സംബന്ധിച്ച് താൽക്കാലിക ക്രമീകരണങ്ങൾ	Download PDF

G.O / Circular No.	Type	Date	Department	Subject	Download Link
No. SS1/50/2020/GAD	Circular	18-03-2020	GAD	കൊവിഡ് 19 - 4പതിരായ 4പവർത്തനങ്ങളും - സർക്കാർ ആഫീസുകളിൽ പാലിക്കേണ്ട മുൻകരുതൽ നടപടികൾ	Download PDF
No.08/2020	Circular	18-03-2020	Labour	കോറോണ I വറസ് (കൊവിഡ് 19) - ബാധയുടെ പശ്ചാത്തലത്തിൽ - സംസ്ഥാനത്തെ സ്വകാര്യമേഖലയിലെ തൊഴിലാളികളുടെയും അതിഥി തൊഴിലാളികളുടെയും 4പവർത്തനം നിരീക്ഷിക്കുന്നതിന് - തൊഴിൽ വകുപ്പിലെ ഉദ്യോഗസ്ഥർക്ക് നിർദ്ദേശങ്ങൾ പുറപ്പെടുവിക്കുന്നു	Download PDF
G.O. (R.T) No. 580/2020/H&FWD	Order	16-03-2020	Health and Family welfare	Constitution of COVID 19 Cells in Various Departments	Download PDF
G.O. (R.T) No. 20/2020/LSGD	Order	14-03-2020	LSGD	സംസ്ഥാനത്തെ കൊവിഡ്-19 4പതിരായ നടപടികളുമായി ബന്ധപ്പെട്ട് തദ്ദേശസ്വയംഭരണ സ്ഥാപനങ്ങളുടെ നേതൃത്വത്തിൽ സ്വീകരിക്കേണ്ട നടപടികൾ	Download PDF
G.O. (R.T) No. 560/2020/H&FWD	Order	11-03-2020	Health and Family welfare	കോറോണ I വറസ് (കൊവിഡ് 19) - വ്യാപനം നിയന്ത്രിക്കുവാൻ അടിയന്തിര നടപടി സ്വീകരിക്കുവാൻ വിവിധ വകുപ്പുകളെ ചുമതലപ്പെടുത്തി - ഉത്തരവ്	Download PDF
No. DCN4/50/2020/GAD	Circular	10-03-2020	GAD	കോറോണ I വറസ് ബാധയുടെ പശ്ചാത്തലത്തിൽ സംസ്ഥാനത്തെ സർക്കാർ / അർദ്ധ സർക്കാർ / സ്വകാര്യ സ്ഥാപനങ്ങൾ ഉൾപ്പെടെ എല്ലാ സ്ഥാപനങ്ങളിലും 31-03-2020 വരെ ബയോമെട്രിക് പബ്ലിംഗ് സംവിധാനം ഒഴിവാക്കി ഉത്തരവ്	Download PDF
No.46/D.C.1/2020/LSDG	Circular	05-02-2020	LSGD	ആരോഗ്യജാഗൃത - പകർച്ച വ്യാധി 4പതിരായയുജ്ഞം 2020 - ആരോഗ്യ സുരക്ഷയ്ക്ക് മാലിന്യമുക്ത പരിസരം - മാർഗ്ഗ നിർദ്ദേശങ്ങൾ	Download PDF
No. DC1/71/2020/LSGD	Circular	01-02-2020	LSGD	സംസ്ഥാനത്തെ കൊവിഡ്-19 4പതിരായ നടപടികളുമായി ബന്ധപ്പെട്ട് തദ്ദേശസ്വയംഭരണ സ്ഥാപനങ്ങളുടെ നേതൃത്വത്തിൽ സ്വീകരിക്കേണ്ട നടപടികൾ	Download PDF

Annexure-2



നോ +ന പ 1 ൽ റെൻ ഓഫറന്റുുടെ നടപടി മോ

രജർ: േ. xRM. െക. െജ.

(1൦13 െല േകെള പെ+െുജന+േc+ഗ5 നിയമം (1൦13 -െല 18൦൦൦ ൪.)

വകുല1~ c(5), 1൦(a), 1൦(c) എമിവ ഹക+co പൂxെെ1sെുവ1 ും ഉ വ

നോ: DHS/14൦6/1൦13-ph5

െയെ1: 11-൦9-1൦15

വ1ഷയം: അമരബ1 ~ മH1I ജco uെ1േc+u നടപടികS, നRMൽ
കുളNS, ജല+ശയNS െുsN1യവയ1െല മലRനRകca നിയQa
ന1ഭേദശNS
- aTRകca൦ noബവ1V~

നുുചന: ഉ cവ് നോ.DHS/14൦6/1൦13-ph5 െയെ1 1c-൦8-1൦15

േകെള 1ൽ അമരബ1 ~ മH1I ജco വർu1V െെ+െ1ൽ x1േ1+ർY~
െചZെെ1sെുവ്. ന1ലവ1ൽ x1േ1+ർY~ െചZെെ1Y1Yു൪ അമരബ1 ~
മH1I ജco േകനുകുളുെsയു൦ മcaNളുെsയു൦ വ1ശകലന൦

െചZുേ]+S

െ+െ൴ പxയു൦ n+rചc5Nള1ൽ uHുെ േc+ഗ൦ പ1s1െെ1s+നു൪
n+v5െ ഉെvm~

വ1ലയ1cു ും.

1. വ1േന+ദ 1നു൦, പc1ശRലന 1നു൦ േവവ1യു൪ പെ+െു /
nJക+c5 നRMൽ കുളNളുെs ഉപേയ+ഗ൦
2. മല1നമ+യ കുളNS, െs+കNS, ഓഴ ~ കുxb െെ+sെുകS െുsN1യ ജല+ശയNള1ൽ
മുN1 കുള1 ുെെ

൪കയ+ൽ അമരബ1 ~ മH1I ജco മുല൦ ജനNളുെs ൪േc+ഗ5 1നു൦
ജRവനു൦ xRഷ1a1യുv+ക+d n+v5െയു൪െു൦ ൪യെെ െsയ+d n+u5മ+യ
ക+c5Nള1ൽ െ+െ൴ പxയു൦ ന1ഭേദശNS പൂxെെ1sെുവ1േ v#
അന1വ+c5മ+െam~ േബ+u5മ+യെ1െe അs1 +ന 1ൽ 1൦13
െല േകെള

പെ+െുജന+േc+ഗ5 നിയമ 1െല 4(1) വകുല1~ uക+co no +ന പ 1 ~
റെൻ ~ ഓഫറൻ ഹ൦ ചുമെല വr1 ു൦ no +ന
൪േc+ഗ5 വകുല1~ ഹയx. ർ ൪യ േ. xRM

കെ.ജെ. എം ഞാൻ മേൽ പരമേശ്വരൻ നായർ
ലോക(5), ലോ(a), ലോ(c) വകുപ്പുകൾക്ക് ഉപകരണ എംഗിൻ നിർമ്മാണ
അവകാശങ്ങൾ വാങ്ങിയതിന്
കൈപ്പത്രി നൽകുന്ന ഉപകരണ നിർമ്മാണ പദ്ധതിയിലും.

മേൽ ഉൾപ്പെടെ നൽകിയിരിക്കുന്ന കേസുകൾ, വായ്പ്പാട് പദ്ധതികൾ
എന്നിവ നോബിൾ ഹൗസ് വകുപ്പ് വകുപ്പ് 1-ാം ഘട്ട പദ്ധതികൾ
1-ാം നിലയിൽ കേസുകൾ നോബിൾ ഹൗസ് വകുപ്പ് 1-ാം ഘട്ട പദ്ധതികൾ
ഉൾപ്പെടെ.

ഉൾപ്പെടെ

1. x1-നോബിൾ, റേഡിയേഷൻ, വായ്പ്പാട് പദ്ധതികൾ, നൽകിയിരിക്കുന്ന
പരിശോധനകൾ എന്നിവയുടെ നടപടികൾ, ചുമതലകൾ
അടങ്ങിയ ഇടയിൽ ജലം എങ്കിൽ ദിവസവും റേഡിയേഷൻ ഹോളുകളും
റേഡിയേഷൻ അളവുകൾ പരിശോധനയ്ക്ക് ഉൾപ്പെടെ
വകുപ്പ് വായ്പ്പാട് അടങ്ങിയതും ചേർന്നിരിക്കുന്നതും
ദിവസം ഹോളുകളും റേഡിയേഷൻ വായ്പ്പാട് പദ്ധതികൾ
പ്രദേശം നോബിൾ വായ്പ്പാട്, ബെൽഗിയൻ
റെഡിയേഷൻ, റേഡിയേഷൻ പദ്ധതികൾ റേഡിയേഷൻ
റേഡിയേഷൻ, റേഡിയേഷൻ റേഡിയേഷൻ
(Authorised officer)
പരിശോധനയ്ക്ക് ഉൾപ്പെടെ വായ്പ്പാട്.
2. നൽകിയിരിക്കുന്ന കേസുകൾ, വായ്പ്പാട് പദ്ധതികൾ,
x1-നോബിൾ ഹോളുകളിലെയും, റേഡിയേഷൻ ഹോളുകളിലെയും നൽകിയിരിക്കുന്ന
എന്നിവയിൽ റേഡിയേഷൻ പദ്ധതികൾ റേഡിയേഷൻ
Residual Chlorine 1-3 mg/Litre (1-3 ppm) എന്ന അളവിൽ ഉൾപ്പെടെ
അ.
3. കൂടുതൽ 1-ാം ഘട്ട പദ്ധതികളിൽ റേഡിയേഷൻ
പദ്ധതികൾ റേഡിയേഷൻ Residual Chlorine 0.5 mg/Litre (0.5 ppm)
എന്ന അളവിൽ ഉൾപ്പെടെ അ.
4. ജലവായ്പ്പാട് ഹോളുകളിൽ എങ്കിൽ Residual Chlorine 0.5 mg/Litre
(0.5 ppm) എന്ന അളവിൽ നിലനിർത്തി ബെൽഗിയൻ
(ഉദാ. ജല റേഡിയേഷൻ, ജലവായ്പ്പാട് ഹോളുകളിൽ) വായ്പ്പാട്
waeglaria fowleri എന്ന അളവയുടെ നോബിൾ ലക്ഷ്യം
റെഡിയേഷൻ വായ്പ്പാട് ഹോളുകളിൽ
ഇവയുടെ നോബിൾ ഇടയിൽ വായ്പ്പാട്
Residual Chlorine 1 mg/Litre (1 ppm) ഉൾപ്പെടെ
വായ്പ്പാട് ഗുണകരമായ വായ്പ്പാട്
ഉൾപ്പെടെ പദ്ധതികൾ.
6. ജലവായ്പ്പാട് ഹോളുകളിൽ റേഡിയേഷൻ ഹോളുകളിൽ
കൂടുതൽ റേഡിയേഷൻ വായ്പ്പാട്
ജലവായ്പ്പാട് ഹോളുകളിൽ റേഡിയേഷൻ വായ്പ്പാട്
7. ജലവായ്പ്പാട് ഹോളുകളിൽ റേഡിയേഷൻ ഹോളുകളിൽ
റേഡിയേഷൻ വായ്പ്പാട്

മേൽ പറഞ്ഞ മനുഷ്യർക്ക് 5 മെഗാവാട്ട് നിലവാരത്തിൽ വെളിച്ചം ഉത്പാദിപ്പിക്കാൻ കഴിയും. ഇത് കൂടുതൽ ഊർജ്ജം ഉപയോഗിക്കാതെ, അധികം ചെലവു വെക്കാതെ ഉത്പാദിപ്പിക്കാൻ കഴിയും.

1. $x_1 \otimes n + r_1 y_1 \otimes k_S, r_2 + y_2 \otimes k_S, v + y_3 \otimes k_S \Leftrightarrow R_0$ പ്തർ $\otimes k_S$, നRMൽ പc1ശRലനേകട എm1വയുടെ n_S $l_1 \otimes k_S$ ന്തർ $\otimes k_S$ ഉടമകS $\otimes k_S$ (ജk+ /u+ഭേശ1ക പ 1 * െrൽ * ഓഹRnർമ+ർ മുഭേdന)
2. എk+ nർ +ർ വകു1കS $\otimes k_S$ (ജk+ /u+ഭേശ1ക പ 1 * െrൽ * ഓഹRnർമ+ർ മുഭേdന)
3. I & pRd (വ1വ1u മ+u5മNഉ1ൽ unlvRകc1 $\otimes k_S \Leftrightarrow l_1$)



GOVERNMENT OF KERALA

Abstract

Health & Family Welfare Department - "Kerala State Technical Guidelines and SOP with regard to Highly Pathogenic Avian Influenza A [H5N1] Virus Infection" - Orders issued.

HEALTH & FAMILY WELFARE (F) DEPARTMENT

G.O.(Rt)No.1451/2024/H&FWD Dated,Thiruvananthapuram, 15-06-2024

Read:- Proposal dated 13.06.2024 from the Chairperson, State Medical Board.

ORDER

Highly Pathogenic Avian Influenza HPAI A(H5N1) clade 2.3.4.4b viruses have spread widely among wild birds worldwide since 2020–2021, resulting in outbreaks in poultry and other animals. Based on available evidence, human health risk to the public from HPAI A(H5N1) viruses is low. However, people with close or prolonged, unprotected exposures to infected birds or environments contaminated by infected birds are at greater risk of infection.

In response to recent Avian Influenza outbreaks in the State, Government are pleased to issue **"Kerala State Technical Guidelines and SOP with regard to Highly Pathogenic Avian Influenza A [H5N1] Virus Infection: Interim Recommendations on Prevention, Monitoring and Public Health Investigations"**, as annexed to this order.

(By order of the Governor)

SHIJA C G

JOINT SECRETARY

To:

The Secretary, Animal Husbandry Department.

The State Mission Director - National Health Mission,
Thiruvananthapuram.

The Director of Health Services, Thiruvananthapuram.

The Director of Medical Education, Thiruvananthapuram.

The Director of Animal Husbandry, Thiruvananthapuram.

The Chairperson, State Medical Board

All District Animal Husbandry Officers.

All District Medical Officers.

Principal Accountant General (A&E/Audit), Kerala,
Thiruvananthapuram.
Information & Public Relations (Web & New Media) Department.
Stock File/ Office Copy (to file F2/180/2024-HEALTH).

Forwarded /By order

Signed by

Vilasini K V

Date: 13-06-2024 16:05:41

Annexure

KERALA STATE TECHNICAL GUIDELINES AND SOP WITH REGARD TO HIGHLY PATHOGENIC AVIAN INFLUENZA A [H5N1] VIRUS INFECTION: INTERIM RECOMMENDATIONS ON PREVENTION, MONITORING AND PUBLIC HEALTH INVESTIGATIONS

Background

Sporadic human infections with Highly Pathogenic Avian Influenza (HPAI) A(H5N1) virus, with a wide spectrum of clinical severity and a cumulative case fatality of more than 50%, have been reported in 23 countries over more than 20 years. HPAI A(H5N1) clade 2.3.4.4b viruses have spread widely among wild birds worldwide since 2020–2021, resulting in outbreaks in poultry and other animals. Recently, HPAI A(H5N1) clade 2.3.4.4b viruses were identified in dairy cows, and in unpasteurized milk samples, in several U.S. states. Three cases of HPAI A(H5N1) virus infection in dairy farm workers were recently reported from the USA. Although human infections with HPAI A(H5N1) virus are rare, having unprotected exposure to any infected animal or to an environment in which infected birds or other animals are or have been present can pose a risk of infection. Most human infections with H5N1 virus have occurred after unprotected exposures to sick or dead infected poultry. There is no evidence of sustained human-to-human H5N1 virus transmission. Therefore, people with work or recreational exposures to H5N1 virus-infected animals may be at increased risk of infection and should follow recommended precautions. In Kerala, to date, H5N1 has been reported only in birds. Spillover of H5N1 to mammals has not been reported from Kerala. Influenza A viruses infect the respiratory and gastrointestinal tracts of birds causing birds to shed the virus in their saliva, mucous, and faeces. Influenza A viruses can also infect the respiratory tract of mammals and cause systemic infection in other organ tissues. Human infections with avian influenza A viruses can happen when enough virus gets into a person's eyes, nose, or mouth or is inhaled. People with close or prolonged unprotected contact with infected birds or animals or their contaminated environments are at greater risk of infection. HPAI A(H5N1) virus human infections have ranged from mild (e.g., upper respiratory symptoms) to severe illness (e.g., pneumonia, multi-organ failure) resulting in death.

A wide range of terrestrial and marine mammals have been reported with HPAI A(H5N1) virus infection in multiple countries, typically resulting in neurologic signs of disease and death. HPAI A(H5N1) virus infection has been reported in wild mammals such as foxes, bears, seals, and sea lions, and domesticated animals, including pets such as cats and dogs, farmed mink and foxes, and livestock such as goats and cows.

Based on available evidence, human health risk to the public from HPAI A(H5N1) viruses is low. However, people with close or prolonged, unprotected exposures to infected birds or environments contaminated by infected birds are at greater risk of infection.

Transmissibility and transmission Routes

HPAI A(H5N1) viruses preferentially bind to $\alpha 2$, 3-linked sialic acid receptors that are prevalent in the respiratory and intestinal tracts of waterfowl and poultry, and in the human lower respiratory tract but do not currently have the ability to easily infect cells and bind efficiently to $\alpha 2$,

6-linked sialic acid receptors that are predominant in the human upper respiratory tract. The ability to bind efficiently to $\alpha 2$, 6-linked sialic acid receptors would be needed to increase the risk of transmission to people. Using recombinantly expressed hemagglutinin, analysis of receptor binding of the HPAI A(H5N1) virus identified in the dairy farm worker from Texas (A/Texas/37/2024) revealed binding only to avian-type $\alpha 2$, 3-linked sialic acid receptors.

There are different ways that avian influenza A(H5N1) can be transmitted to humans. According to the source of infection, transmission can be divided into:

Animal to human:

Individuals can be exposed to the virus through contact with infected birds, dead birds, or birds' secretions (mucus, saliva), blood and faeces (as birds shed the virus in their secretions and faeces). Transmission of the virus occurs via inhalation or contact with mucus membranes (e.g., eyes, nose, mouth).

Human infection has been reported after de-feathering of influenza A(H5N1) infected dead swans, and it has been determined that the influenza A(H5N1) virus can survive in feathers for several weeks in moderate temperatures, and over 5 months in cooler temperatures.

The ability of infected wild mammals to transmit avian influenza A(H5N1) to humans has not yet been determined. Although theoretically possible, there has never been a documented case of mammal-to-human influenza A(H5N1) transmission. Nonetheless, avian influenza detections in mammals and evidence of mutation or mammalian adaptation in the viral genome sequences from infected animals are important areas to monitor.

Mutations found within some of the Eurasian/North American reassortant influenza A(H5N1) strains circulating in North American birds and mammals in 2022 have been shown to enhance polymerase activity and replication in mammalian cells, help evade the immune response, and increase virulence in mice experimentally. Recent preliminary findings from pathogenicity and transmissibility studies indicate that the reassortant influenza A(H5N1) strains cause more severe illness in ferrets, increasing concerns about the potential for transmission to humans.

Food-borne transmission:

There have been rare reports of human cases of avian influenza A(H5N1) possibly associated with the consumption of raw or undercooked contaminated poultry products, such as raw duck organs and duck blood.

It is important to note that there is no evidence to suggest that the consumption of fully cooked poultry, game meat or eggs could transmit the influenza A(H5N1) virus to humans. All evidence to date indicates that thorough cooking will kill the virus.

Environmental exposure:

The majority of influenza A(H5N1) human cases have occurred after contact with infected poultry; however, some cases have been associated with exposure to contaminated environments, such as live bird markets and poultry farms.

Theoretically, humans could get infected with influenza A(H5N1) by exposure to contaminated water (i.e., inhalation, ingestion, conjunctival or intranasal inoculation), however, the evidence to support this is limited. Environmental exposure through contaminated water (for example, bathing or swimming in household ponds, or lacking an indoor water source) has been suggested as a possible risk factor for human infection in a small number of influenza A(H5N1) studies.

Human to human:

Evidence of limited human-to-human transmission of influenza A(H5N1) (via close physical contact, for example within a household) has been suggested in previous outbreaks. Sustained human-to-human transmission of avian influenza A(H5N1) has never been observed.

Clinical manifestations

Avian influenza A(H5N1) in humans mainly affects the respiratory tract. However, it can manifest with gastrointestinal or central nervous system symptoms (e.g., encephalopathy). Most human cases have reported a history of exposure to dead or ill poultry, and the incubation period after exposure is usually 1 to 5 days and up to 9 days.

Recommendations for the Public

1. People should avoid unprotected (not using respiratory or eye protection) exposures to sick or dead birds including wild birds, poultry, other domesticated birds, and other wild or domesticated animals, as well as with faeces, litter, or materials contaminated by birds suspected or confirmed HPAI A(H5N1) virus infection.
2. Personal protective equipment (PPE) should be worn when in direct or close contact (within about six feet) with sick birds including poultry, wild birds, backyard bird flocks, or faeces, litter, or materials potentially contaminated with HPAI A(H5N1) viruses.
 - PPE includes properly fitted unvented or indirectly vented safety goggles, disposable gloves, boots or boot covers, N-95 mask (ideally fit-tested), disposable fluid-resistant coveralls, and disposable head cover or hair cover.
3. People exposed to HPAI A(H5N1)-virus-infected birds (including people wearing recommended PPE) should monitor themselves for new respiratory illness symptoms, including conjunctivitis (eye redness), beginning after their first exposure and for 10 days after their last exposure. They should remain in home quarantine for 10 days from the last day of exposure.
4. Influenza antiviral post-exposure prophylaxis with Oseltamivir should be considered to prevent infection, particularly in those who had unprotected exposure to HPAI A(H5N1)-virus-infected birds.

5. Persons who develop any illness symptoms after exposure to HPAI A(H5N1) virus-infected birds should seek prompt medical evaluation, molecular testing and antiviral treatment by their clinician or from the public health department. Symptomatic persons should isolate away from others, including household members, until it is determined that they do not have HPAI A(H5N1) virus infection.

Recommendations for Protecting Farmers and Poultry, Backyard Bird Flock Owners

1. To reduce the risk of HPAI A(H5N1) virus infection, poultry farmers and poultry workers, backyard bird flock owners, livestock farmers and workers, veterinarians and veterinary staff, and emergency responders should avoid unprotected direct physical contact or close exposure with the following birds, animals and materials potentially infected or confirmed to be infected with HPAI A(H5N1) virus:
 - Sick birds, or sick livestock in a 10 km radius around epicenter.
 - Carcasses of birds, livestock, or other animals in a 10 km radius around the epicenter.
 - Faeces or litter
 - Raw milk of sick animals.
 - Surfaces and water (e.g., ponds, buckets, pans, troughs) that might be contaminated with bird and animal excretions.
2. Farmers, workers, and emergency responders should wear appropriate PPE when in direct or close physical contact with sick birds, livestock, or other animals, carcasses, faeces, litter, raw milk or surfaces and water that might be contaminated with animal excretions from potentially or confirmed infected birds, livestock, or other animals, and when going into not yet disinfected buildings where these animals or materials are or were housed.

Recommendations for Clinicians

Clinicians should consider the possibility of HPAI A(H5N1) virus infection in persons showing signs or symptoms of acute respiratory illness who have relevant exposure history. This includes persons who have had contact with potentially infected sick or dead birds within 9 days before symptom onset (e.g., handling, slaughtering, de-feathering, butchering, culling, preparing for consumption or consuming uncooked or undercooked food of potentially infected birds); and persons who have had prolonged exposure to potentially infected birds in a confined space. Clinicians should admit and isolate the patient, contact the state public health department to arrange testing for the influenza A(H5N1) virus, collect recommended respiratory specimens using PPE and start empiric oseltamivir. Testing for other potential causes of acute respiratory illness should also be considered depending upon the local epidemiology of circulating respiratory viruses, including SARS-CoV-2.

Recommendations for Surveillance and Testing

People exposed to HPAI A(H5N1)-infected birds (including people wearing recommended PPE) should be monitored for signs and symptoms of acute respiratory illness beginning after their first exposure and for 10 days after their last exposure.

Criteria for Avian Influenza A Virus Testing

Testing should be performed on persons who meet Epidemiologic criteria AND either Clinical OR Public Health Response criteria and should be tested for HPAI A(H5N1) virus infection by reverse-transcription polymerase chain reaction (RT-PCR) assay using H5-specific primers and probes.

Epidemiological Criteria

Persons with recent exposure (within 10 days) to HPAI A(H5N1) virus through one of the following:

◆ Exposure to HPAI A(H5N1) virus-infected birds defined as follows;

- Close exposure (within six feet) to birds or other animals, with confirmed avian influenza A(H5N1) virus infection. Bird or other animal exposures can include, but are not limited to handling, slaughtering, de-feathering, butchering, culling, or preparing birds or other animals for consumption, or consuming uncooked or undercooked food or related uncooked food products,

OR

- Direct contact with surfaces contaminated with faeces, unpasteurized (raw) milk or other unpasteurized dairy products, or bird or animal parts (e.g., carcasses, internal organs) from infected birds or other animals,

OR

- Visiting a live bird market with confirmed bird infections or associated with a case of human infection with the HPAI A(H5N1) virus.

◆ Exposure to an infected person – Close (within six feet) unprotected (without the use of respiratory and eye protection) exposure to a person who is a confirmed, probable, or symptomatic suspected case of human infection with HPAI A(H5N1) virus (e.g., in a household or health care facility).

◆ Laboratory exposure (unprotected exposure to HPAI A(H5N1) virus in a laboratory)

Clinical Criteria

Persons with signs and symptoms consistent with acute upper or lower respiratory tract infection, or complications of acute respiratory illness without an identified cause. In addition, gastrointestinal symptoms such as diarrhoea are often reported with HPAI A(H5N1) virus infection. Examples include but are not limited to:

- Mild illness (e.g., cough, sore throat, eye redness or eye discharge such as conjunctivitis, fever or feeling feverish, rhinorrhea, fatigue, myalgia, arthralgia, headache)
- Moderate to severe illness: (e.g., shortness of breath or difficulty in breathing, altered mental status, seizures)
- Complications: pneumonia, respiratory failure, acute respiratory distress syndrome, multi-organ failure (respiratory and kidney failure), sepsis, meningoencephalitis

Public Health Response Criteria

- 1) Symptomatic persons who are residing within the designated Alert Zone (10 km radius from the epi-centre) should be thoroughly screened for direct physical contact or close exposure with birds, animals and materials potentially infected or confirmed to be infected with HPAI A(H5N1) virus. If there is no potential exposure testing should be undertaken as per the existing ILI/SARI protocol.
- 2) Testing of asymptomatic persons for HPAI A(H5N1) virus infection is not routinely recommended. As part of public health investigations, asymptomatic persons, such as close contacts of a confirmed case of HPAI A(H5N1) virus infection, might be tested after consultation with State RRT.

Preferred Clinical Specimens

For persons with suspected HPAI A(H5N1) virus infection, the following specimens should be collected as soon as possible after illness onset or when deemed necessary: a nasopharyngeal swab and a nasal swab combined with an oropharyngeal swab (e.g., two swabs combined into one viral transport media vial). The nasopharyngeal swab and the combined nasal-throat swabs should be tested separately. If these specimens cannot be collected, a single nasal or oropharyngeal swab is acceptable. If the person has conjunctivitis (with or without respiratory symptoms), both a conjunctival swab and a nasopharyngeal swab should be collected. Patients with severe respiratory disease also should have lower respiratory tract specimens (e.g., an endotracheal aspirate or bronchoalveolar lavage fluid) collected, if possible. For severely ill persons, multiple respiratory tract specimens from different sites should be obtained to increase the potential for HPAI A(H5N1) virus detection.

Recommendations for Infection Prevention and Control

Standard, contact and airborne precautions are to be adopted while caring for patients presenting for medical care or evaluation who have illness consistent with influenza and recent exposure to birds or other animals potentially infected with HPAI A(H5N1) virus.

Recommendations for Influenza Antiviral Treatment and Chemoprophylaxis

There are no data from randomized clinical trials of antiviral treatment of outpatients or hospitalized patients with H5N1 virus infection. Among patients hospitalized with seasonal influenza A or B, pandemic 2009 influenza A (H1N1), or highly pathogenic avian influenza A(H5N1) virus infections, observational studies suggest that early treatment [within 48 hours of symptom onset] reduces disease severity and mortality. Although earlier antiviral treatment results in greater clinical benefit, observational studies support the use of antiviral treatment in hospitalized patients with seasonal influenza even when started after 48 hours of illness, including in critically ill patients. Neuraminidase inhibitor treatment with oseltamivir, peramivir, or zanamivir has been used for severely ill persons infected with A(H7N9) viruses, but their effectiveness for treatment of severe disease caused by avian influenza A virus infections has not been determined. Most avian influenza A(H7N9), A(H5N1), and A(H5N6) viruses are susceptible to the neuraminidase inhibitors (oseltamivir, peramivir and zanamivir) and baloxavir, but are often resistant to the adamantanes (amantadine and rimantadine).

Treating Symptomatic Persons with Bird or Other Animal Exposures

Outpatients meeting epidemiologic exposure criteria who develop signs and symptoms compatible with influenza should be referred for prompt medical evaluation, testing and empiric initiation of antiviral treatment with oseltamivir as soon as possible. Clinical benefit is greatest when antiviral treatment is administered early, especially within 48 hours of illness onset. Hospitalized patients who are confirmed, probable or suspected cases of human infection with the HPAI A(H5N1) virus, regardless of time since illness onset are recommended to initiate antiviral treatment with oseltamivir as soon as possible. Antiviral treatment should not be delayed while waiting for laboratory testing results.

- The standard dose of oseltamivir is 75 mg twice daily for 5 days. However, the optimal duration and dosing are uncertain for patients with severe disease. Avian influenza A(H5N1) and A(H7N9) viruses have been shown to be associated with higher virus levels and longer duration of viral replication (particularly in the lower respiratory tract) in hospitalized patients than with seasonal influenza A or B virus infection. Pending further data, longer courses of treatment (e.g., 10 days) should be considered for severely ill hospitalized patients with novel influenza A virus infections.

Antiviral treatment recommendations according to case definition category for human infection with novel influenza A viruses associated with severe disease.

Case Category	Definition	Antiviral Treatment
Confirmed Case	Avian influenza A virus infection in a person that is confirmed by CDC's Influenza Division Laboratory or a CDC designated laboratory using methods mutually agreed upon by CDC and the Council of State and Territorial Epidemiologists (CSTE).	Recommended for all (hospitalized patients and outpatients)
Suspected Case (also called Case under investigation)	A person meeting criteria for avian influenza A virus infection below and for whom confirmatory laboratory test results are unknown or pending.	
Probable Case	A person meeting criteria for avian influenza A virus infection below and for whom laboratory test results do not provide a sufficient level of detail to confirm HPAI A H5 virus infection.	Recommended for all (hospitalized patients and outpatients)

*Criteria for Avian Influenza A Virus Testing are given above.

Chemoprophylaxis of Persons with Exposure to HPAI A(H5N1) Virus: Chemoprophylaxis with influenza antiviral medications can be considered for any person meeting epidemiologic exposure criteria. Decisions to initiate post-exposure antiviral chemoprophylaxis should be based on clinical judgment, with consideration given to the type of exposure, duration of exposure, time since exposure and known infection status of the birds or animals the person was exposed to.

Antiviral chemoprophylaxis is not routinely recommended for personnel who used proper PPE and experienced no breaches while handling sick or potentially infected birds or other animals or decontaminating infected environments (including animal disposal).

If antiviral chemoprophylaxis is initiated, oseltamivir treatment dosing (one dose twice daily) is recommended instead of the antiviral chemoprophylaxis regimen for seasonal influenza.

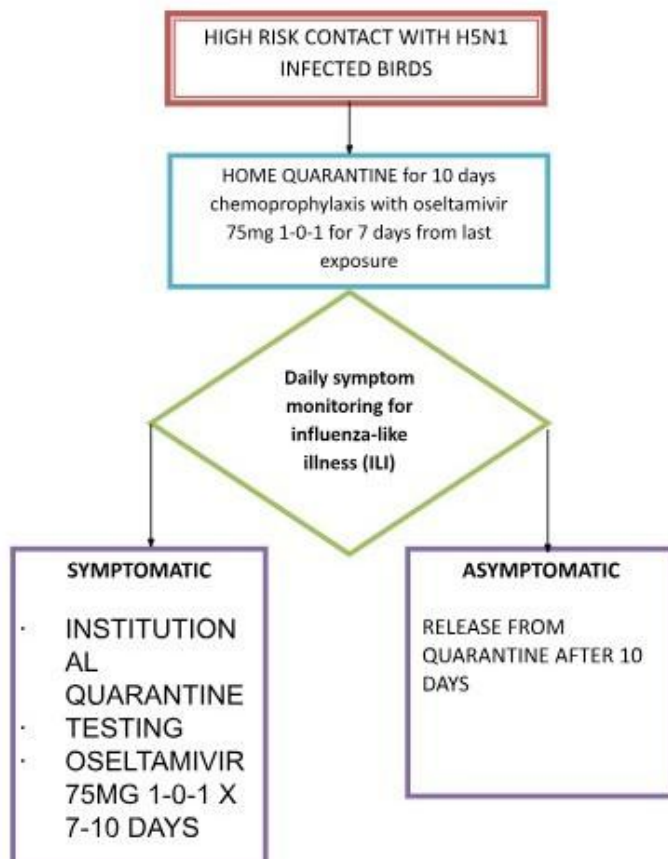
Treatment and Chemoprophylactic dose of oseltamivir for H5N1

If younger than 1 yr old: 3 mg/kg/dose twice daily. If 1 yr or older, the dose varies by child's weight: 15 kg or less, the dose is 30 mg twice a day: >15 to 23 kg, the dose is 45 mg twice a day : >23 to 40 kg, the dose is 60 mg twice a day: >40 kg, the dose is 75 mg twice a day.

Renal dose Modification of Oseltamivir

	Creatinine Clearance	Recommended Treatment Regimen
Oral Oseltamivir	Creatinine Clearance 61 to 90 ml/min	75 mg twice a day
	Creatinine Clearance 31 to 60 ml/min	30 mg twice a day
	Creatinine Clearance 11 to 30 ml/min	30 mg once daily
	ESRD patients on hemodialysis Creatinine Clearance $\leq$ 10 ml/min	30 mg after every hemodialysis cycle. Treatment duration not to exceed 5 days
	ESRD patients on Continuous Ambulatory Peritoneal Dialysis Creatinine Clearance $\leq$ 10 ml/min	A single 30 mg dose administered immediately after a dialysis exchange

SOP FOR HIGH-RISK CONTACTS OF H5N1 INFECTED BIRDS



Conclusions

A small number of sporadic human cases of highly pathogenic avian influenza (HPAI) A(H5N1) have been identified worldwide since 2022, amidst a panzootic of these viruses in wild birds and poultry. Nearly all human cases reported globally since 2022 were associated with poultry exposures, and no cases of human-to-human transmission of the HPAI A(H5N1) virus have been identified. Three human cases of HPAI A(H5N1) virus infection in dairy farm workers were reported during April and May 2024 in the United States and were attributed to exposures to dairy cattle. One previous human case was detected in the United States in 2022 during poultry culling work. In a few cases, the source of exposure to the HPAI A(H5N1) virus was unknown. To date, HPAI A(H5N1) viruses currently circulating most commonly in birds and poultry, with spillover to mammals and humans, do not have the ability to efficiently bind to receptors that predominate in the human upper respiratory tract. This is a major reason why the current risk to the public from HPAI A(H5N1) viruses remains low. However, because of the potential for influenza viruses to rapidly evolve and the wide global prevalence of HPAI A(H5N1) viruses in wild birds and poultry outbreaks and following the identification and spread among dairy cattle in the United States, additional sporadic human infections are anticipated. Continued comprehensive surveillance of these viruses in wild birds, poultry, mammals, and people worldwide and frequent reassessments are critical to determine the public health risk, along with ongoing preparedness efforts.

References

1. Interim Guidance on the Use of Antiviral Medications for Treatment of Human Infections with Novel Influenza A Viruses Associated with Severe Human Disease –CDC
2. Highly Pathogenic Avian Influenza A(H5N1) Virus Infection in a Dairy Farm Worker
Published May 3, 2024:DOI: 10.1056/NEJMc2405371
3. H5N1 Technical Report: CDC



GOVERNMENT OF KERALA

Abstract

Health & Family Welfare Department - Kerala State Dengue Fever Treatment and Referral Guidelines 2023 - Orders issued

HEALTH & FAMILY WELFARE (F) DEPARTMENT

G.O.(Rt)No.1654/2023/H&FWD Dated, Thiruvananthapuram, 10-07-2023

Read:- Letter No.DHS/12469/2023-PH1 dated 30.06.2023 from the Director of Health Service

ORDER

Dengue ranks as the most important, rapidly emerged mosquito-borne viral disease in recent years and is endemic in all continents. In order to manage the dengue fever cases effectively and systematically, Government are pleased to issue "Kerala State Dengue Fever Treatment and Referral Guidelines, 2023" incorporating phases of symptomatic Dengue, Dengue in pregnancy, clinical course of Dengue Haemorrhagic Fever (DHF), clinical features of DF/DHF & DSS, case definitions and treatment, hospitalisation criteria, clinical management including circulation of fluids, protocol for Dengue fever risk stratification and referral, as annexed to this order.

(By order of the Governor)
A P M MOHAMMED HANISH
PRINCIPAL SECRETARY

To:

The State Mission Director - National Health Mission, Thiruvananthapuram.

The Director of Health Services, Thiruvananthapuram.

The Director of Medical Education, Thiruvananthapuram.

The Director, Public Health Lab, Thiruvananthapuram.

All District Medical Officers.

Principal Accountant General (A&E/Audit) Kerala,

Thiruvananthapuram.

Information & Public Relations (Web & New Media) Department

Stock File/ Office Copy (to file F2/213/2023-HEALTH)

Forwarded /By order

Signed by

Vilasini K V

Date: 10-07-2023 14:25:00

Section Officer

**DENGUE FEVER TREATMENT AND REFERRAL GUIDELINES –
KERALA STATE 2023****EPIDEMIOLOGY**

Dengue ranks as the most important, rapidly emerged mosquito-borne viral disease in recent years and is endemic in all continents. It has shown an increase due to various reasons – construction activities, lifestyle changes, deficient water management, improper water storage, stagnation of rain water in containers lying outside houses and practices leading to proliferation of vector breeding sites in urban, semi-urban and rural areas.

The epidemiology of dengue is an intricate phenomenon which depends upon a complex relationship between epidemiological factors, viz. host (man and mosquito), agent (virus) and the environment (abiotic and biotic factors). The complexity of relationship among these factors eventually determines the level of endemicity in an area. During inter-epidemic periods, the transmission of dengue remains low due to extremes of temperature with low relative humidity, but during monsoons the environment becomes suitable for vectors. Temperatures in the range of $25\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$, relative humidity around 80% and innumerable small water collections result in high vector density.

DENGUE VIRUS

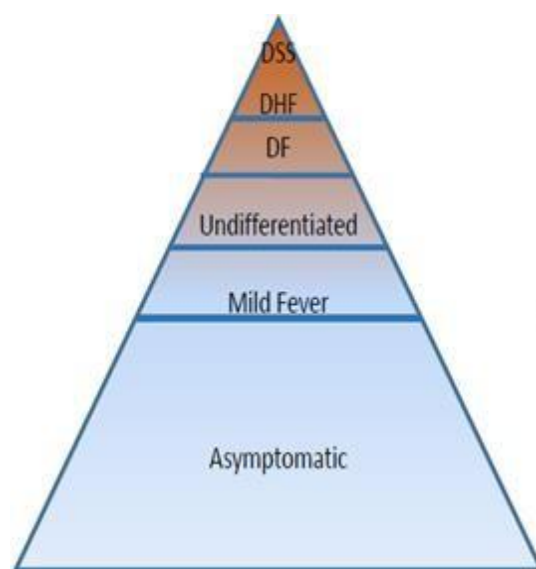
The agent of dengue, i.e. dengue viruses, are categorized under the genus Flavivirus. These viruses contain single stranded RNA and are small in size (50nm). There are four dengue virus serotypes which are designated as DENV-1, DENV-2, DENV-3 and DENV-4. Serotype DENV-5 which is sylvatic has not been detected in Kerala. These serotypes may be in circulation either singly, or more than one can be in circulation in any area at the sametime. Although all four serotypes are antigenically similar, they are different enough to elicit crossprotection only for a few months after infection by any one of them [Heterotypic immunity]. Recent studies shows that heterotypic immunity might persist from months to upto two years. Infection with any one serotype confer lifelong immunity to the virus serotype [Homotypic immunity].

MOLECULAR EPIDEMIOLOGY

The four dengue virus serotypes [DENV-1–4], form a phylogenetic group and differ in nucleotide sequence from each other. These are closely related to one another rather than to other flaviviruses and form an antigenic complex of their own. The four dengue virus serotypes can co-circulate in the endemic areas because the immunity to one serotype does not afford protection from the infection by a heterotopous serotype. Individual variations occur in antibody responses to the dengue virus. Secondary infections are associated with elevated risks of severe disease outcomes. Primary and secondary infections are distinguishable based on their antibody responses. The ability of all DENV serotypes to utilize pre-existing heterotypic flavivirus antibody to enhance infection [Antibody dependent enhancement ADE] is a unique feature of DENV which distinguishes it from all other flaviviruses and is considered to be the primary basis of DENV pathogenesis.

CLINICAL MANIFESTATIONS

An estimated 40%–80% of DENV infections are asymptomatic. Symptomatic dengue most commonly presents as a mild to moderate, nonspecific, acute febrile illness; $\leq 5\%$ of all dengue patients develop severe, life-threatening disease. Early clinical findings are nonspecific but require a high index of suspicion; recognizing early signs of shock and promptly initiating intensive supportive therapy can reduce risk for death among patients with severe dengue by ≥ 20 -fold.



- Infection with one of the four dengue viruses will induce long-lived immunity for that specific virus.
- Because there are four dengue viruses, people can be infected with DENV multiple times in their life.
- Approximately 1 in 20 patients with dengue virus disease progress to develop severe, life-threatening disease called severe dengue.
 - The second infection with DENV is a risk factor for severe dengue.
- Early clinical findings are nonspecific but require a high index of suspicion because recognizing early signs of shock and promptly initiating intensive supportive therapy can reduce risk of death among patients with severe dengue to <0.5%.

Phases of Symptomatic Dengue

- **Febrile Phase**
- Symptomatic dengue begins abruptly after an incubation period of 5–7 days (range 3–10 days) and has a 3-phase clinical course: febrile, critical, and convalescent. Fever typically lasts 2–7 days and can be biphasic. Other signs and symptoms include severe headache; retro-orbital pain; bone, joint, and muscle pain; macular or maculopapular rash; and minor hemorrhagic manifestations, including ecchymosis, epistaxis, bleeding gums, hematuria, petechiae, purpura, or a positive tourniquet test result. Some patients have an injected oropharynx and facial erythema in the first 24–48 hours after onset. Warning signs of progression to severe dengue occur in the late febrile phase around the time of defervescence (i.e., temperature <100.4°F [38°C]) and can include severe abdominal pain, difficulty breathing, extravascular fluid accumulation, progressive increase in hematocrit (hemoconcentration), postural hypotension, lethargy or restlessness, liver enlargement, mucosal bleeding, and persistent vomiting.
- **Critical Phase**
- The critical phase of dengue begins at defervescence and typically lasts 24–48 hours. Most patients improve clinically during this phase, but those with substantial plasma leak (resulting from marked increase in vascular permeability) progress to severe dengue. Patients with substantial plasma leak can develop ascites or pleural effusions, hemoconcentration, and

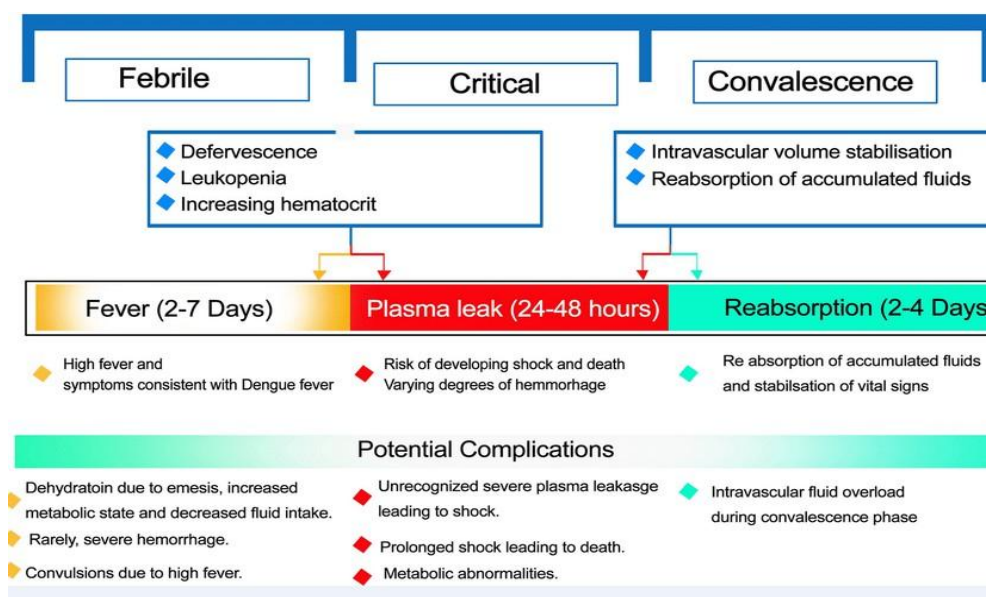
hypoproteinemia. Physiologic compensatory mechanisms narrow the pulse pressure as diastolic blood pressure increases, initially maintaining adequate circulation; patients might appear well despite early signs of shock.

- Once hypotension develops, however, systolic blood pressure rapidly declines, and irreversible shock and death can ensue despite resuscitation efforts. Especially in cases of prolonged shock, patients can develop severe hemorrhagic manifestations, including hematemesis, melena, or menorrhagia. Uncommon manifestations during this phase include encephalitis, hepatitis, myocarditis, and pancreatitis. Laboratory findings commonly include elevated aspartate aminotransferase and alanine aminotransferase, hyponatremia, leukopenia, lymphopenia, thrombocytopenia, and a normal erythrocyte sedimentation rate.

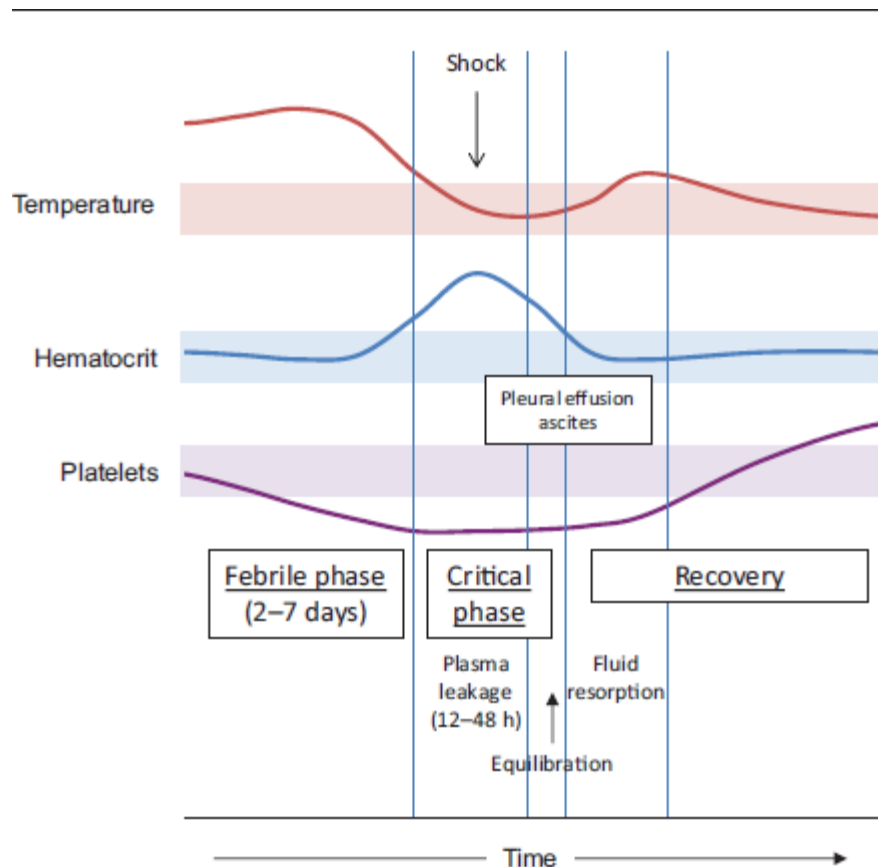
• Convalescent Phase

- As plasma leakage subsides, patients enter the convalescent phase and well-being improves; extravasated intravenous fluids and abdominal and pleural effusions are reabsorbed, hemodynamic status stabilizes (although bradycardia could manifest), and diuresis ensues. The patient's hematocrit stabilizes (or falls because of the dilutional effect of the reabsorbed fluid), and the white cell count usually starts to rise, after which the platelet count recovers. The convalescent phase rash might desquamate and be pruritic.

Phases of infection in Dengue Hemorrhagic fever



CLINICAL COURSE OF DENGUE HAEMORRHAGIC FEVER [DHF]



Dengue in Pregnancy

Data are limited on health outcomes of dengue in pregnancy and effects of maternal infection on the developing fetus. Perinatal transmission can occur, and peripartum maternal infection can increase the likelihood of symptomatic infection in the newborn. Signs and symptoms in perinatally infected neonates typically present during the first week of life and include ascites or pleural effusions, fever, hemorrhagic manifestations, hypotension, and thrombocytopenia. Placental transfer of maternal IgG against DENV from a previous maternal infection might increase risk for severe dengue among infants infected at 6–12 months of age when the protective effect of antibodies wanes.

CLINICAL CRITERIA FOR DF/DHF AND DSS

Clinical Features of DF:

An acute febrile illness of 2-7 days duration with two or more of the following manifestations:
Headache, retro-orbital pain, myalgia, arthralgia, rash, haemorrhagic manifestations.

Dengue Haemorrhagic Fever (DHF):

- a). A case with clinical criteria of dengue Fever
plus
- b). Haemorrhagic tendencies evidenced by one or more of the following
 - 1. Positive tourniquet test
 - 2. Petechiae, ecchymoses or purpura
 - 3. Bleeding from mucosa, gastrointestinal tract, injection sites or other sitesPlus
- c). Thrombocytopenia ($< 100\,000$ cells per cumm)
plus
- d). Evidence of plasma leakage due to increased vascular permeability, manifested by one or more of the following:
 - 1. A rise in average haematocrit for age and sex $\geq 20\%$
 - 2. A more than 20% drop in haematocrit following volume replacement treatment compared to baseline
 - 3. Signs of plasma leakage (pleural effusion, ascites, hypoproteinemia)

Dengue Shock Syndrome (DSS):

All the above criteria for DHF with evidence of circulatory failure manifested by rapid and weak pulse and narrow pulse pressure ($\leq 20\%$ mm Hg) or hypotension for age, cold and clammy skin and restlessness.

EXPANDED DENGUE SYNDROME

System	Unusual or atypical manifestations
CNS involvement	Encephalopathy, encephalitis, febrile seizures, I/C bleed
G. I. involvement	Acute Hepatitis / fulminant hepatic failure, cholecystitis, cholangitis acute pancreatitis
Renal involvement	Acute renal failure, hemolytic uremic syndrome, acute tubular necrosis
Cardiac involvement	Cardiac arrhythmia, cardiomyopathy, myocarditis, pericardial effusion
Respiratory	Pulmonary oedema, ARDS, pulmonary hemorrhage. pleural effusion
Eye	Conjunctival bleed, macular hemorrhage, visual impairment, Optic neuritis

Tourniquet test: The tourniquet test is performed by inflating a blood pressure cuff to a midpoint between the systolic and diastolic pressure and maintain for five minutes. The test is considered positive when 10 or more petechiae per one square inch area over forearm are observed. In DHF, the test usually gives a definite positive test with 20 petechiae or more. The test may be negative or only mildly positive during the phase of profound shock (DSS) and may be false negative in obesity.

CASE DEFINITION

Probable DF/DHF:

A case compatible with clinical description of dengue Fever during outbreak:

OR

Non-ELISA based NS1 antigen/ IgM positive.

Confirmed case

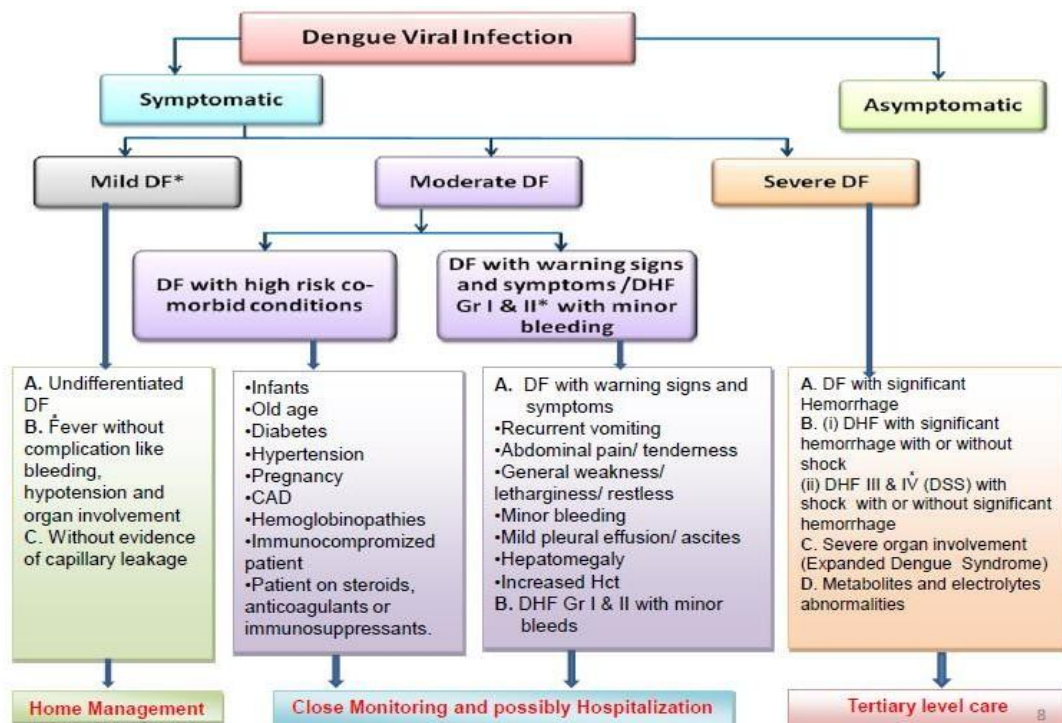
A case compatible with the clinical description of dengue fever with at least one of the following

- Isolation of the dengue virus (Virus culture +VE) from serum, plasma, leucocytes.
- Demonstration of IgM antibody titre by ELISA positive in single serum sample.
- Demonstration of dengue virus antigen in serum sample by NS1-ELISA.
- IgG seroconversion in paired sera after 2 weeks with Four fold increase of IgG titre.
- Detection of viral nucleic acid by polymerase chain reaction (PCR).

WARNING SIGNS TO IDENTIFY DENGUE PATIENTS AT RISK OF PROGRESSION TO SEVERE DISEASE

- Abdominal pain: progressive until it is continuous or sustained and intense, and at the end of the febrile stage.
- Sensory disorder: irritability, drowsiness, and lethargy.
- Mucosal bleeding: gingivorrhagia, epistaxis, vaginal bleeding not associated with menstruation or more menstrual bleeding than usual, and hematuria.
- Fluid accumulation: clinical, on imaging, or both, at the end of the febrile stage.
- Hepatomegaly: more than 2 cm below the costal margin and abrupt onset.
- Vomiting: persistent (three or more episodes in one hour or four episodes in six hours)
- Progressive increase in hematocrit: on at least two consecutive measurements during patient monitoring

DENGUE CASE CLASSIFICATION



***Close monitoring:** Hct, Plt, Hb, fluid intake/output, HR, RR, BP, and Consciousness

GRADING OF DF/DHF

*DF: Fever of 2-7 days with two or more of following- Headache, Retro orbital pain, Myalgia, Arthralgia with or without leukopenia, thrombocytopenia and no evidence of plasma leakage.

DHFI: Above criteria plus positive tourniquet test and evidence of plasma leakage. Thrombocytopenia with platelet count less than 100000/ cu.mm and Hct rise more than 20% over baseline.

DHFII: Above plus some evidence of spontaneous bleeding in skin or other organs (black tarry stool, epistaxis, gum bleeds) and abdominal pain. Thrombocytopenia with platelet count less than 100000/ cu.mm and Hct rise more than 20% over baseline.

DHFIII (DSS): Above plus circulatory failure (weak rapid pulse, narrow pulse pressure < 20 mm Hg, Hypotension, cold clammy skin, restlessness). Thrombocytopenia with platelet count less than 100000/ cu.mm and Hct rise more than 20% over baseline.

DHFIV (DSS): Profound shock with undetectable blood pressure or pulse. Thrombocytopenia with platelet count less than 100000/ cu.mm and Hct rise more than 20% over baseline.

CRITERIA FOR HOSPITALISATION

- Dengue with warning signs
- Dengue with criteria of severe disease.
- Oral intolerance.
- Difficulty breathing.
- Narrowing pulse pressure [≤ 20 mm of Hg].
- Arterial hypotension .
- Acute renal failure.
- Prolonged capillary refill time [> 2 sec].
- Pregnancy .
- Coagulopathy.

CLINICAL PHASE WISE MANAGEMENT OF DENGUE FEVER

Febrile Phase

- **Paracetamol** 10mg/kg q 6th hourly. Avoid NSAIDS, steroids, antibiotics.
- Encourage plenty of isotonic **oral fluids** especially fluids like ORS, milk, salted kanji water, coconut water etc., which would ensure hydration with proper

electrolyte balance. Plain water should be given with caution as it can lead to hyponatremia and may contribute to leakage of fluid into interstitial space.

IV fluids

As far as possible avoid IV fluids in this stage and advocate oral feeds. Only 1/3rd of the fluid administered will remain in the intravascular compartment rest will go to the interstitial compartment and resorption will occur only during the resorptive phase. Fluids administered in the febrile phase will not prevent shock in the critical phase but paradoxically may make treatment more difficult due to the presence of more fluid in the interstitium even before the onset of the leaky phase. If **IV fluids** are indicated due to vomiting or any other Gastrointestinal contraindication then administer only isotonic IV fluids DNS or Plasmalyte @ **1.5ml/kg/hour** ensuring adequate urine output (>1ml/kg/hr) **and** normal vitals.

- Educate regarding warning signs especially on the importance of monitoring urine output.

CRITICAL PHASE

Usually critical phase is marked by defervescence with leucocyte count at its nadir with rapidly falling platelet count. Excessive fatiguability despite defervescence may herald critical phase. Remember patient may be still febrile in this phase. Leucopenia is not mandatory. In fact only 20% of dengue death patients have leucopenia. Leucocytosis may be indicative of occult bleed or coinfection .

STEP 1 : Categorise as DF or DHF

Every patient presenting in this stage needs to be *categorised as Dengue fever (DF) or Dengue haemorrhagic fever (DHF)*. Usually it's the DHF cases that may progress to shock, bleeding etc. Dengue fever cases are unlikely to develop severe capillary leak but can manifest with Expanded Dengue syndrome (EDS). More than 50% of EDS result from undetected shock leading to organ failure.

How to identify DHF?

Classically DHF is defined as evidence of **haemorrhage** (spontaneous or positive tourniquet test) and **capillary leak** in a patient with **fever** and platelet count less than **1 lakh**. All the 4 criteria may not be present in the early stage so any patient

with evidence of bleed or capillary leak should be considered as having DHF and closely followed up.

Evidence of capillary leak includes

- Increase in hematocrit by more than 20%.
- Ascites or pleural effusion by Chest X-ray , USS or clinical examination.
- Gall bladder edema
- Serum albumin less than 3.5gm/dl.
- Intense persistent abdominal pain has a positive predictive value of 90% in diagnosing capillary leakage and 82% in diagnosing shock.

Hepatomegaly may precede the development of plasma leakage. S. Albumin is especially useful in cases of anemia, haemorrhage, early IV fluids and absence of a baseline hematocrit. A low ESR < 10mm/hr may help in differentiating Dengue shock from septic shock.

Step 2 : Look for warning signs or signs of severe dengue

Warning signs

- Intense abdominal pain (PPV 90% for plasma leak and 82% for shock). Often precedes shock by 24 hours. The epigastric pain is referred pain due to sudden accumulation of fluid in perirenal and pararenal spaces
- Vomiting > 3 times in an hour or 4 times in 6 hour.
- Clinical fluid accumulation as ascites or pleural effusion without respiratory distress or hemodynamic compromise.
- Mucosal bleeding
- Irritability or lethargy : Both are believed to occur due to cerebral hypoperfusion.
- Hepatomegaly more than 2 cm due to hepatic congestion, haemorrhage, fatty metamorphosis, pushing down of liver by pleural effusion
- Progressive rise in hematocrit in at least 2 occasions.

Severe Dengue

- Shock or respiratory distress due to plasma leakage
- Clinically significant bleed as considered by the attending physician.
- Severe organ involvement- Hepatitis, myocarditis, Encephalitis.

Early stages of shock are characterised by narrow pulse pressure as in dengue there is no circulation of lipopolysaccharides to cause a hot phase. *Wide pulse pressure shock may occur if there is coinfection with bacteria, hepatic failure or neurogenic shock due to CNS involvement*

Step 3 Investigations to be sent in critical phase

- CBC with PCV and ESR
- Blood grouping cross matching
- PT INR
- RFT
- LFT
- S. Albumin
- Blood glucose
- Serum calcium
- Cardiac enzymes – Trop T or Trop I, if myocarditis is suspected.
- Blood gas analysis
- Urine analysis
- Urine myoglobin in case of severe myalgia with acute kidney injury
- USG and echo
- In case of persisting fever into critical phase Serum Ferritin, LDH, CRP must be sent.

Step 4 Treatment

Dengue with warning signs

Start with 6ml/kg/hour with a target urine output of 1ml/kg/hour. Escalate or deescalate fluid rate according to urine output every hour (WHO recommends 10ml/kg/hour in children but in most children it may be highly deleterious in the

later shock stage as it will accumulate in the interstitium compromising respiration and fluid and nutrient delivery to organs subsequently]. Hence always aim to administer the minimum required fluid with the aim of matching rate of fluid administration with rate of leak. Oral fluids taken should also be included in the fluid intake..

Monitor vitals hourly and hematocrit 4 hourly.

*In case of children, if more than **three 10ml/kg/hour** boluses without improvement or rising hematocrit it should be considered as severe dengue and managed accordingly.*

Treatment of Shock

Consider the patient in shock if

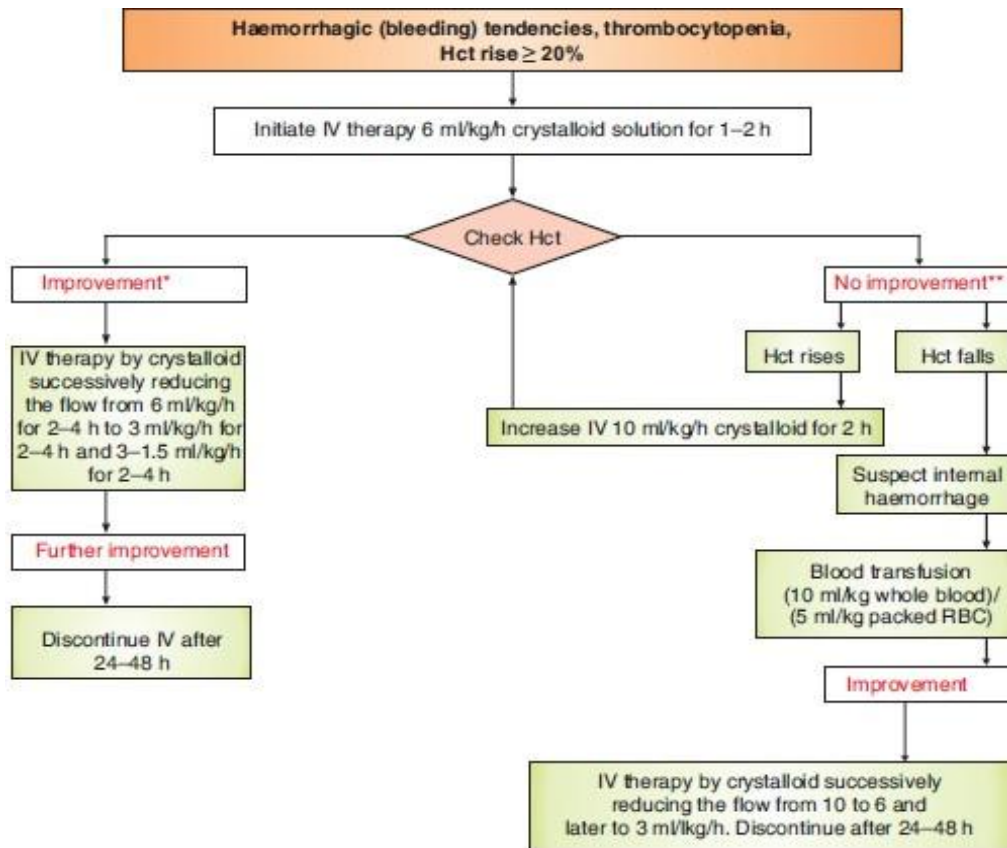
- Pulse pressure is less than 20mm Hg or
- Rapid, low volume pulse with any 2 of the following (CFT >2seconds, cold clammy skin, mottling)
- MAP less than 70mm of Hg in adults and those above 10 years of age, MAP less than 50 in 1-6month, <55mm in 6-12 months, < 60mm in 6-8 yrs, < 65mm in 8- 10 yrs is considered hypotension.

Fluids

General considerations

- Use ideal body weight for calculating fluid requirements in obese patients.
- For patients in shock limit fluid administration to 24 to 48 hours. For those without shock 60 to 72 hours fluid may be needed.
- Fluid intake calculations must include oral and IV.
- Intake output chart must be maintained hourly
- Try to limit fluids to maintenance + 5%.
- Rate of fluid administration should match the rate of fluid leak.

VOLUME REPLACEMENT ALGORITHM FOR PATIENTS WITH DHF 1 &2



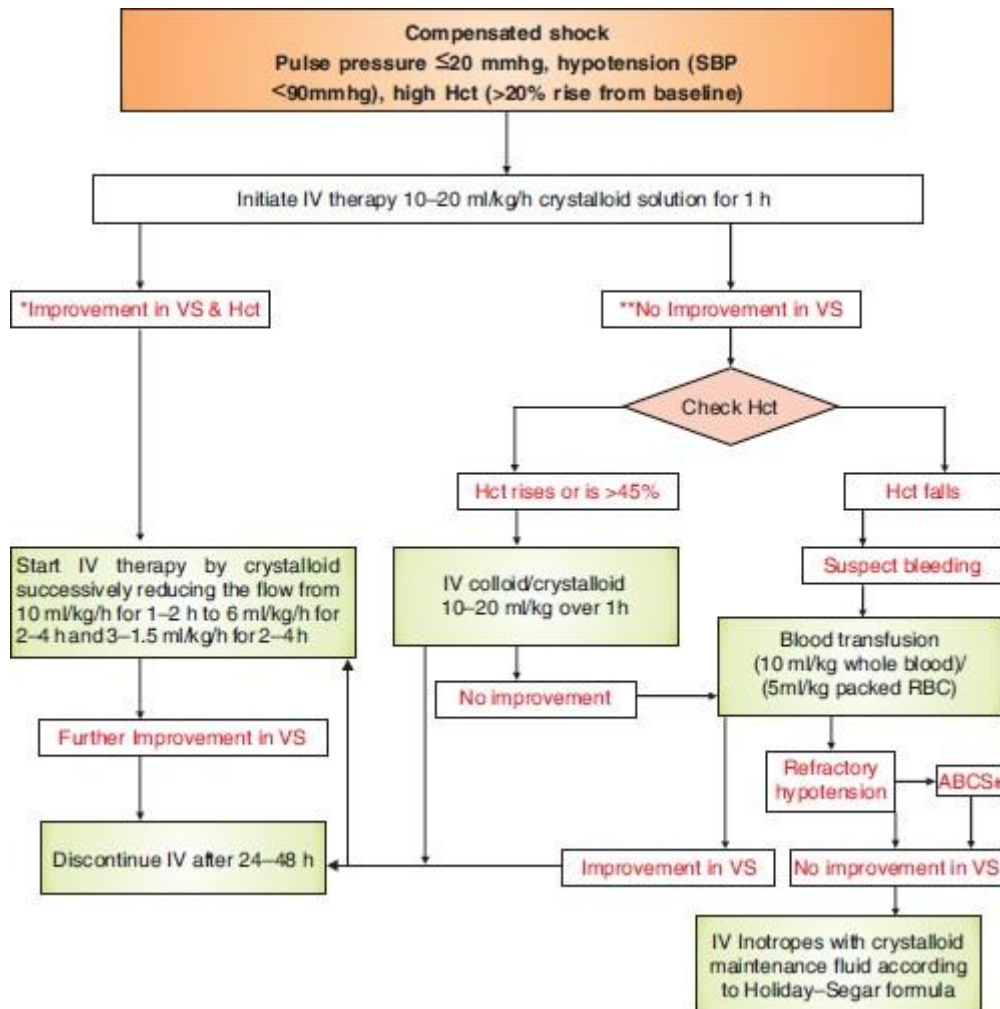
Notes:

*Improvement: Hct falls, pulse rate and blood pressure stable, urine output rises

**No Improvement: Hct or pulse rate rises, pulse pressure falls below 20 mmHg, urine output falls

* Fluid administration must be tailored to individual patient. Always monitor urine output closely. Target urine output 0.5 to 1ml per kg per hour. once urine output target attained, rapidly decrease rate of fluid administration.

VOLUME REPLACEMENT ALGORITHM FOR DHF GRADE III



Crystalloid: Normal Saline, ringer lactate

Colloid: Dextran 40/degraded gelatine polymer (polygeline)

ABCS = Acidosis, Bleeding, Calcium (Na⁺⁺ & K⁺), Sugar

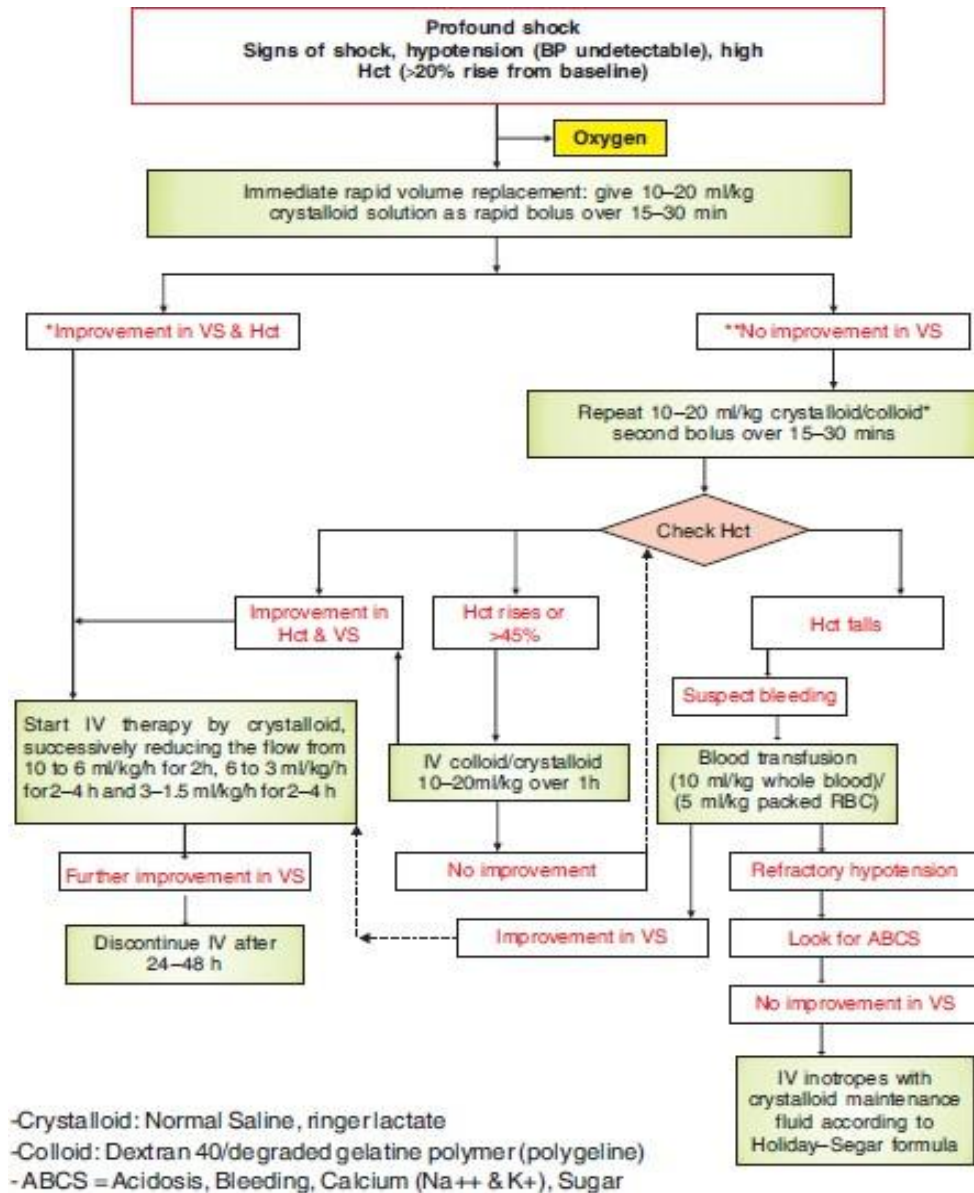
Notes:

*Improvement: Hct falls, pulse rate and blood pressure stable, urine output rises

**No improvement: Hct or pulse rate rises, pulse pressure falls below 20 mmHg, urine output falls

- Unstable vital signs: urine output falls, signs of shock
- In cases of acidosis, hyperosmolar or Ringer's lactate solution should not be used
- Serial platelet and Hct determinations: drop in platelets and rise in Hct are essential for early diagnosis of DHF
- Cases of DHF should be observed every hour for vital signs and urine output

VOLUME REPLACEMENT ALGORITHM FOR DHF IV



*Fluid administration should be tailored to individual patient needs. Fluid boluses over one hour are often preferred over rapid push pull administration of fluid as it can precipitate bleeding.

Treatment of Dengue shock

- Start with 20ml/kg / hour if absent pulse or 10ml/kg/hour of Normal saline (adult 500ml/hour) if pulse present with hypotension. (WHO recommends 20ml/kg in 15 to 30 mts). *Pushing in fluids by push pull method in children with absent pulse was observed to lead to increased risk of immediate massive haemorrhage and more capillary leak due to increase in shear pressure on the capillary endothelium.*
- **Monitor vitals every 15 minutes.** Once the pulse appears decrease rate to 10ml/kg /hour. Measure hematocrit 2 to 4 hourly and also before and after colloid and blood transfusion.
- If the patient does not improve continue 10 – 20 ml/kg / hour monitoring every 15 minutes to decide on decrease in rate.
- If after 60ml/kg of crystalloid if patient remains in shock consider colloid. If patient is already puffy then colloid may be given after 2 boluses.

Dextran 40 is preferred over hexa starch as colloid. Give in a dose of 10ml/kg/hour. Limit to 30ml/kg/day. Dextran 10ml/kg can decrease PCV by 10 points, if PCV fall is more than that consider occult bleed.

- If no improvement a second dose of colloid may be given. 20% albumin can also be considered.
- Look for ABCD if shock continues
 - A – Acidosis. Give bicarbonate 1 ml/kg as acidosis favours bleeding
 - B – Blood. Whole blood 10ml/kg or packed cell 5ml/kg is used. Reconstituted blood can also be used.

Indications for blood transfusion.

- Clinically severe bleed > 6-8ml/kg of IBW or 300ml in adults.
- Worsening acidosis.
- Unstable vitals with normal or low PCV.
- Rise in PCV of less than 20 % with persistent shock .
- Refractory shock inspite of 60ml/kg of fluids.

It is mandatory to check PCV before and after transfusion. If PCV does not rise after transfusion should consider as continuing bleed and blood transfusion repeated if *vitals remain unstable*

Rate of blood transfusion depends on vitals if in shock give over 1 hour otherwise 3 – 5ml/kg/hr

- C – Calcium. If hypocalcemia present give calcium gluconate 1ml/kg slow IV after equal dilution with D5 alternatively calcium infusion at a dose of 0.1 -0.2 ml/kg/hr can also be given.
- D – Dextrose-check for hypoglycemia and if present correct it.
- **Platelets** : There is no role for prophylactic platelet transfusion . May consider if less than 10,000/mm³ or if active massive bleed is continuing in spite of coagulopathy correction . A ratio of PRC : FFP : platelet of 2:1:1 may be considered in massive bleed. For surgery platelet count of >50,000cells/mm³ and for neurosurgery and eye surgery a count of more than 1 lakh is needed.
- **Coagulopathy** : Priority is for fluid and blood transfusion but if bleeding continues correction of coagulopathy is warranted. Check fibrinogen level if less than 100mg/dl give Cryoprecipitate @ 0.15 U /kg or 2 units per 10 kg.
- If the patient clinically improves decrease rate to 6 ml/kg/hr – 3ml/kg/hr – 1.5 ml/kg /hr monitoring urine output and ensuring urine output of 1ml/kg /hr.

Treatment of fluid overload with shock

In a patient with massive capillary leakage resulting in gross ascites/pleural effusion etc, further crystalloid administration to correct shock will result in excessive pleural effusion/ascites leading to respiratory distress. In such situations instead of crystalloids, colloids like Dextran 40 or 20% human albumin should be administered.

- IV Dextran 40,10ml/kg over 1 hour. Usually BP is restored in 10 -30 minutes . Then administer inj Furosemide 0.25mg/kg. Alternatively furosemide infusion can also be started but this leads to slower resolution of respiratory distress but better hemodynamic stability. Subsequently adjust fluid rate to obtain a urine out put of 0.5- 1ml/kg/hour. Monitor every 15minutes as patient can go into shock due to excessive diuresis. In case of severe fluid overload Dextran may be repeated with repeat Furosemide at 30 to 60 minutes interval, but subsequent dose of furosemide should be half of the initial dose if the first

dose resulted in high urine output and double the dose of furosemide if the 1st dose did not result in diuresis.

- If there is no urine output check the intravascular status . Higher doses (double dose)of furosemide may be tried.If the IVC is full it may indicate acute kidney injury and need for early initiation of RRT.
- Peritoneal dialysis catheter insertion will remove ascitic fluid leading to decrease in **intra abdominal pressure** which in turn will increase venous return to heart and improve renal perfusion often reversing renal failure.
- Other alternative RRT like CVVH can be opted for depending on availability and expertise.
- If above management fails pleural and ascitic fluid tapping may be done after informed consent of risk of bleeding to decrease respiratory distress and control of intra abdominal hypertension.

Ancillary treatment

- **HLH [secondary Hemophagocytic lymphohistiocytosis]** : If fever is persisting into critical phase and counts are decreasing think of infection associated HLH and screen for the same by measuring serum ferritin, triglycerides, fibrinogen . Ferritin more than 10,000 is highly sensitive and specific in diagnosing infection associated HLH. Treatment with IVIG + steroids +/- plasmapheresis may be considered.
- **Infections** Persisting hypoalbuminemia after 48 hours with fever and shock may indicate secondary infection leading to septic shock. Procalcitonin estimation, blood culture and escalation of antibiotic must be done if needed. Screen for co-infections like leptospirosis, scrub etc also.
- **Hepatic Injury** : If SGOT/ SGPT more than 1000 IU/ L consider
 - NAC [N-acetyl cysteine] 150mg /kg over 1 hour followed by 100mg /kg as infusion in D5 over 24 hours and continue it till PT INR less than 1.5.
 - Oral rifaximine 30mg/kg/day for gut sterilisation
 - Avoid hypoglycaemia
 - Measure phosphorous if low supplement phosphorous .
 - Treat hypokalemia if present

- Avoid constipation- lactulose may be given to ensure 2 – 3 semi solid stools / day.
- Inj. Vitamin K 0.3 to 0.5 mg/kg stat.
- If GI bleed present aspirate GI content .
- Inj pantoprazole 1mg/kg IV OD
- Recombinant factor VII in case of massive bleed associated with hepatic failure.
- **Renal Injury** - Grade according to RIFLE criteria
 - Avoid nephrotoxic drugs
 - Adjust dose of drugs being received as needed
 - Early initiation of RRT in situations where improvement in intravascular fluid status is unaccompanied by improvement in urine output.
- **Myocardial injury**
 May manifest with rhythm abnormalities, ST - T changes, poor ejection fraction and elevated cardiac enzymes.
 - Fluid management in patients with myocarditis and acute kidney injury should be guided by IVC volume status.
 - Symptomatic treatment of rhythm abnormalities
 - Maintain normal electrolytes including calcium, magnesium, potassium and phosphorous.
- **Hyperglycemia**
 If 2 values of blood glucose are above 180mg/dl titrate insulin infusion to achieve a target of blood glucose of 100 – 150mg/dl
- **Encephalitis**
 Death usually occurs due to massive brain edema leading to herniation. Patient may present with brain stem involvement during any phase of Dengue. A significant proportion of children with Dengue encephalitis present without warning signs.
 - Treat seizure or add prophylactic fosphenytoin
 - Give 3% normal saline 5ml per kg over 1 hour. Target serum sodium level of 145 to 150 meq per litre.

- Use isotonic fluids for resuscitation. Too much fluid may exacerbate ICP hence use judiciously.
- Intubate if GCS less than 8 or rapidly decreasing by more than 3 points. Take all precautions to prevent peri intubation surge in ICP. Hyperventilate, sedate with lorazepam 0.1mg/kg and fentanyl 1mcg/kg. Give Lidocaine 1mg/kg to prevent ICP surge due to gagging. Paralyse with vecuronium 0.1mg/kg and intubate.
- Post intubation keep a higher rate targeting a Pco₂ of 30 - 35mm in the first 12 to 24 hours. This would also help to maintain pH during shock so that inotropes can act better.
- Monitor urine output and pupillary reactions closely. Increase in urine output is usually indicative of central Diabetes insipidus. Measure urine and serum sodium and osmolality and confirm the diagnosis. DI if present should be treated by replacing the urine output with Isolyte P and IV vasopressin added to titrate urine output to 2- 3 ml/kg/hour.
- Polyuria can also be due to cerebral salt wasting hence check urinary sodium and use a fluid with sodium content similar to urine to replace urinary loss.
- Consider steroids in refractory cases.

• Resorption phase

Characterised by improvement in general well being, increase in serum albumin and stabilisation of vitals with fall in PCV and increased urine output. Stop IV fluid completely. Monitor intravascular fluid status. If fluid status good with normal vitals and increasing respiratory rate rule out pneumonia and consider resorption pulmonary edema.

- If not spontaneously diuresing consider Furosemide infusion @ 0.1 – 1mg/kg/hour.
- Hypokalemia may be present which needs treatment.

Oral potassium chloride 2 meq/kg /day to be added if potassium less than 3 .5meq/L with no ECG changes. If potassium less than 2.8 meq per litre or

with ECG changes give IV correction @ 0.3meq/kg/hr for 3 hours ensure that the peripheral concentration of potassium is ideally not more than 80 meq/litre.

CALCULATION OF FLUIDS

Required amount of fluid should be calculated on the basis of body weight and charted on a 1-3 hourly basis, or even more frequently in the case of shock. For obese and overweight patients calculation of fluid should be done on the basis of ideal body weight. The regimen of the flow of fluid and the time of infusion are dependent on the severity of DHF. The schedule given below is recommended as a guideline. It is calculated for dehydration of about 5% deficit (plus maintenance).

The maintenance fluid should be calculated using the Holiday and Segar formula as follows

Body weight in kg	Maintenance volume for 24 hours
<10 kg	100 ml / kg
10-20	1000+50 ml / kg body weight exceeding 10 kg
More than 20 kg	1500+20 ml / kg body weight exceeding 20 kg

For a child weighing 40 kgs, the maintenance is: $1500 + (20 \times 20) = 1900$ ml. Amount of fluid to be given in 24 hrs is calculated by adding maintenance + 5% dehydration which is equivalent to 50 ml/kg. This should be given in 24 hrs to maintain just adequate intravascular volume and circulation. Therefore for a child weighing 40 kg the fluid required will be $1900 + (40 \times 50) = 3900$ ml in 24 hrs. For intravenous fluid therapy of patients with DHF, four regimens of flow of fluid are suggested: 1.5/ml/kg/hr, 3ml/kg/hr; 6ml/kg/hr; 10ml/kg/hr, and 20ml/kg/hr. For ready reference, the calculated fluid requirements, based on bodyweight and rate of flow of fluid volume for the Five regimens are given in Table 1.

Choice of intravenous fluids for resuscitation

There is no clear advantage to the use of colloids over crystalloids in terms of the overall outcome. However, colloids may be the preferred choice if the blood pressure has to be restored quickly. Colloids have been shown to restore the cardiac index and reduce the level of haematocrit faster than crystalloids in patients with intractable shock and pulse pressure less than 10 mm Hg.

Crystalloids

Normal plasma chloride ranges from 95 to 105 mmol/L. 0.9% Saline is a suitable option for initial fluid resuscitation, but repeated large volumes of 0.9% saline may lead to hyperchloremic acidosis. Hyperchloremic acidosis may aggravate or be confused with lactic acidosis from prolonged shock. Monitoring the chloride and lactate levels will help to identify this problem. When serum chloride level exceeds the normal range, it is advisable to change to other alternatives such as Ringer's Lactate.

Ringer's Lactate

Ringer's Lactate has lower sodium (131 mmol/L) and chloride (115 mmol/L) contents and an osmolality of 273 mOsm/L. It may not be suitable for resuscitation of patients with severe hyponatremia. However, it is a suitable solution after 0.9 Saline has been given and the serum chloride level has exceeded the normal range. Ringer's Lactate should probably be avoided in liver failure and in patients taking metformin where lactate metabolism may be impaired.

Colloids

The types of colloids are gelatin-based, dextran-based and starch-based solutions. One of the biggest concerns regarding their use is their impact on coagulation. Theoretically, dextrans bind to von Willebrand factor/Factor VIII complex and impair coagulation the most. However, this was not observed to have clinical significance in fluid resuscitation in dengue shock. Of all the colloids, gelatine has the least effect on coagulation but the highest risk of allergic reactions. Allergic reactions such as fever, chills and rigors have also been observed in Dextran 70. Dextran 40 can potentially cause an osmotic renal injury in hypovolaemic patients.

Table 1. Requirement of fluid based on bodyweight

Bodyweight (In kgs)	Volume of fluid to be given in 24 hrs Maintenance + 5% deficit	Rate of fluid (ml/hours)				
		Regimen 1 1.5ml/kg	Regimen 2 3ml/kg	Regimen 3 6ml/kg	Regimen 4 10ml/kg	Regimen 5 20ml/kg
5	500+250=750	8	15	30	50	100
10	1000+500=1500	15	30	60	100	200
15	1250+750=2000	23	45	90	150	300
20	1500+1000=2500	30	60	120	200	400
25	1600+1250=2850	38	75	150	250	500
30	1700+1500=3200	45	90	180	300	600
35	1800+1750=3550	53	105	210	350	700
40	1900+2000=3900	60	120	240	400	800
45	2000+2250=4250	68	135	270	450	900
50	2100+2500=4600	75	150	300	500	1000
55	2200+2750=4950	83	165	330	550	1100
60	2300+3000=5300	90	180	360	600	1200

Note:

- The fluid volumes mentioned are approximate.
- The fluid replacement should be just sufficient to maintain effective circulation

during the period of plasma leakage.

- The recommended intravenous fluids are Normal saline, Ringers Lactate or 5%

DNS.

- One should keep a watch for Urine output, liver size and signs of pulmonary oedema. Hypervolaemia is a common complication.

- Normally intravenous fluids are not required beyond 36 to 48 hrs.
- Normally change should not be drastic. Do not jump from R-3 to R-5 since this can

overload the patient with fluid. Similarly, reduce the volume of fluid from R-5 to R-4, from R-4 to R3, and from R-3 to R-1 in a stepwise manner.

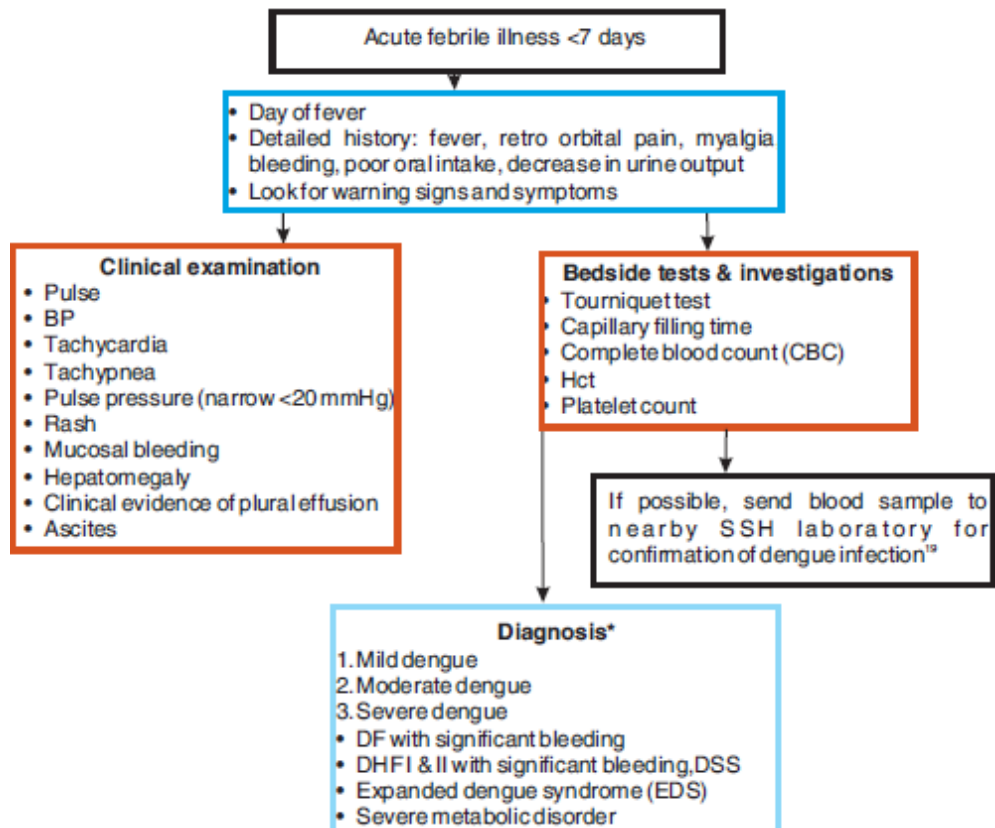
- Remember that ONEML is equal to 15 DROPS. In case of micro drip system, one ml is equal to 60 drops. (if needed adjust fluid speed in drops according to equipment used).
- It is advised to start with one bottle of 500 ml initially, and order more as and when required. The decision about the speed of IV fluid should be reviewed every 1-3 hours. The frequency of monitoring should be determined on the basis of the condition of the patient.

PROTOCOL FOR DENGUE FEVER RISK STRATIFICATION AND REFERRAL

Multiple studies have shown that case fatality rate[CFR] in dengue during outbreak years is high due to ineffective utilization of available resources. Majority of severe dengue deaths happens in tertiary care centres. Despite state of art infrastructure, critical care support and protocolized management, death in severe dengue still occurs. These deaths are because of inadequacies in risk stratification and allocation of resources resulting due to the sheer number of patients getting referred to tertiary care centers. The huge number of referrals during outbreaks stretches the available resources to the maximum and there is an improper allocation of resources.

The hallmark of DHF is capillary leakage and for effective utilization of resources, it has to be ensured that only patients with evidence of capillary leakage or expanded dengue syndrome [myocarditis/ARDS/encephalitis] reach tertiary care centres. Referral based on degree of thrombocytopenia alone will lead to unnecessary crowding in tertiary care centres which might comprise the intensive monitoring required for patients with DHF and DSS.

Diagnosis of Dengue Cases



Classification of Dengue Severity

Dengue without warning signs (DNWS)	Dengue with warning signs (DWWS)	Severe dengue (SD)
Person who lives or has traveled to areas with dengue transmission in the last 14 days and presents fever, usually of 2 to 7 days duration, and at least 2 of the following criteria: 1. Nausea / vomiting 2. Exanthema 3. Headache / retro-orbital pain 4. Myalgia / arthralgia 5. Petechiae or tourniquet test (+) 6. Leukopenia	Every dengue case that, near and preferably at defervescence, presents one or more of the following signs: 1. Intense abdominal pain or tenderness 2. Persistent vomiting 3. Fluid accumulation 4. Mucosal bleed 5. Lethargy/restlessness 6. Postural hypotension (lipothymia) 7. Liver enlargement >2 cm 8. Progressive increase in hematocrit	Every dengue case that has one or more of the following manifestations: 1. Shock or respiratory distress due to severe plasma leakage. 2. Severe bleeding: based on evaluation by the attending physician 3. Severe organ involvement (liver impairment, myocarditis, etc.)
Requires strict monitoring and immediate medical intervention		
First level Ambulatory management	Admit to hospital or dengue units	Hospitalize in ICU



INTERVENTION GROUPS

	Group A	Group B1	Group B2	Group C
Severity classification	Dengue without warning signs (DNWS)	Dengue without warning signs (DNWS)	Dengue with warning signs (DWWS)	Severe dengue (SD)
Group criteria	Tolerate sufficient volumes of oral fluids Urinate at least once every 6 hours No associated diseases or conditions, or social risk	Presence of associated diseases or conditions: • Pregnancy • ≤ 1 years old • ≥ 65 years old • Morbid obesity • Hypertension • Diabetes mellitus • Asthma • Renal damage • Hemolytic diseases • Chronic hepatomegaly • Peptic ulcer disease or gastritis of any etiology • Being treated with anticoagulants • Other or, Presence of social risk: • The patient lives alone or far from where they can receive medical care • Does not have transportation • Lives in extreme poverty	Every dengue case that, near and preferably at defervescence, presents one or more of the following signs: 1. Intense abdominal pain or tenderness 2. Persistent vomiting 3. Fluid accumulation 4. Mucosal bleed 5. Lethargy/restlessness 6. Postural hypotension (lipothymia) 7. Liver enlargement >2 cm 8. Progressive increase in hematocrit	Every dengue case that has one or more of the following manifestations: • Shock or respiratory distress due to severe plasma leakage. • Severe bleeding: based on evaluation by the attending physician • Severe organ involvement (liver impairment, myocarditis, etc.)
Management level of care	First level. At-home treatment	Possible referral to hospital or dengue units. Requires observation and treatment of their associated infection or condition.	Hospital or dengue units. Requires IV fluid administration.	Intensive Care Unit. Requires emergency treatment

CRITERIA FOR HOSPITALISATION OF DENGUE PATIENTS

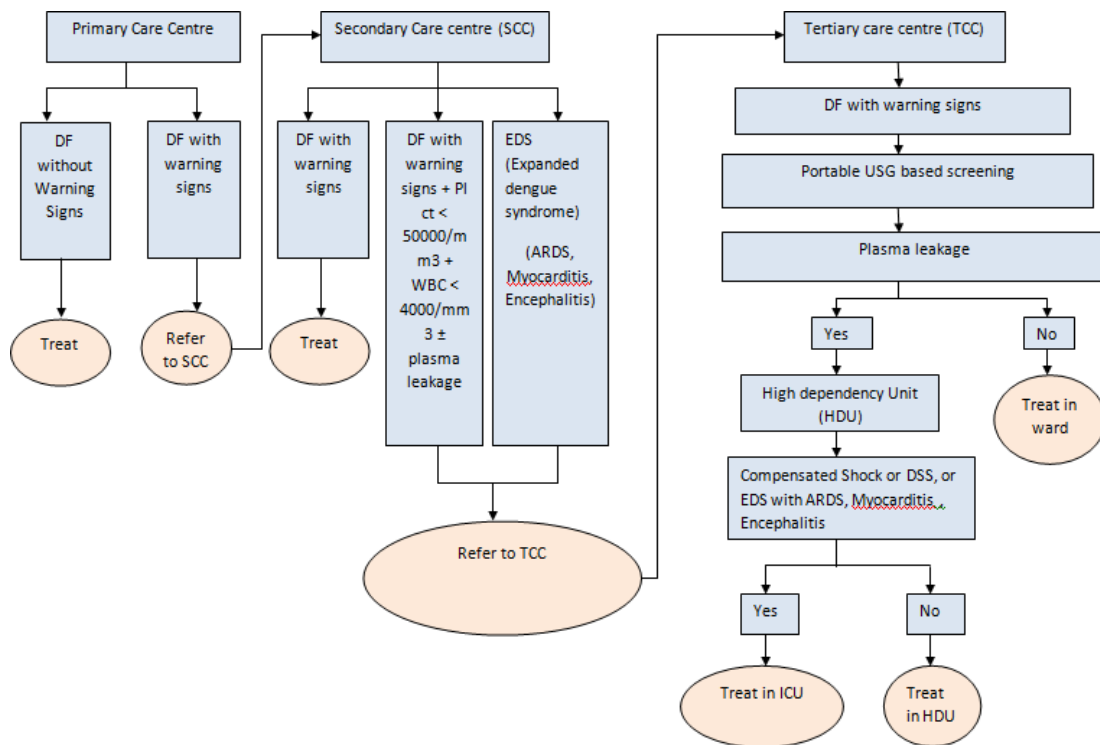
The following hospitalization criteria are based on a systematic review and meta-analysis conducted in 2019. A total of 217 studies were identified that included 237,191 patients with a dengue diagnosis in whom the relationship between different potential prognostic factors and progression to severe disease was evaluated.

Criteria for the hospitalization of dengue patients	
Patients with dengue and any of the following symptoms should be hospitalized:	
• Dengue with warning signs • Severe dengue • Intolerance to oral administration of fluids • Respiratory distress • Narrowed pulse pressure • Prolonged capillary perfusion (more than 2 seconds) • Hypotension • Acute renal failure • Pregnancy • Coagulopathy	
Additional considerations: Other factors that may determine the need to hospitalize dengue patients include the presence of comorbidities, very young and very old age, social and/or environmental conditions. The decision to admit patients with these conditions should be individualized.	

CRITERIA FOR DISCHARGE OF DENGUE PATIENTS

Criteria for discharge of dengue patients	
Clinical criteria	• Absence of fever for 48 hours without administration of antipyretics • Improvement of clinical status (general well-being, good appetite, normal hemodynamic status, normal or increased diuresis, no respiratory distress or evidence of bleeding)
Laboratory criteria	• Increasing trend for platelet count • Stable hematocrit, without intravenous fluids

RISK STRATIFICATION BASED REFERRAL PROTOCOL FOR DENGUE IN KERALA



- *All patients with warning signs, leucopenia and thrombocytopenia should ideally be screened using USG abdomen to look for early evidence of capillary leakage like Gall bladder wall edema.*

If USG is not available for early detection of capillary leakage, the following surrogate markers of capillary leak may be used.

1. Increase in hematocrit by more than 20% from baseline.
2. Ascites or pleural effusion by Chest X-ray or clinical examination.
3. Serum albumin less than 3.5gm/dl.
4. Intense persistent abdominal pain has a positive predictive value of 90% in diagnosing capillary leakage and 82% in diagnosing shock.
5. *Hepatomegaly may precede the development of plasma leakage.*

- *Those with evidence of plasma leakage should be shifted to a high dependency area, earmarked in the ward where protocolised fluid management algorithm should be strictly implemented.*
- *For this stratification, nurses and all doctors should be trained to maintain mandatory patient monitoring charts[Annexure].*
- *During large dengue outbreaks, medical /nursing students can also be trained to maintain patient monitoring charts.*
- Those patients with compensated shock with MODS, Dengue shock syndrome and expanded dengue syndrome in the form of myocarditis, ARDS or encephalitis should be shifted to Intensive care units.
- All doctors and nurses should be trained with regard to optimization of ABCSF [acidosis, bleeding, hypocalcemia, hypoglycemia and fluid status] in severe dengue.

References

1. National Guidelines for Clinical Management of Dengue Fever-Government of India 2015.
2. Guidelines for the Clinical Diagnosis and Treatment of Dengue, Chikungunya and Zika-PAHO 2022
3. Dengue Treatment Protocol SAT PICU 2019.
4. Clinical practice guidelines for Dengue/ Dengue Hemorrhagic fever management for Asian economic community – Thailand.
5. National guidelines for the management of Dengue fever and Dengue Haemorrhagic fever in children and adolescents. December 2010.Ministry of health Srilanka.
6. Handbook for clinical management of Dengue. WHO 2012.

ANNEXURES

Top sheet for Monitoring of Dengue/ Suspected Dengue Cases									
Hospital					Patient Regn. No.-				
Name		Age (y/m)		Sex	M/ F/ O	Ward		Bed no.	
Parameters on admission: Admission date -/...../2020									
Fever for	 days	Co-morbidity		Bleeding.	Y / N	Shock	Y / N	Tourniquet Test	Pos / Neg

Lab test for Dengue: NS1 ELISA/ IgM ELISA		
Result – Positive/ Negative	Date of sample:	Date of test:

Body weight (kg)		Height (cm)		Ideal body wt, if obese (kg)		Urine output: minm target for 24 hrs (body wt x 12)	 ml

Day-1 : Date-										Sig. of BIC/ MO/SR
	6 am	10 am	4 pm	10 pm			10 am	4 pm	10 pm	M
Pulse						Temp.				E
BP						RR				Sig. of SN
Urine (ml)					Total (ml)		Morn.	Eve.	Any other imp. finding	M
Ur. scanty	Y / N	Y / N	Y / N	Y / N		Pain abd.				E
	Morning sample		Evening sample			L. motion				N
PCV (Hct)						Vomiting				SrIC:
Platelet						Bleeding				SrIC:

Dengue ICU Monitoring Chart

Date	Name	age	wt
TIME			
PR			
RR			
CFT			
BP			
SpO2			
Liver			
GCS/ pupils			
IVF			
ml			
ml/kg			
mcg/kg/mt			
mcg/kg/mt			
mcg/kg/mt			



GOVERNMENT OF KERALA

Abstract

Health & Family Welfare Department - Technical Guidelines with regard to Management of Influenza Associated Encephalitis (IAE) - Orders issued.

HEALTH & FAMILY WELFARE (F) DEPARTMENT

G.O.(Rt)No.1653/2023/H&FWD Dated,Thiruvananthapuram, 10-07-2023

Read:- Letter No.DHS/12469/2023-PH1 dated 30.06.2023 from the Director of Health Services

ORDER

Influenza Associated Encephalitis [IAE] is a rare complication of influenza with high mortality rate. Influenza virus is endemic in Kerala and has been circulating in the state along with COVID 19 for the last 6 months. There has been a recent rise in H1N1 cases in the state.

In the above context, Government are pleased to issue the "*Technical Guidelines with regard to Management of Influenza Associated Encephalitis (IAE)*" incorporating the background, AES evaluation, AES treatment and practical approach to Encephalitis in the current scenario, as annexed to this order.

(By order of the Governor)
A P M MOHAMMED HANISH
PRINCIPAL SECRETARY

To:

The State Mission Director - National Health Mission,
Thiruvananthapuram.

The Director of Health Services, Thiruvananthapuram.

The Director of Medical Education, Thiruvananthapuram.

The Director, Public Health Lab, Thiruvananthapuram.

All District Medical Officers.

Principal Accountant General (A&E/Audit) Kerala,
Thiruvananthapuram.

Information & Public Relations (Web & New Media) Department.
Stock File/ Office Copy (to file F2/213/2023-HEALTH) .

Forwarded /By order

Signed by

Vilasini K V

Date: 10-07-2023 14:25:43
Section Officer

TECHNICAL GUIDELINES WITH REGARD TO MANAGEMENT OF INFLUENZA ASSOCIATED ENCEPHALITIS [IAE]

BACKGROUND

Influenza associated encephalitis [IAE] is a rare complication of influenza with high mortality rate. Most cases of IAE are due to Influenza A[H1N1, H3N2] infection where as Influenza B is responsible for 10 % of cases. A study on severe influenza-associated neurological disease [IAND] in Australian children [2008-2018] by Erin Donnelly et al showed that the annual incidence of IAND was 3.39 per million children ≤ 14 years. National surveillance data from Japan [2010-2015] indicate that the mean seasonal incidence of influenza-associated encephalopathy in Japanese children < 18 years was 2.83 per million.

Although the pathogenesis of IAE is not fully understood, the cytokine storm hypothesis is one of the postulated mechanisms which is widely accepted. According to this, influenza virus in certain individuals induces a dysregulated inflammatory response leading to increase in pro-inflammatory cytokines which crosses the blood-brain barrier and lead to encephalitis. In many case reports, in IAE time from onset of neurological symptoms to death was within 48 hours. The CSF profile of most patients with IAE lack significant abnormalities and only a small percentage of patients showed elevated protein and lymphocytes which shows that lack of CSF changes does not rule out IAE or other influenza associated neurological complications. Treatment options for IAE include oseltamivir and immunomodulatory strategies like high-dose corticosteroids, intravenous immunoglobulins and plasma exchange. None of these therapeutic modalities are supported by strong clinical evidence. In literature, role of steroid pulse therapy and immunoglobulin is still controversial. However, they are frequently used in IAE because an immune-mediated mechanism may be a major pathogenetic component. All children with acute neurological symptoms during the influenza season should be evaluated for influenza-associated neurological complications, including IAE.

When suspected encephalitis occurs with influenza, CSF pleocytosis is often absent and the virus is typically not detected in the CSF, even with molecular assays (with the notable exception of a 1998 study from Japan, where virus was detected in 5 of 7 cases). Lack of CSF pleocytosis suggests that nervous system injury may be related to inflammatory or immune-mediated response.

Possible explanations for failure to detect virus in the CSF in a given case are that

- 1) The neurologic manifestations are due to encephalopathy rather than encephalitis.
- 2) The virus has already cleared in the CSF by the time encephalitis becomes apparent.
- 3) The encephalitis is an autoimmune, rather than an infectious, process.

In acute necrotizing encephalitis CSF protein is high in the absence of CSF pleocytosis. Pre-mortem diagnosis requires magnetic resonance imaging (MRI). Bilateral symmetrical hyperintensities on T2 weighted MRI images typically involving the thalami but often with extensive involvement of other parts of the brain and even on occasion the spinal cord. Management remains controversial, but immune-modulatory agents are given.

GLOBAL SCENARIO

European Centre for Disease Prevention and Control (ECDC) in its weekly communicable disease update in March 2023 stated that Swedish health officials are investigating a cluster of severe influenza B infections in children and adolescents, some of whom had complications, including myocarditis and meningoencephalitis. In similar lines, there are multiple reports of influenza associated encephalitis [IAE] from across the world in 2022 and 2023. There are reports of children developing seizures and progressing to coma in a relatively short period and eventually succumbing to death due to brainstem involvement [Shi-Guang-Li et al] in IAE. In a recently published study from China [Ruimu Zhang et al], on influenza associated neurologic complications [INC] in children from an H3N2 outbreak in Shenzhen, China, 97 [19%] out of 513 children with H3N2 developed INC of which 18 [4%] developed IAE. Three developed acute necrotizing encephalitis of which two expired. Both deaths occurred within 72 hours of onset of fever. In that study, patients with encephalopathy/encephalitis had a higher rate of elevated alanine aminotransferase (28% vs 3% , $p=0.005$). It was noted that H3N2-related neurologic complications in children mainly occur early in the disease course and most patients are previously healthy.

KERALA SCENARIO

A study by Sankar Hariharan et al on the clinical characteristics of neurological manifestations in influenza-A [H1N1] in SAT hospital Thiruvananthapuram during 2019 was published in Indian Journal of Child Health. The study analyzed the clinical features of 16 patients with INC including children with developmental delay and other comorbidities which constituted 50% of the patients. The conclusions from the study were that neurological manifestations can occur in influenza A (H1N1) and the symptoms develop in majority during the first 5 days of illness. The most common symptom in this cohort was altered sensorium. Intensive care for multi-organ dysfunction is required in most cases and the cause-specific mortality is 18.75%.

Influenza virus is endemic in Kerala and has been circulating in the state along with COVID 19 for the last 6 months. Reports of sporadic IAE and influenza associated necrotizing encephalitis in children have been reported from the state over last 6 months. There has been a recent surge in IAE in the State over last 3 weeks which is apparently more than the background rate. Majority of cases of IAE developed rapidly within 24 - 48 hr of symptom onset requiring pediatric intensive care support. There has been report of at least 4 cases of acute encephalitis which progressed to brain stem herniation within 12 hours of first seizure. Few of these children also had transaminitis.

CSF viral panel was negative in all these cases, while Influenza A PCR was positive in nasopharyngeal swab of two fatal cases of encephalitis. In the background of catastrophic progression with negative CSF viral panel, an immunological insult causing severe brain edema also needs to be considered.

Surge of Autoimmune Encephalitis during COVID 19 Era

There are many published reports with regard to surge in autoimmune encephalitis during COVID 19 era. Autoimmune encephalitis is rare; the incidence rate from 2006 to 2015 was estimated to be 1.2 cases per 100,000 people. The prevalence of specific neural autoantibodies is as follows: myelin oligodendrocyte glycoprotein (MOG), 1.9/100,000; glutamic acid decarboxylase (GAD), 1.9/100,000; unclassified neural autoantibody, 1.4/100,000; leucine-rich glioma inactivated 1 (LGI1), 0.7/100,000; collapsin response mediator protein 5, 0.7/100,000; N-methyl-D-aspartate (NMDA) receptor, 0.6/100,000; antineuronal nuclear antibody type 2, 0.6/100,000; and glial fibrillary acidic protein α , 0.6/100,000. Voltage-gated potassium channel (VGKC) antibody incidence is not well established. In a case series highlighting the sharp rise in autoimmune encephalitis in COVID 19 era by Saffari et al, majority of patients with autoimmune encephalitis were mostly positive for glutamic acid decarboxylase (GAD) and/or voltage-gated potassium channel (VGKC) antibodies. In other study by Adina Stoian et al which is a systematic review on available literature on autoimmune encephalitis in COVID 19, the implicated auto-antibodies were anti-NMDAR antibodies [42.85%], anti-MOG antibodies [19.04%], anti-amphiphysin antibodies [9.5%] and one case with contactin-associated protein [Caspr2] anti-bodies.

More research is needed to determine if COVID-19 infection and/or vaccination cause cytokine production of varying degrees that result in a heightened inflammatory and immune response; this heightened response may be a “catalyst” to many other neuropathological processes by activating autoimmunity. Molecular mimicry is another postulated mechanism. This idea is in line with growing data on the enhanced immune response in the pathophysiology of neurological disorders after COVID-19.

Probable mechanism postulated to explain the apparent surge in IAE in Kerala over last 3 weeks

Almost all patients with IAE in Kerala during the current outbreak had high titres of SARS-CoV-2 IgG antibodies. Chance of patients primed with SARS-CoV-2 mounting a dysregulated immune response to a new viral trigger in the form of influenza has to be considered. Rapid neurological deterioration from symptom onset points to an inflammatory/autoimmune etiology rather than increased neurovirulence of the virus.

ROLE FOR EARLY ADMINISTRATION OF IMMUNOMODULATORS IN IAE

The mortality due to IAE in literature varies from 4% to 30%. In a study on IAE from Taiwan [Li-Wen Chen et al] from 2014-2017 involving 10 cases of IAE, the neurological symptoms developed rapidly within median 1 day after the first fever episode. All patients had altered consciousness. Seven patients (70%) had seizures at initial presentation, and six of them had status epilepticus. Anti-viral treatments were given in all patients, with median door-to-drug time 0.9 h for oseltamivir and 6.0 h for peramivir. Multi-modality treatments also included steroid pulse therapy, immunoglobulin treatment, and target temperature management, with 85.2% of the major treatments administered within 12 h after admission. Nine of the ten patients recovered without neurological sequelae. Only one patient had epilepsy requiring long-term anticonvulsants and concomitant cognitive decline. This is the only case series where case fatality due to IAE was nil. The Highlight of this study was the administration of antivirals and immunomodulators within 12 hours of admission. The case fatality rate in 2019 case series from SAT was 18.75% where patients were treated with only anti-viral drugs.

Diagnostic Criteria for Encephalitis and Encephalopathy of Presumed Infectious or Autoimmune Etiology

Major Criterion (required):

Patients presenting to medical attention with altered mental status (defined as decreased or altered level of consciousness, lethargy or personality change) lasting ≥ 24 h with no alternative cause identified.

Minor Criteria (2 required for possible encephalitis; ≥ 3 required for probable or confirmed^a encephalitis):

Documented fever $\geq 38^{\circ}\text{C}$ (100.4°F) within the 72 h before or after presentation^b

Generalized or partial seizures not fully attributable to a preexisting seizure disorder^c

New onset of focal neurologic findings

CSF WBC count $\geq 5/\text{cubic mm}$ ^d

Abnormality of brain parenchyma on neuroimaging suggestive of encephalitis that is either new from prior studies or appears acute in onset^e

Abnormality on electroencephalography that is consistent with encephalitis and not attributable to another cause.^f

AES evaluation and Treatment

Definition

Acute onset of **fever** and a change in **mental status** (including symptoms such as confusion, disorientation or coma,) AND/OR new onset of **seizures** (excluding simple febrile seizures).

Fever with in 72 hours of admission and any persistent altered sensorium lasting for more than 2 hours especially when associated with focal seizures or signs may be indicative of encephalitis. In patients presenting with febrile seizure specifically look for features of encephalitis specially when the child has personal history or history of contact with ILI.

History (important points to be noted)

- ILI symptoms (Influenza, mycoplasma, Nipah)
- GIT symptoms (Shigella, influenza, Dengue)
- Family member / contact with fever or ILI (influenza)
- Travel to endemic areas
- Rash, vesicles or past history of chicken pox
- Residence of child
- History of animal contact, dog bite, insect bite, tick bite.
- Recent vaccination (ADEM)
- Risk factor for immunodeficiency
- Markers of inborn errors of metabolism (past history of encephalopathy, consanguinity, SIDS in family etc)
- Premorbid neurological and developmental status
- H/O AES in neighborhood.

Examination (Cardinal points)

GCS score

Meningeal signs

Pupillary size, symmetry and reaction to light.

Dolls eye movement

Focal neurological deficit including cerebellar signs, limb weakness/involuntary movements

Rash, lymphadenopathy, Eschar.

Investigation

- **Basic Investigations**

Blood RE, RFT, LFT, S Electrolytes, Blood Sugar

Peripheral smear / RDT for malaria

Chest Xray

- **Lumbar Puncture:** If patient hemodynamically stable and there are no features of raised ICP lumbar puncture should be performed. In those with persistent altered sensorium or if suspicion of raised ICP is there, do an imaging.

- CSF study: Cytology, biochemistry, culture
- CSF neuroviral panel + Influenza

- **Neuroimaging:** In emergency situation, only CT scan may be possible. It will help detect brain edema, CNS tumors, IC bleed, trauma, brain abscess, subdural empyema etc. MRI may give etiological clues in some conditions like ADEM, HSV encephalitis etc.

Etiology	MRI findings
HSV Encephalitis	Medial temporal lobe, cingulate gyrus, and orbital surface of frontal lobes.
Japanese Encephalitis	B Thalami , substantia nigra, and basal ganglia
Varicella	Cerebellitis, multifocal cortical abnormality, vasculitis
Nipah	Focal subcortical and deep white matter and grey matter lesions; small hyperintense lesions in the white matter, cortex, pons and cerebral peduncles.
ADEM	Multifocal abnormalities in subcortical white matter; involvement of thalami, basal ganglia, and brainstem also may be seen
West Nile virus	Deep grey matter involvement, brainstem, white matter lesions and meningeal enhancement
Chandipura	Normal
Dengue	Symmetrical lesion basal ganglia, thalamus, brainstem, cerebellum.
Influenza	Splenium of corpus callosum, bilateral thalamus,

- **EEG**

- **Coinfections / cause**

Tropical Infection -Leptospirosis, scrub Typhus, Dengue IGM or PCR.

PCR zika, chikungunya, Dengue in first week of illness.

- **Nasopharyngeal swab** for respiratory and neuroviral panel
- **Serology for JE and West Nile** [IgM JE/West Nile from serum and CSF]-consider JE in case of encephalitis with extrapyramidal symptoms and West Nile in case of encephalitis with flaccid quadriplegia due to anterior horn cell involvement. As JE and west Nile are flaviviruses like dengue there is chance of serological cross reactivity and hence results should be interpreted carefully. In JE and west Nile viremia is low and transient and hence aPCR does not have negative predictive value

- Stool PCR for Enterovirus and **Shigella**.
- Stool for culture in diarrhea. In children with diarrhea and encephalitis, consider shigella PCR from stool sample.
- Inflammatory Panel
 - If CRP / ESR is high send 2nd line inflammatory markers (D Dimer, Ferritin, NT Pro BNP) to rule out MIS-C. SARS-CoV-2 IgG may be sent.
 - Autoimmune encephalitis work up should be considered especially in cases with indolent presentation, behavioral abnormality, dysautonomia.
 - 5 ml serum, Urine, 1 ml CSF and nasopharyngeal swab should be collected in all cases of suspected encephalitis without a diagnosis.
 - In AES cases without diagnosis, Nipah PCR must be sought.
 - In case of viral hemorrhagic fever with encephalopathy send PCR for KFD, Hanta, Crimean Congo haemorrhagic fever and Dengue.

Sample collection, storage and transportation guidelines		
Blood	For viral isolation collect within 5 days	
	For IgM collect blood after 5 days Take clotted blood. Separate serum after clot retraction.	If delay anticipated separate serum and store at -20C and transport on frozen Ice pack.
	Convalescent sample 10 -14 days after 1 st sample	
CSF Fluid	Cell count, bacteriology, biochemistry and virology -PCR,	If delay less than 24 hrs for PCR, viral culture store at 4C
	Serology IgM CSF for JE, Dengue, measles, Nipah, Chandipura	If greater delay store at -80C
Nasopharyngeal / throat/ vesicle swab	Dacron or nylon swab, put in viral transport medium	
Urine	10-20ml for culture, mumps PCR	Store at -20C
Stool	Clean container	Store at -20C
Brain Biopsy (post mortem , when feasible)	Sterile container.	
	Brain smear for viral antigen detection by immunofluorescent antibody staining, and for electron microscopy with negative staining.	

	Emulsified brain tissue is suitable for tissue culture and after proteinase K treatment for PCR.

- **Treatment of AES**

Stabilisation

- Maintain adequate airway, breathing, and circulation (the 'ABCs'):
- Clear airway, and assist breathing were needed.
- If in circulatory failure give NS 20ml/kg bolus
- Measure GRBS if less than 60mg/dl give IV 10% Dextrose 2-5 ml per kg IV.

Treat Seizure: Terminate the seizure and prevent recurrence.

- 1st line AED: IV Lorazepam 0.1mg per kg slow IV / IM Midazolam 0.2mg per kg / PR Diazepam 0.5mg/kg
- 2nd line AED: IV Phenytoin infusion 20mg/kg over 20 minutes (fosphenytoin if available can be given as 30mg/kg infusion over 10mts) or IV levetiracetam 60 mg per kg over 10mts
- Start maintenance dose 12 hours after loading dose.
- Take sample for investigations. Blood, serum, Urine, Np Swab, (CSF once stable).
- Diagnose and initiate therapy for life-threatening causes e.g. hypoglycaemia, Raised ICP, Meningitis.

Raised ICP (suspect in altered sensorium, anisocoria, lateral rectus palsy, decorticate or decerebrate posturing, abnormal breathing pattern, hypertension etc.)

- Keep head in mid position and head end elevation 15-30° to facilitate venous drainage
- 3% saline 5ml/kg (especially if BP low) or mannitol 2.5 to 5 ml per kg
- IF GCS <8 Intubate with Rapid Sequence Intubation raised ICP protocol
- Maintain euthermia, euglycemia, normal Blood pressure.
- Avoid hypoxia and Hypercarbia.
- Adequate sedo-analgesia

Empirical Treatment

- Inj. Ceftriaxone, Doxycycline, Inj. Acyclovir, Oseltamivir
- Child with ILI or AES to start oseltamivir early. 6mg per kg per dose (max. 150mg) BD.

A Practical Approach to Encephalitis in the current scenario

- All patients with suspected encephalitis should be subjected to influenza PCR from nasopharyngeal swab. As none of the commercially available CSF meningo-encephalitis panels include testing for influenza, nasopharyngeal swabs should be sent for influenza PCR.

- During influenza season IAE has occurred even in patients without symptoms of influenza and hence during influenza season influenza PCR should be done in all cases of suspected encephalitis.
- Till diagnosis is ascertained, empirical coverage for scrub typhus should be initiated as isolated encephalitic presentation for scrub typhus has been described.
- In diagnosed cases of IAE, encephalitis with ILI, or encephalitis in a child with contact with ILI early administration of immunomodulators [steroid pulse therapy/ immunoglobulins] must be considered in patients with features of raised ICT, GCS ≤ 8 or rapid neurological deterioration.
- As early use of immunomodulators in IAE is not supported by robust scientific evidence, the decision must be made based on opinion of institutional medical board comprising of pediatricians/physicians and neurologists. In such situations, the decision needs to be made on a case to case basis.

Child with AES		
Child with ILI	Contact with fever/ ILI	Only personal H/o fever
Oseltamivir	Oseltamivir	Oseltamivir
Child deteriorates: GCS < 8, E/O raised ICP, Rapid fall in GCS, Intractable seizures		
To consider cytokine storm		
May start pulse methylprednisolone 30mg/kg for 3 days*	May start pulse methylprednisolone 30mg/kg for 3 days *	To consider Immunomodulators [IVIG/Steroids]
Ensure Double dose Oseltamivir for 14 -21 days when steroid given if Influenza positive.		
*Steroids/immunomodulators should be initiated after expert opinion from institutional medical board comprising of Paediatrician/Physician and Neurologist.		

References

1. A Sharp Rise in Autoimmune Encephalitis in the COVID-19 Era: A Case Series
PardisSaffari , Raya Aliakbar , ArginHaritounian , Rafik Mughnetsyan , Catherine Do , Jamie Jacobs, Julia Hoffer , Robert Arieli , Antonio K. Liu
2. Case Definitions, Diagnostic Algorithms, and Priorities in Encephalitis: Consensus Statement of the International Encephalitis Consortium A. Venkatesan,A. R. Tunkel, K. C. Bloch, A. S. Lauring, J. Sejvar, A. Bitnun, J-P. Stahl, A. Mailles, M. Drebot,C. E. Rupprecht, J. Yoder, J. R.

Cope, M. R. Wilson, R. J. Whitley, J. Sullivan, J. Granerod, C. Jones, K. Eastwood, K. N. Ward, D. N. Durrheim, M. V. Solbrig, L. Guo-Dong, and C. A. Glaser; on behalf of the International Encephalitis Consortium; *Clinical Infectious Diseases* 2013;57(8):1114–28

3. Ruimu Zhang, Jialun Wen, Kai Wu, Sufang Lin, Kun Tan, Jiajia Bi, Jikui Deng, Influenza-associated neurologic complications in children from an H3N2 outbreak in Shenzhen, China during COVID-19 lockdown, *International Journal of Infectious Diseases* (2023), doi:<https://doi.org/10.1016/j.ijid.2023.05.064>

4. Influenza-associated neurological complications during 2014–2017 in Taiwan Li-Wen Chen [a](#), Chao-Ku Teng [a](#), Yi-Shan Tsai [b](#), Jieh-Neng Wang [a](#), Yi-Fang Tu [a](#), Ching-Fen Shen [a](#), Ching-Chuan Liu-2018 The Japanese Society of Child Neurology.

5. The Spectrum of Influenza in Children Gregory Hoy,¹ Guillermina Kuan,^{2,3} Roger López,^{2,4} Nery Sánchez,² Brenda López,² Sergio Ojeda,^{2,3} Hannah Maier,¹ Mayuri Patel,¹ Steph Wraith,¹ Alyssa Meyers,¹ Lora Campredon,¹ Angel Balmaseda,^{2,4} and Aubree Gordon¹,



GOVERNMENT OF KERALA

Abstract

Health & Family Welfare Department - Management of increasing Fever Cases - Kerala State Treatment Guidelines for ILI & SARI cases in the context of co-circulation of SARS-COV-2 and Influenza virus - Orders issued.

HEALTH & FAMILY WELFARE (F) DEPARTMENT

G.O.(Rt)No.1489/2023/H&FWD Dated,Thiruvananthapuram, 23-06-2023

Read Letter No. DHS/11700/2023-ADHS(PH) dated 20.06.2023
from the Director of Health Services

ORDER

In Kerala at present there is co-circulation of influenza and SARS-CoV-2 virus. In order to optimize targeted treatment for patients presentation with ILI symptoms, Government are pleased to issue the '*Kerala State Treatment Guidelines for influenza like illness [ILI] and severe acute respiratory infection [SARI] in the context of co-circulation of SARS-COV-2 and Influenza*' incorporating Clinical presentation of influenza vs Covid-19, Antiviral Treatment of Influenza, ABC guidelines for influenza, Kerala State ABC guidelines for Covid-19, Monitoring for red-flag signs in patients with ILI/ARI, Home Care of ILI Cat B1 and B2 patients etc; annexed to this order.

(By order of the Governor)
A P M MOHAMMED HANISH
PRINCIPAL SECRETARY

To:

The State Mission Director - National Health Mission,
Thiruvananthapuram.

The Managing Director, Kerala Medical Services Corporation Ltd,
Thiruvananthapuram.

The Director of Health Services, Thiruvananthapuram.

The Director of Medical Education, Thiruvananthapuram.

The Director, Public Health Lab, Thiruvananthapuram.

All District Medical Officers (Health)
All District Surveillance Officers
All District Programme Managers
Principal Accountant General (A&E/Audit) Kerala.
Information & Public Relations (Web & New Media) Department
Stock File/ Office Copy (to file F2/208/2023-HEALTH)

Forwarded /By order

Section Officer

Copy to:
Private Secretary to the Hon'ble Minister (H, W&CD)
PS to Principal Secretary (H&FWD)
PA to Secretary (H&FWD - ME)

KERALA STATE TREATMENT GUIDELINES FOR INFLUENZA LIKE ILLNESS (ILI) AND SEVERE ACUTE RESPIRATORY INFECTION (SARI) IN THE CONTEXT OF CO-CIRCULATION OF SARS-CoV-2 AND INFLUENZA

The WHO global influenza surveillance standards define the surveillance case definitions for influenza-like illness (ILI) and severe acute respiratory infections (SARI).

Key messages when using the case definitions:

- Influenza infection causes a clinical syndrome not easily distinguished from other respiratory infections.
- The case definitions for ILI and SARI are not necessarily intended to capture all cases but to describe trends over time.
- Using one common case definition globally will allow national health authorities to interpret their data in an international context.

ILI case definition

Acute respiratory infection with:

- measured fever of $\geq 38^{\circ}\text{C}$
- and cough;
- with onset within the last 10 days.

SARI case definition

Acute respiratory infection with:

- history of fever or measured fever of $\geq 38^{\circ}\text{C}$
- and cough;
- with onset within the last 10 days;
- and requires hospitalization

ARI

- *at least one of cough, sore throat, shortness of breath, runny nose with or without fever AND a clinician's judgement that the illness is due to an infection*

Table 2: Summary of performance characteristics of ILI, ARI and SARI case definitions for influenza and COVID-19

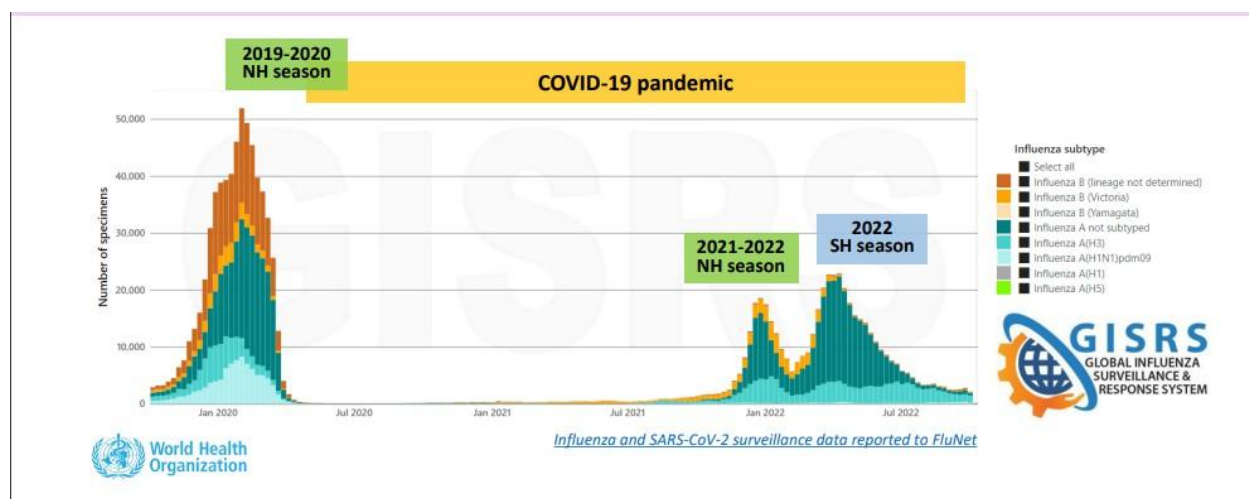
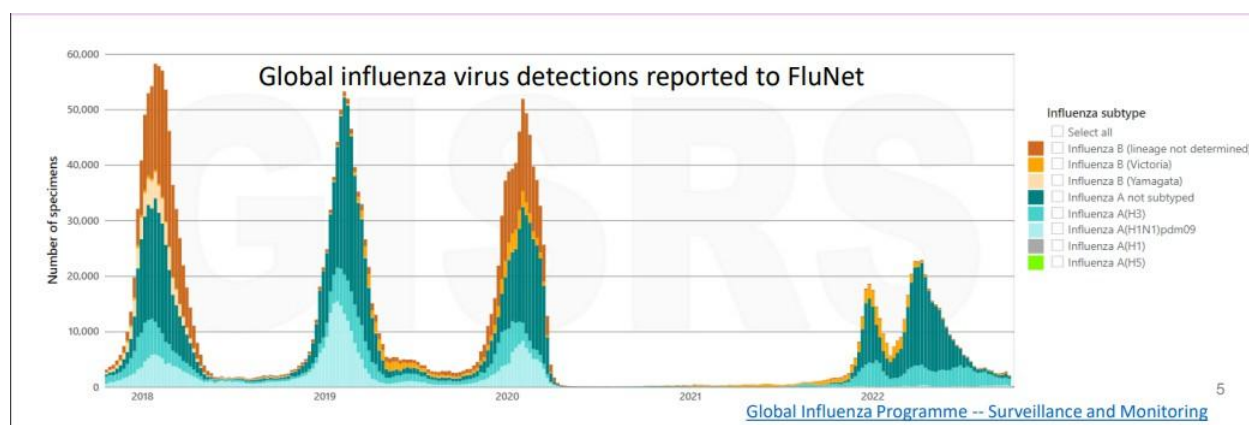
	Influenza		COVID-19 (2020 assessment)		COVID-19 (2021 assessment)	
	Sensitivity (%)	Specificity (%)	Sensitivity (%)	Specificity (%)	Sensitivity (%)	Specificity (%)
ILI	45 – 55%	85 – 95%	20 – 51%	60 – 90%	20 – 55%	38 – 90%
ARI	94%	27%	86%	23%	60 – 96%	10 – 45%
SARI	45 – 70%	45 – 70%	40 – 55%	33 – 60%	33 – 62%	31 – 77%

GISRS [Global Influenza Surveillance and Response system] uses existing WHO ILI and SARI case definitions in their sentinel surveillance for influenza and COVID-19. These case definitions are not intended to capture all cases of influenza or COVID-19. Regions with high testing capacities may continue to use the more sensitive but less specific ARI case definition.

GLOBAL SCENARIO

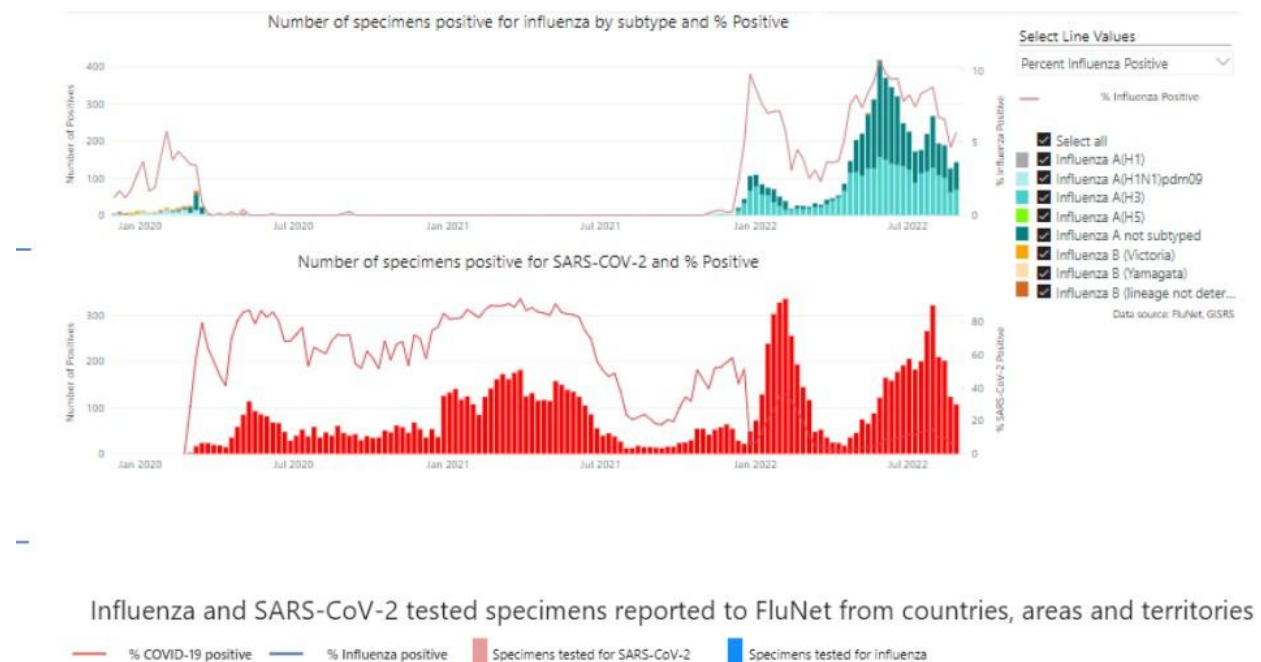
In the past decade, seasonal influenza has caused severe illness and death

- Before the current COVID 19 pandemic, seasonal influenza was estimated to have infected 1 billion people a year globally, caused severe disease in 3-5 million people, and 290,000- 650,000 influenza related respiratory deaths
- It burdens health systems in low and middle income countries which can least afford them
- Seasonal influenza also leads to high economic burden, due to direct and indirect medical costs, and loss of income and productivity due to illness

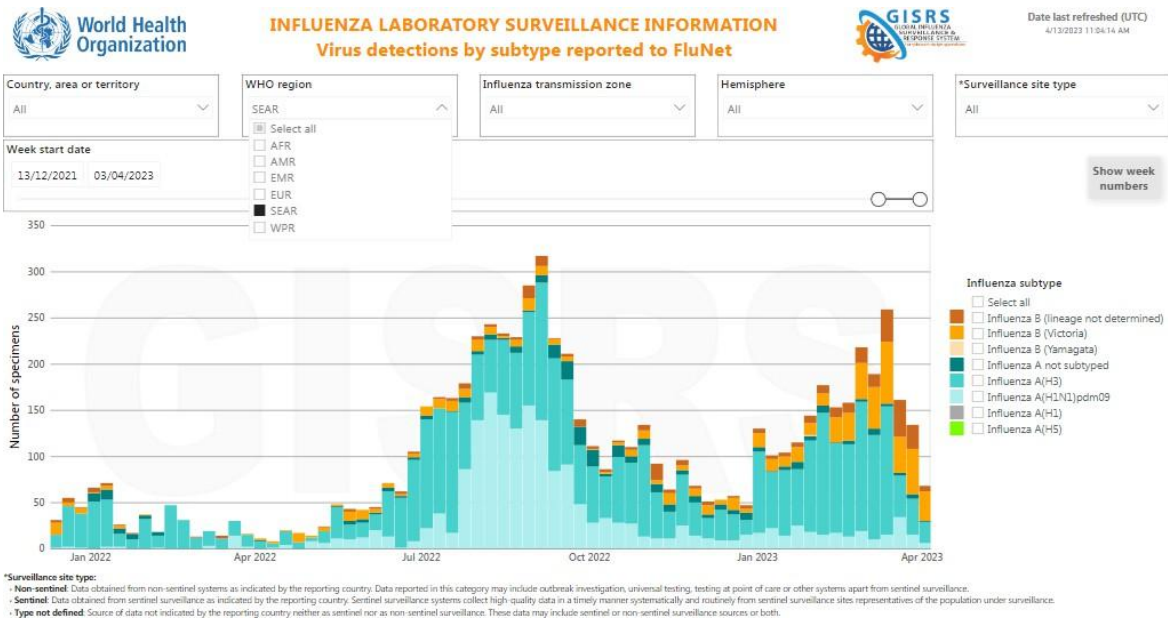


The above graphs clearly depicts the success of non-pharmacological interventions [NPI] like physical distancing, universal masking, hand hygiene, school closures and lockdowns in preventing respiratory infections like seasonal influenza during from middle of 2020 to 2021. However once NPI were lifted a surge in respiratory viral infections like seasonal influenza , RSV [respiratory syncytial virus] ,Adeno virus etc have been witnessed across the world during 2022. Influenza activity globally has reached pre-

COVID-19 levels or even higher and is now co-circulating with SARS-CoV-2 as depicted in the graph below. Based on clinical features alone it is very difficult to distinguish between Influenza and COVID-19.



National Influenza Centres (NICs) and other national influenza laboratories from 115 countries, areas or territories reported data to FluNet [WHO-GISRS] for the time period from 06 March 2023 to 19 March 2023*. The WHO GISRS laboratories tested more than 349 552 specimens during that time period. 46 911 were positive for influenza viruses, of which 34 346 (73.22%) were typed as influenza A and 12 565 (26.78%) as influenza B. Of the sub-typed influenza A viruses, 20 264 (70.30%) were influenza A(H1N1)pdm09 and 8560 (29.70%) were influenza A(H3N2). Of the characterized B viruses, 100% (1479) belonged to the B/Victoria lineage. But during the same time period in South East Asia Region, H3N2 is more prevalent than H1N1.



NATIONAL SCENARIO

Influenza data from ICMR network of laboratories

In India, an integrated surveillance of Influenza like Illness (ILI) and Severe Acute Respiratory Illness (SARI) for the detection of human influenza virus and SARS-COV-2 virus is ongoing through structured ILI/SARI surveillance network of 28 sites. The surveillance network is comprised of 27 DHR-ICMR's Virus Research & Diagnostic Laboratories and country's National Influenza Centre (WHO-NIC) housed at ICMR-National Institute of Virology Pune, also a WHO Collaborating Centre for Global Influenza Surveillance & Response System (GISRS).

During the period of first 9 weeks (January 2nd to March 5th) of 2023, the surveillance network has monitored the human influenza virus and SARS-CoV-2 infection in SARI and ILI cases. The influenza typing results are summarized below:

Week	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Influenza A H1N1pdm09	8	8	4	6	5	
Influenza A H3N2	46	57	44	42	47	
Influenza B Victoria	4	11	6	4	12	

It can be seen that Influenza H3N2 is the predominant sub-type among the samples testing positive for influenza, since the beginning of this year. Currently there is a surge in COVID 19 cases across the country driven by recombinant variant XBB.1.16.

THE KERALA SCENARIO

Just like in rest of India, in Kerala also at present there is co-circulation of Influenza virus and SARS-CoV-2 virus. Among Influenza infections, majority of cases are due to Influenza A especially H1N1 and H3N2. As the symptomatology of both Influenza and COVID 19 are the same, a practical algorithmic approach to differentiate between the two is essential at primary and secondary care level so as to optimize targeted treatment for patients presenting with ILI symptoms.

Clinical Presentation of Influenza Versus COVID-19

The signs and symptoms of uncomplicated, clinically mild influenza overlap with those of mild COVID-19. Ageusia and anosmia can occur with both diseases, but these symptoms are more common with COVID-19 than with influenza. Fever is not always present in patients with either disease, particularly in young infants, adults of advanced age, and patients who are immunosuppressed. Complications of influenza and COVID-19 can be similar, but the onset of influenza complications and severe disease typically occurs within a week of illness onset, whereas the onset of severe COVID-19 usually occurs in the second week of illness.

Because of the overlap in signs and symptoms, when SARS-CoV-2 and influenza viruses are co-circulating, diagnostic testing for both viruses is needed to distinguish between SARS-CoV-2 and influenza virus and to identify co-infection in people with an acute respiratory illness. Co-infection with influenza virus and SARS-CoV-2 has been described in case reports and case series, but it is uncommon. Observational studies have reported greater disease severity in patients with influenza virus and SARS-CoV-2 co-infection than in patients with SARS-CoV-2 infection alone

Diagnosis of Influenza and COVID-19 When Influenza Viruses and SARS-CoV-2 Are Co-circulating

- Only testing can distinguish between SARS-CoV-2 and influenza virus infections and identify SARS-CoV-2 and influenza virus co-infection.
- Influenza testing in addition to SARS-CoV-2 testing in outpatients with acute respiratory illness should be considered if the results will change the clinical management strategy for the patient. As per current ABC criteria for Influenza, testing is recommended only in cases of ILI with unusual clinical presentations, failure to respond to oseltamivir therapy and as part of cluster/outbreak investigation. So in patients with ILI, if COVID testing is

negative oseltamivir should be initiated if patients are categorized as B1/B2 or C based on clinical risk stratification.

- Testing for both viruses should be performed in all patients hospitalized following acute respiratory illness .
- Clinicians should consider testing patients for other pathogens based on the specific clinical circumstances. Additional testing for bacterial pathogens is important for patients with influenza and clinical signs that suggest bacterial superinfections, especially for patients who are immunocompromised or intubated.
- In all RAT negative ILI/SARI cases who require hospitalization, molecular diagnosis [PCR] for both SARS-CoV-2 and Influenza should be performed either simultaneously or sequentially.

Antiviral Treatment of Influenza When Influenza Viruses and SARS-CoV-2 Are Co-circulating

- Hospitalized patients who are suspected of having either influenza or COVID-19 should be started on empiric treatment for influenza with **oseltamivir** as soon as possible and without waiting for influenza test results .Oseltamivir has no activity against SARS-CoV-2.
- All pregnant ladies with ILI/ARI symptoms should be initiated on oseltamivir.
- Antiviral treatment for influenza can be stopped when influenza has been ruled out by the results of a nucleic acid detection assay. The assay should be performed on upper respiratory tract specimens for nonintubated patients and on both upper and lower respiratory tract specimens for intubated patients.
- When the result of an influenza nucleic acid detection assay from an upper respiratory tract specimen is negative in a patient who is receiving antiviral treatment for influenza:

In a patient who is not intubated: Antiviral treatment for influenza can be stopped.

In a patient who is intubated: Antiviral treatment for influenza should be continued, and if a lower respiratory tract specimen (e.g., endotracheal aspirate) can be safely obtained, it should be tested using an influenza nucleic acid detection assay. If the lower respiratory tract specimen is also negative, antiviral treatment for influenza can be stopped.

ABC Guidelines for Influenza

CATEGORIZATION OF PATIENTS				
Sr	Category	Chief Symptoms	Swab collection	Treatment
1	A	Mild fever(<38C), Cough, sore throat ,myalgia, headache, diarrhea / vomiting	Not recommended	No Oseltamivir, Symptomatic treatment, Review after 24 hours, Home isolation
2	B1	In addition to above symptoms Fever > 38C, severe sore throat.	Not recommended	Oseltamivir needed
	B2	CAT A Symptoms in those with comorbidities	Not recommended	Oseltamivir needed
3	C	In addition to above symptoms breathlessness, chest pain, haemoptysis, hypotension, bluish discoloration of nails and in children irritation and drowsiness	Recommended	Oseltamivir and hospitalization

KERALA STATE ABC GUIDELINES FOR COVID 19

A	Mild sore throat / cough / rhinitis /diarrhea/anosmia
B	Fever and/or severe sore throat / cough /diarrhea/anosmia OR Category-A with any one of • Lung/ heart / liver/ kidney / neurological disease/ Hypertension / haematological disorders/ uncontrolled diabetes/ cancer /HIV- AIDS/ Cardiovascular disease • On long term steroids /immunosuppressive drugs. • Pregnant woman • Age –more than 60 years
C	• Breathlessness, chest pain, drowsiness, fall in blood pressure, haemoptysis, cyanosis [red flag signs] • Children with ILI (influenza like illness) with <i>red flag signs</i> (Somnolence, high/persistent fever, inability to feed well, convulsions, dyspnoea /respiratory distress, etc) • Worsening of underlying chronic conditions

***Categorization should be reassessed every 24-48 hours for Category A & B**

COMBINED ABC APPROACH TO ILI/ARI AND SARI IN CONTEXT OF CO-CIRCULATION OF SARS-CoV-2 AND COVID 19

When SARS-CoV-2 and influenza are co-circulating, an algorithmic approach is needed to optimize the testing and treatment strategies .This can be achieved by fusing the existing ABC guidelines for Influenza and COVID 19.

COMBINED ABC APPROACH TO ILI IN THE CONTEXT OF CO-CIRCULATION OF SARS-CoV-2 AND INFLUENZA

Sr No	Category	Chief Symptoms	Swab Collection	Treatment
1	A	Mild Fever(<38 C), Cough, Throat irritation, bodyache, headache, rhinitis,diarrhoea / vomiting	Test for COVID 19	Monitor for red flag signs and reclassify every 24-48 hrs based on symptoms.Supportive treatment.
2	B B1	In addition to above symptoms Fever >38 C, severe sore throat, , cough.	Test for COVID 19	Monitor for red flag signs+ Oseltamivir if COVID test is negative.
	B2	Cat A in those with co-morbidities .	Test for COVID 19	.Monitor for red flag signs+ Oseltamivir if COVID test is negative. For highest risk category like cancer chemotherapy with B1 symptoms, early remdesivir may be considered if COVID positive.
3	C	In addition to above symptoms- breathlessness, Chest pain, hemoptysis, hypotension, bluish discoloration of nails, and in children irritation & drowsiness.	Test for COVID 19 and influenza.	Hospitalization.+oseltamivir.If COVID positive, treatment as per Kerala State COVID 19 treatment Guidelines.

MONITORING FOR REDFLAG SIGNS IN PATIENTS WITH ILI/ARI

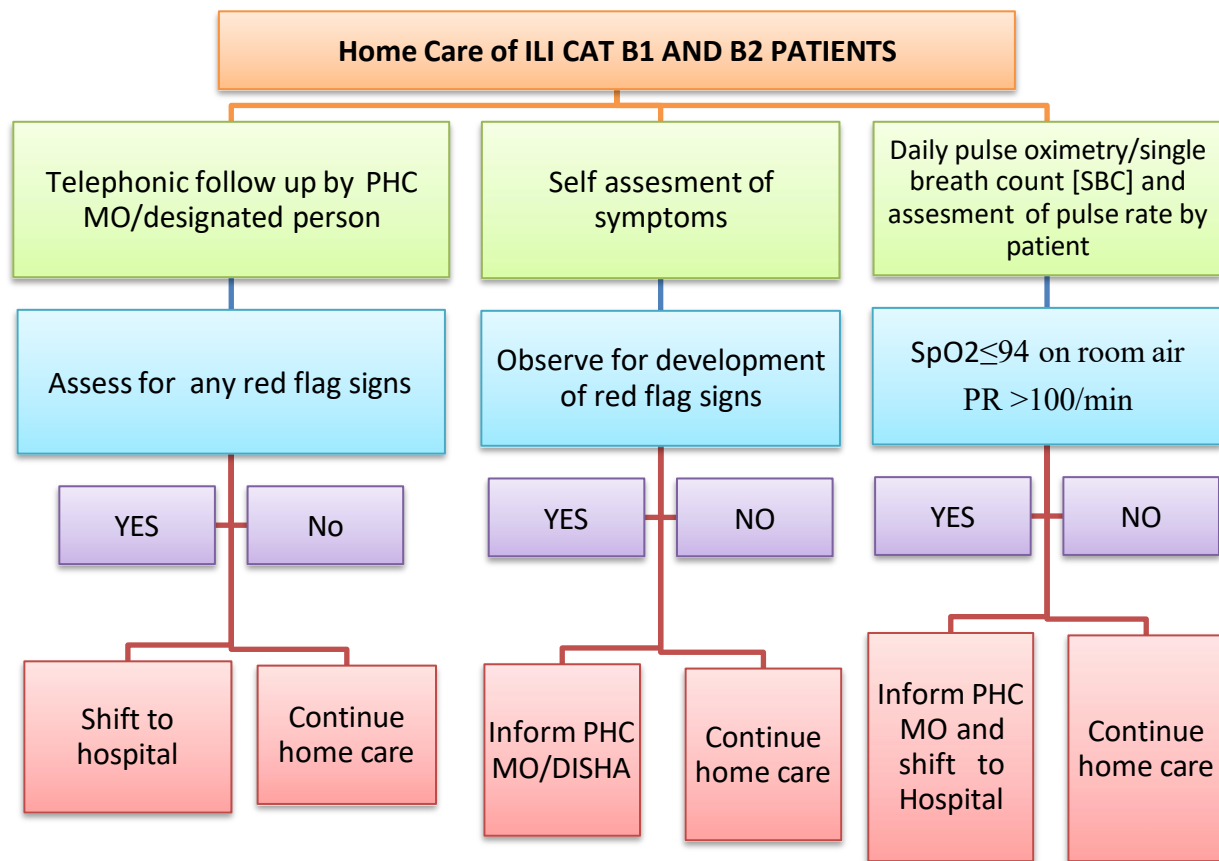
Redflag signs which indicate organ involvement and necessitate hospital admission are the same for all ILIs including COVID-19, Influenza, Respiratory syncytial virus, adenovirus etc. So any patient with ILI or fever should daily monitor for development of red flag signs and should contact health authorities in case of development of the same. In patients with co-morbidities, elderly and children below 5 yrs, monitoring for redflag signs is extremely important as they may rapidly deteriorate to severe disease.

- Breathlessness, chest pain, drowsiness, fall in blood pressure, haemoptysis, cyanosis [red flag signs]
- Children with ILI (influenza like illness) with *red flag signs* (Somnolence, high/persistent fever, inability to feed well, convulsions, dyspnoea /respiratory distress, etc)
- Worsening of underlying chronic conditions

Highest-risk individuals at risk of disease progression

- Body mass index (BMI) ≥ 35
- Chronic kidney disease stage with $eGFR < 60 \text{ ml/min}$ especially in those on MHD.
- Diabetes mellitus [$HbA1C > 10$] or diabetes with end organ damage.
- Chronic liver disease
- Immunocompromising conditions.
- Currently receiving immunosuppressive treatment
- Age ≥ 65 years
- Cardiovascular disease
- Chronic respiratory diseases.
- Malignancies on chemotherapy
 - Sick cell disease
 - Congenital or acquired heart disease
 - Neurodevelopmental disorders [eg cerebral palsy]
 - Unvaccinated with any co-morbidity

Those with high risk factors should wear masks always [mandatory] and should try to avoid 3C settings like closed spaces , congested spaces and close contact settings. Other family members of those with high risk factors also should wear masks always to minimize risk of transmission to vulnerable family members. Maintaining optimal glycemic status, controlling hypertension and body weight will help in preventing complications even if infected. Pre-cautionary dose of COVID19 vaccine and annual influenza vaccine can help prevent progression to severe disease in high risk groups.



- If pulse oximeter is not available, a single breath holding test [SBC] may be done. [Patient has to take a full but not too deep breath and hold it as long as possible]. Based on duration of breath holding, patients are categorized into
 - >25 seconds -Normal cardiopulmonary reserve
 - 15 to 25 seconds-Limited cardiopulmonary reserve
 - <15 seconds –Very poor cardiopulmonary reserve

CHECKLIST FOR SELF REPORTING FOR CAT A ILI PATIENTS

High Fever	Yes	No
Altered sensorium	Yes	No
Breathlessness	Yes	No
Chest pain	Yes	No
Drowsiness	Yes	No
Haemoptysis	Yes	No
Excessive fatiguability	Yes	No
Syncope	Yes	No
Palpitation	Yes	No

Pulse rate > 100/Min	Yes	No
SpO2 ≤ 94%	Yes	No
SBC < 25 sec	Yes	No

CHECK LIST FOR TELEPHONIC MONITORING AND SELF MONITORING OF CAT B1 AND B2 ILI PATIENTS

Fever	Yes	No
Altered sensorium	Yes	No
Breathlessness	Yes	No
Chest pain	Yes	No
Drowsiness	Yes	No
Haemoptysis	Yes	No
Excessive fatiguability	Yes	No
Syncope	Yes	No
Palpitation	Yes	No
Pulse rate > 100/Min	Yes	No
SpO2 ≤ 94%	Yes	No
SBC < 25 sec	Yes	No

GUIDELINES TO PREVENT DEVELOPMENT OF COVID-19 /INFLUENZA CLUSTERS INSIDE HOSPITALS

- All hospitalised patients with ILI/ARI/SARI symptoms should be tested for both COVID19 and Influenza. If RAT is negative, PCR must be performed.
- All COVID-19/Influenza positive patients must be isolated in designated areas.
- All patients, bystanders and health care workers must wear mask at all points of time. Health care workers should preferably use N95 masks.
- Bystander traffic should be minimised.
- Symptomatic bystanders should be tested .
- Health care workers with ILI/ARI/SARI should be tested.

References.

1. End-to –end integration of SARS-CoV-2 and Influenza sentinel surveillance-GISRS-Revised interim Guidance Jan 31,2022.
2. FluNet Summary-Global Influenza Programme WHO.
3. Influenza-COVID 19 Treatment Guidelines: NIH sep 30,2022



GOVERNMENT OF KERALA

Abstract

Health & Family Welfare Department - Management of Leptospirosis disease in the State - Treatment Guidelines For Leptospirosis - Orders issued.

HEALTH & FAMILY WELFARE (F) DEPARTMENT

G.O.(Rt)No.2108/2022/H&FWD Dated, Thiruvananthapuram, 25-08-2022

ORDER

Government are pleased to issue the "Treatment Guidelines for Leptospirosis" detailing the clinical management of the patients at the level of PHC/CHC/THQH/Tertiary Care Centres, as annexed to this order.

(By order of the Governor)
TINKU BISWAL
PRINCIPAL SECRETARY

To:

The State Mission Director -National Health Mission,
Thiruvananthapuram.

The Director of Health Services, Thiruvananthapuram.

The Director of Medical Education, Thiruvananthapuram.

The Managing Director, Kerala Medical Services Corporation Ltd

All District Medical Officers (Health)

All Superintendents of Government Medical Colleges

Principal Accountant General (A&E/Audit) Kerala.

Information & Public Relations (Web & New Media) Department

Stock File/ Office Copy to File F2/225/2022-HEALTH.

Forwarded /By order

Signed by Savitha M V

Date: 25-08-2022 10:58:38

Section Officer

TREATMENT GUIDELINES FOR LEPTOSPIROSIS

AT THE PHC/CHC LEVEL

All people coming from flood-affected areas or those who have visited flood-affected areas presenting with fever, headache, and myalgia with or without diarrhea to be immediately started on **Tab. DOXYCYCLINE 100 1-0-1 for 7 days**.

Those patients with red flag signs like tachypnoea [$>24/\text{min}$], tachycardia out of proportion to fever [IF $\text{HR} > 10$ for every 1°F rise in temp], hypotension [sys BP < 100 mm of Hg], cold clammy extremities, altered sensorium, jaundice, oliguria or hemorrhagic manifestations need to be referred to higher centers.

Those patients without red flag signs send back on Doxycycline, should be followed up daily and asked to report back in case of red flag signs.

All pregnant women and those with co-morbidities like uncontrolled diabetes mellitus, cirrhosis, chronic kidney disease, coronary artery disease, COPD, HIV, malignancies, hematologic disorders, and those on steroids or other immunosuppressants must be referred to a higher center.

AT THE THQ LEVEL

Inj. Crystalline Penicillin is to be started immediately at a dosage of 20 L Q6H intravenous after a test dose. [For a child 3 to 4 lakh units/kg/day divided into 6 hours intravenously]. The first dose of Inj. CP is to be given as a supervised dose with the patient in the supine position [ie with emergency drugs, cannula, AEFI kit etc in place]

In case of a past history of penicillin anaphylaxis or in case of a positive skin test, the alternative is Inj Ceftriaxone 1 gm IV BD, after negative skin test [for a child, Inj Ceftriaxone 100 mg/kg/day divided into 2 doses, at 12 hourly intervals].

In the case of positive skin test to ceftriaxone, alternatives are IV Azithromycin 500 mg for 5 days or IV Doxycycline 200 mg IV loading dose and 100 mg IV twice daily for 7 days.

From THQH, patients should be referred to higher centers in case of

1. Hypotension [$\text{SBP} < 100$ mg/Hg] with a disproportionate increase in heart rate [$\text{HR} > 10$ FOR every 1°F rise in temperature], cold clammy extremities, diaphoresis—consider Myocarditis and refer.

2. Tachypnoea [$>30/\text{min}$], hypoxemia [$\text{spo}_2 < 90\%$ despite continuous oxygen], chest signs—consider ARDS and refer.
3. Progressively deepening jaundice or if INR >1.5 —refer.
4. Oliguria not responding to fluid challenge [1 L NS to be infused over 30 min provided there is no clinical evidence of myocarditis]—consider AKI and refer.
5. Hemoptysis, melena, hematemesis, menorrhagia, spontaneous gum bleed—need to be referred.
6. Alteration of sensorium persisting after correction of electrolytes and after ruling out CNS hemorrhage –to be referred.

INVESTIGATIONS TO BE DONE AT CHC/THQH LEVEL.

1. Hb, TC, DC, ESR, PLC.
2. RBS, LFT, RFT, Na^+ , K^+
3. In case of oliguria and severe myalgia—send CPK.
4. Routine Urine Examination
5. In case of worsening jaundice—send PT/INR.
6. In case of hemorrhagic manifestations—PLC, Peripheral smear, PT/INR, APTT.
7. Thrombocytopenia with altered sensorium—CT BRAIN PLAIN.
8. In case of hypotension with relative tachycardia — Troponins [TROP T, TROP I in case of kidney injury].
9. Severe epigastric pain — send Lipase to rule out pancreatitis.
10. Rule out other Tropical fever syndromes [Dengue, malaria, scrub typhus, Enteric fever, H1N1].

[In the post-flood scenario, treatment of leptospirosis has to be based on clinical features alone. Lab testing is only for surveillance purposes. Moreover, Lepto ELISA/card test will become positive only after 7 days.]

LEPTOSPIROSIS TREATMENT GUIDELINES FOR TERTIARY CARE CENTERS

1. Any patient coming to the OPD/Emergency department with acute febrile illness with myalgia, headache $\pm$ diarrhea especially in patients from flood-affected area or those who have visited flood-affected area should be provisionally diagnosed as possible leptospirosis and should be started empirically on Tab DOXYCYCLINE 100 mg 1-0-1 for 7days.

2. If there are red flag signs or symptoms like tachypnoea [$>24/\text{min}$], tachycardia disproportionate to fever [rise in HR >10 for 1°F rise in temperature], hypotension [SBP <100 mm of Hg], jaundice, alteration of the sensorium, oliguria, hemorrhagic manifestation –patients should be admitted and initiated on INJ CRYSTALLINE PENICILLIN 20 L Q6H FOR 7DAYS after negative skin test.

RED FLAG SIGNS

1	Tachypnoea [$>24/\text{min}$]
2	Tachycardia disproportionate to fever [rise in HR >10 for 1°F rise in temperature]
3	Hypotension [SBP <100 mm of Hg]
4	Jaundice
5	Alteration of sensorium
6	Oliguria
7	Hemorrhagic manifestation

3. In case of previous history of anaphylaxis to Inj Crystalline penicillin or in case of positive skin test, Inj Ceftriaxone 1 gm IV twice daily for 7 days may be used instead of Crystalline penicillin after skin test.
4. In case of positive skin test to Inj Ceftriaxone, intravenous doxycycline or IV azithromycin [500 mg IV daily for 5 days] can be used as an alternative.

ONCE ADMITTED

Focused investigations should be done to rule out

1. Myocarditis
2. ARDS
3. Hepatitis
4. Acute kidney Injury.
5. Pancreatitis
6. Myositis/Rhabdomyolysis.

7. Aseptic Meningitis.

8. Acalculous cholecystitis.

9. DIC

Investigations to rule out other tropical fever syndromes must be sent [Dengue, malaria, enteric fever, scrub typhus, H1N1].

Two sets of blood cultures must be sent to rule out bacterial sepsis.

Patients with myocarditis, ARDS/Severe pulmonary hemorrhage syndrome [pulmonary leptospirosis] should ideally be admitted to an ICU/HDU.

[In the post-flood scenario, treatment of leptospirosis has to be based on clinical features alone. Lab testing is only for surveillance purposes. Moreover, Lepto ELISA/card test will become positive only after 7 days.]

CRITICAL CARE

FLUID RESUSCITATION:

IVC ASSESSMENT FOR FLUID RESPONSIVENESS

In spontaneously breathing patients, the following measurements suggest fluid responsiveness

- a. IVC measuring <2 cm in diameter coupled with IVC collapse >50% with each breath or
- b. IVC collapsibility >12%

In mechanically ventilated patients, IVC distensibility index >18% suggests fluid responsiveness.

COAGULOPATHY, THROMBOCYTOPENIA

Coagulopathy and thrombocytopenia need to be corrected in case of spontaneous bleeding manifestations.

PULMONARY:

Presentation vary from subtle clinical features to deadly Alveolar hemorrhage and ARDS.

Pulmonary complications are more in patients with Thrombocytopenia, hemoptysis, anuria, those requiring Renal replacement therapy, diabetes and those having shortness of breath.

Use NIV only for mild ARDS [P/F 200-300].

Invasive ventilation for P/F < 200 or low GCS

Intubation and mechanical ventilation.

Volume control or pressure control lung protective ventilation—

Plateau pressure <30 cm H₂O. Start with tidal volume of 6ml per Kg—decrease to 4 ml/kg if plateau pressure is >30 cm H₂O.

Set FIO₂ to keep spO₂ 88 to 94.

Adjust respiratory rate according to PaCO₂ [max RR 35].

PEEP: According to ARDS net protocol or adjust to a PEEP with good oxygenation and no adverse hemodynamic effects.

Ventilatory management of diffuse alveolar hemorrhage in Leptospirosis.

1. Identify acute respiratory failure early, Consider Pulse dose of Methyl prednisolone.
2. Clinical: Tachypnoea, use of accessory muscles, intercostals indrawing, diaphoresis
ABG: PaO₂ <60 with FiO₂>0.5: CO₂ retention with respiratory acidosis.
3. Manage as ARDS
4. Care of endotracheal tube— frequent suctioning to clear hemorrhage (preferably with closed suction.)
5. Consider muscle relaxants if P_{plat} >30 cm of H₂O in spite of optimal ventilator settings.
6. Prone ventilation—consider prone ventilation if P/F <150 in spite of optimal ventilator settings.
7. Permissive hypercapnia with pH> 7.2 .

STEROIDS IN LEPTOSPIROSIS

For severe Leptospirosis with multiorgan failure Pulse steroids with Inj Methylprednisolone 1gm IV stat.

ACUTE KIDNEY INJURY

Pre-renal AKI should be corrected by Normal saline, if there is no clinical/echo/biochemical evidence of myocarditis.

In order to shorten door- to dialysis time, early Nephrology consultation should be sought.

Definition and classification of Acute Kidney Injury (AKI)

- AKI is defined as any of the following
 - Increase in Serum Creatinine by 0.3 mg/dl within 48 hours.
 - Increase in S. Cr to X 1.5 times baseline, which is known or presumed to have occurred within the prior 7 days.
 - Urine volume <0.5 ml/kg/h for 6 hours.

Hypercatabolic AKI is defined as acute renal shut down with an increase of urea >60mg/dL/day and creatinine >1 mg/dL/day with one of the following: an increase in serum potassium >1 mEq/L/day from baseline, serum uric acid >15 mg/dL, serum phosphate >8 to 10 mg/dL and a decrease of serum bicarbonate > 2 mEq/L/day from baseline.

Management of AKI

General considerations

- Evaluate patients with AKI promptly to determine the cause and correct them, with special attention to reversible causes.
- Pre-renal factors have to be identified and corrected. In case of hypotension, consider fluid resuscitation after ruling out myocarditis [relative tachycardia/bradycardia, elevated JVP, basal crepitations, muffled heart sounds, ECG-ST-T changes, preferably ECHO].
- If there is no hyperkalemia, Ringer Lactate is preferred over normal saline for fluid resuscitation. If Potassium >5.0 meq/L or in case of liver failure, Normal saline is to be preferred over Ringer Lactate.
- Fruits, fruit juices, tender coconut water and ORS to be avoided if serum potassium is >5.0 meq/L or in case of oliguria [if urine output is less than 30 ml/kg/hr for 6 hours or <400 ml/day]
- “Salted kanji water” is to be used if there is no evidence of hypervolemia.
- Oral /intravenous bicarbonate supplementation is to be considered if there is no evidence of hypervolemia.
- In the case of rhabdomyolysis [CPK > 3000], bicarbonate infusion is to be considered.
- If there is no evidence of fluid overload or myocarditis, Fluid challenge with 500 ml NS followed by Inj Frusemide 40 mg IV may be tried once.

Fluid challenge should not be repeated.

- **Do not** use diuretics to prevent AKI or to treat AKI, except in the management of volume overload.
- **Do not** use low-dose dopamine to prevent or treat AKI.
- Avoid nephrotoxic medications in patients with AKI.
- Withhold ACE Inhibitors and ARBs temporarily if patient is already on these drugs.

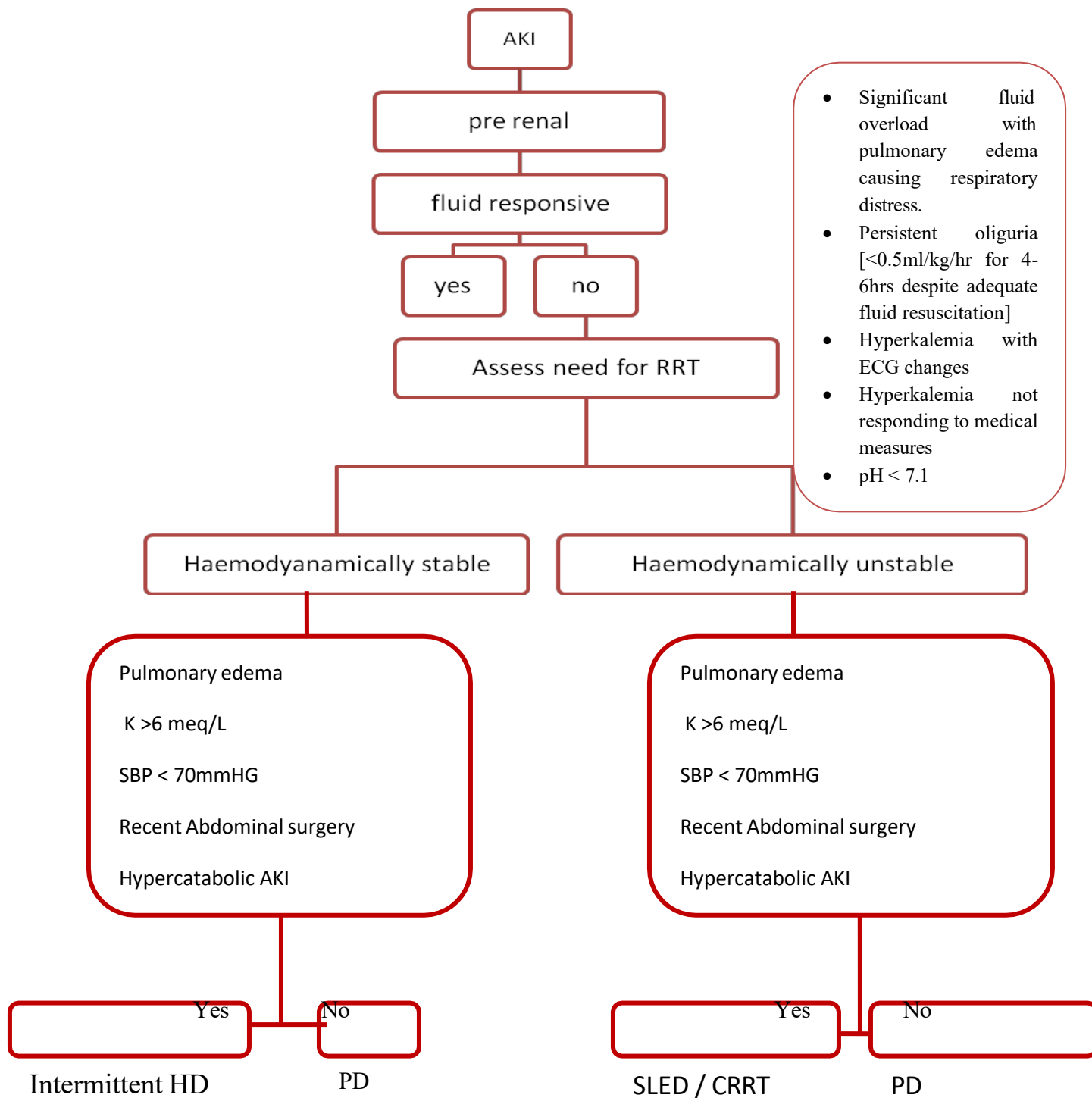
Renal Replacement Therapy

Initiate RRT emergently when life-threatening changes in fluid, electrolyte, and acid-base balance exist. Aim must be to minimize time to dialysis as far as possible.

Indications for initiation of RRT are

1. Significant fluid overload with pulmonary edema causing respiratory distress.
 2. Persistent oliguria [<0.5 ml/kg/hr for 4-6hrs despite adequate fluid resuscitation]
 3. Hyperkalemia with ECG changes
 4. Hyperkalemia not responding to medical measures
 5. $\text{pH} < 7.1$
- The decision to discontinue RRT is taken when kidney function has recovered to the point that it is adequate to meet the patient's needs.
 - Do not use diuretics to enhance kidney function recovery, or to reduce the duration or frequency of RRT.

Antibiotic	Dose for normal renal function	Dose for renal failure Estimated creatinine clearance ml/min		
		50-90	10-50	<10
Amoxicillin	500mg Q6h or 1gm Q8h	Q8h	Q12h	Q24h
Ampicillin	0.5-1gm Q8h	Q6h	Q6-12h	Q12-24h
Azithromycin dehydrate	500mg OD	No dose adjustment		
Cefotaxime	1gm Q6h	Q 8-12h	Q12-24	Q24h
Ceftriaxone	1gm Q12h	No dose adjustment		
Doxycycline	100mg BID	No dose adjustment		
Penicillin G	2 MU Q6h	No dose adjustment		



- The following **advantages of peritoneal dialysis** should be considered while deciding on the modality of RRT
 - Acute PD using semi rigid acute PD catheter is comparatively cheaper when compared to other modalities of RRT used in AKI.
 - PD does not need a vascular access hence advantageous in patients having difficulty in securing a vascular access.
 - PD can be easily performed in remote areas where hemodialysis machine and RO water system is not available.
 - Nursing staff with minimal training can initiate and continue PD.
 - PD is useful in critically ill patients with hypotension (SBP>70mmHG) as it is a hemodynamically friendly procedure.
 - Patients on mechanical ventilation can be considered for PD if hemodialysis machine or CRRT machine is not available in the ICU as shifting a mechanically ventilated patient to a dialysis unit is risky.
 - PD is useful in patients with increased bleeding risk as there is no requirement for anticoagulation.
- PD is **not preferred** when there is life-threatening pulmonary edema or severe hyperkalemia.
- PD is **less preferred** in patients with hypercatabolic AKI.
- CRRT or PD is preferred over intermittent HD, for AKI patients with acute brain injury or other causes of increased intracranial pressure or generalized brain edema.
- When choosing a vein for insertion of a dialysis catheter in patients with AKI, consider these preferences- First choice: right jugular vein; Second choice: femoral vein; Third choice: left jugular vein; Last choice: subclavian vein with preference for the dominant side.
- Use ultrasound guidance for dialysis catheter insertion when available.
- Obtain a chest radiograph promptly after placement and before the first use of an internal jugular or subclavian dialysis catheter. Chest radiograph may be delayed in emergency situations if vein cannulation was easy, and good flow was present in both limbs of the catheter.

Prevention of AKI

- Identify patients at high risk for AKI.
- In a patient with dehydration, withhold ACE Inhibitors and ARBs temporarily if patient is already on these drugs. All patients on ACE Inhibitors and ARBs should be advised to temporarily stop these drugs at the time of significant vomiting or diarrhoea.
- Avoid prescribing NSAIDs in patients who are on ACE Inhibitors or ARBs.
- Avoid prescribing NSAIDs in patients who are fluid depleted.

Dialysis in Special situations

- Thrombocytopenia $< 50,000/\text{mm}^3$ with bleeding tendency, consider low dose heparin, heparin free or Peritoneal dialysis.
- If INR > 1.5 , consider low dose heparin, heparin free or peritoneal dialysis.
- Pancreatitis is not a contraindication to peritoneal dialysis

Protocol for bicarbonate infusion in rhabdomyolysis

- To be given for Serum CPK > 3000 U/L or increasing values
- Seventy-five ml of soda bicarbonate to be added to 500ml 5% dextrose and given at 200ml/hr to maintain urine pH above 6.5
- Bicarbonate infusion should be given only if serum pH < 7.5 , S bicarbonate $< 30\text{meq/L}$, hypocalcemia is absent, patient has adequate urine output and there is no evidence of LV dysfunction
- If a diuresis is established, bicarbonate therapy may be discontinued once CPK falls below 5000 U/L or if symptomatic fluid overload develops

DIRECTIVE FOR DOXYCYCLINE PROPHYLAXIS IN FLOOD AFFECTED AREAS IN KERALA

CATEGORY	EXPOSURE	RISK	ACTION
0	<u>No contact</u> * with flood waters, muddy, polluted water or dead/sick animals.	No risk	No need for doxycycline
1	<u>One time contact</u> * (with intact skin) with flood waters, muddy, polluted water or dead/sick animals	Low risk	Doxycycline [^] 200mg (100 mg x 2 tablets) once weekly for 2 consecutive weeks [#] .
2	<u>Continuing contact</u> * (with intact skin) with flood waters, muddy, polluted water or dead/sick animals. (eg: rescue/relief personnel, local residents with similar contact)	Moderate risk	Doxycycline 200mg once a week as long as the exposure continues.
3	<u>Any contact</u> * with flood waters/soil/mud when there are wounds/cuts/ open lesions of the skin or accidental ingestion of contaminated water.	High risk	Doxycycline 100 mg twice daily for 5 days. Ensure weekly prophylaxis as long as exposure continues ^{**} .

*Contact- walking, swimming, bathing, washing in flood waters, mud, polluted water, soil or contact with sick or dead animals, cleaning flood affected materials like furniture, utensils, floor, walls, personal belongings etc

[^]Doxycycline should be consumed with a full glass of safe drinking water after food.

[#] Considering the possibility of ongoing exposure. Directives may be revised as needed based on reassessment of the situation.

^{**}As far as possible reduce the risk of exposure by using personal protective equipment like rubber boots, heavy duty/utility gloves.

SPECIAL SITUATIONS:

Category	Chemoprophylaxis	Remarks
Pregnant and Lactating Mothers	Azithromycin 500mg once a week	Doxycycline is Contraindicated in pregnancy and lactation
Children 2-12 yrs	Doxycycline* 4mg/kg body weight once weekly.	-
Children <2 yrs	Azithromycin 10mg/kg body weight, once weekly.	-

NB: There is no upper age limit for consumption of doxycycline.

No dose modification is required for doxycycline in patients with kidney disease.

*Doxycycline can be used for children of all age groups as it binds less readily to calcium, teeth staining is not seen with duration of treatment < 21 days.



GOVERNMENT OF KERALA

Abstract

**Health & Family Welfare Department - Management of Monkeypox -
'State Guidelines on Monkeypox Disease' - Revised - Orders issued.**

HEALTH & FAMILY WELFARE (F) DEPARTMENT

**G.O.(Rt)No.2496/2024/H&FWD Dated,Thiruvananthapuram, 21-10-
2024**

Read:- 1. G.O.(Rt) No. 1947/2022/H&FWD dated 07.08.2022

2. G.O.(Rt) No. 1872/2022/H&FWD dated 01.08.2022

3. G.O.(Rt) No. 2248/2022/H&FWD dated.16.09.2022

ORDER

As per the Government Order read as 1st paper above, 'State Guidelines on Monkeypox Disease' has been issued, incorporating management, contact tracing, surveillance strategies, and preventive measures in response to the multi-country Monkeypox outbreak.

(2) Consequent to the announcement of current outbreak of Monkeypox as Public Health Emergency of International Concern (PHEIC) by the World Health Organization and new Virus strain are spreading rapidly, as recommended by State Medical Board, Government are pleased to issue the '*Revised Kerala State Guidelines on Monkeypox Disease*', as annexed to this order.

(By order of the Governor)

Dr. Rajan Namdev Khobragade I A S
ADDITIONAL CHIEF SECRETARY

To:

**The State Mission Director -National Health Mission,
Thiruvananthapuram.**

The Managing Director, Kerala Medical Services Corporation Ltd.

The Director of Health Services, Thiruvananthapuram.

The Director of Medical Education, Thiruvananthapuram.

The Director, Public Health Lab

All District Collectors.

All District Surveillance Officers.

All District Medical Officers (Health).

Principal Accountant General (A&E/Audit) Kerala.

Information & Public Relations (Web & New Media) Department.

Stock File/ Office Copy (to file F2/274/2024-HEALTH-Part(1)).

Forwarded /By order

Signed by

Vilasini K V

Section Officer
Date: 22-10-2024 16:34:25

Copy to:-

Private Secretary to the Hon'ble Minister (Health)

Officer on Special Duty to Chief Secretary

PA to Additional Chief Secretary (Health)

KERALA STATE REVISED GUIDELINES ON DIAGNOSIS, ISOLATION AND TREATMENT OF PATIENTS WITH MPOX INFECTION – OCT 2024

Background

Mpox (formerly known as monkeypox) is an infectious disease caused by the monkeypox virus (MPXV) which is primarily characterized by rash and fever and may lead to severe disease. MPXV is part of the same family of viruses as the variola virus, which causes smallpox. Mpox symptoms are similar to smallpox symptoms but milder and are rarely fatal. Monkeypox is not related to chickenpox.

Mpox was first discovered in 1958 in colonies of monkeys kept for research, hence the name 'Monkeypox'. Despite being named "monkeypox," the source of the disease remains unknown. However, African rodents and non-human primates (like monkeys) might harbour the virus and infect people. The first human case of Mpox was reported in the Democratic Republic of the Congo (DRC) in 1970.

MPXV primarily occurs in Central and West Africa. The first Mpox outbreak outside Africa was reported in the United States of America in 2003. It was linked to contact with infected pet prairie dogs housed with Gambian pouched rats and dormice imported into the country from Ghana. Before the 2022 outbreak, human cases of Mpox had been reported in several central and western African countries. Previously, almost all Mpox cases in people outside of Africa were linked to international travel to countries where the disease commonly occurs or through imported animals. With the eradication of smallpox in 1980 and the subsequent cessation of smallpox vaccination, Monkeypox has emerged as the most important Orthopox virus for public health.

Molecular Epidemiology of MPXV

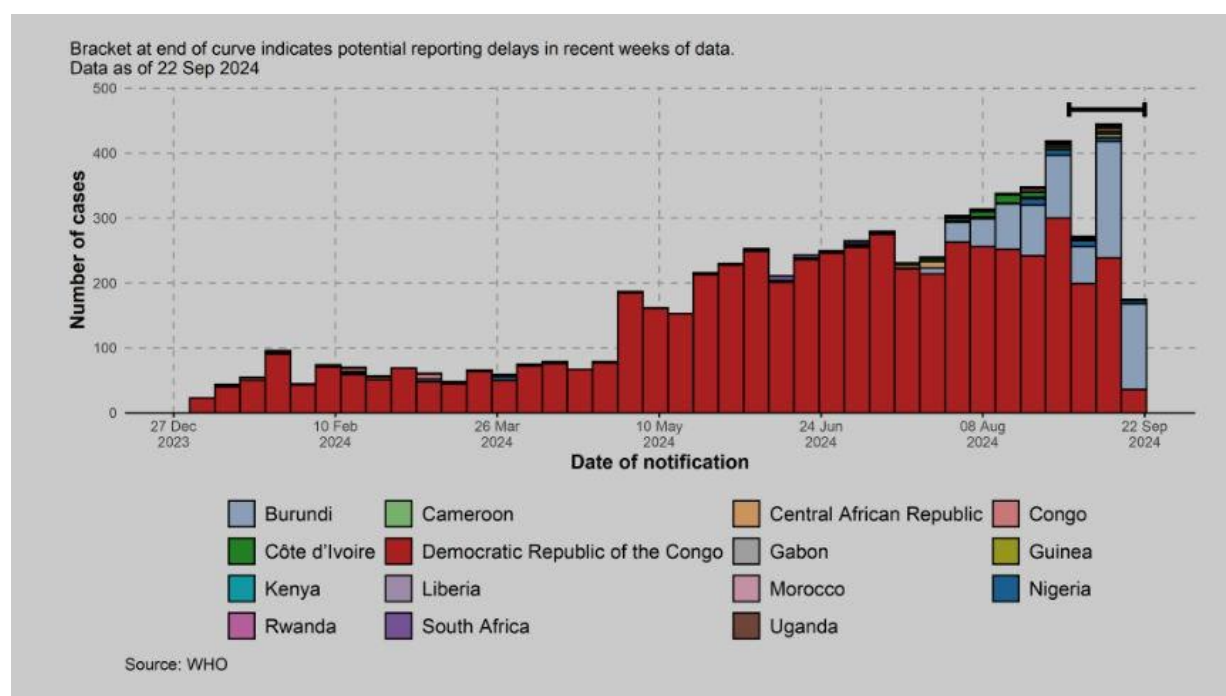
The MPXV is divided into two clades: clade I (formerly Congo Basin clade) and clade II (formerly West African clade). Each clade is further divided into two subclades, clade Ia and Ib, and clade IIa and IIb. Historically, mpox was viewed as a viral zoonosis, primarily occurring in

tropical rainforest regions of Central, West and more recently East Africa, with occasional cases exported to other regions, and limited onward community transmission. In very few instances, MPXV has been found in wild animals though the animal reservoir has not been definitively identified; no direct link (e.g., sequence homology) has ever been identified between an infected animal and an infected human in endemic areas.

CURRENT GLOBAL SCENARIO

A global outbreak of MPXV Clade IIb began in 2022, driven primarily through sexual contact amongst men who have sex with men, and particularly individuals who had multiple partners. While this global outbreak of Clade IIb has largely subsided, in 2024 an unprecedented increase in mpox cases has been observed in the African Region. This surge is primarily driven by the spread of Clade I in the Democratic Republic of the Congo, which accounts for about 90% of cases in the region. While the epidemiology is not completely understood, it is clear that two main and distinct outbreaks are ongoing in the Democratic Republic of the Congo: one involving Clade Ia in the mpox-endemic provinces (presumably still involving a degree of zoonotic transmission), and another involving Clade Ib currently in the eastern part of the country, driven by human-to-human transmission. The latter has rapidly spread in eastern Provinces as well as to neighbouring countries such as Burundi, Kenya, Rwanda, and Uganda, which had not previously reported mpox in the past. Based on limited available epidemiological data, Clade Ib has been spreading proportionally more among adults, likely through close physical contact, including sexual contact. However, while the outbreak was initially detected among sexual networks, including sex workers, as the virus spreads further, the affected groups appear to be changing, with the virus also taking hold within households and other settings. In historically endemic provinces of the Democratic Republic of the Congo, both children and adults are affected although more cases have been reported in children.

KEY FIGURES				
Reporting period: 01 January 2022 – 31 August 2024				
Area	Number of reported confirmed cases	Number of deaths among confirmed cases	Number countries reporting cases	
Global	106 310	234	123	
Reporting period: 01 January 2024 – 15 September 2024				
Area	Number of reported confirmed cases	Number of deaths among confirmed cases	Number of reported suspected cases	Number of deaths among suspected cases
Africa	6201	32	29 342	812
Democratic Republic of the Congo ¹	5399	25	25 757	806
Burundi ²	564	0	1557	0

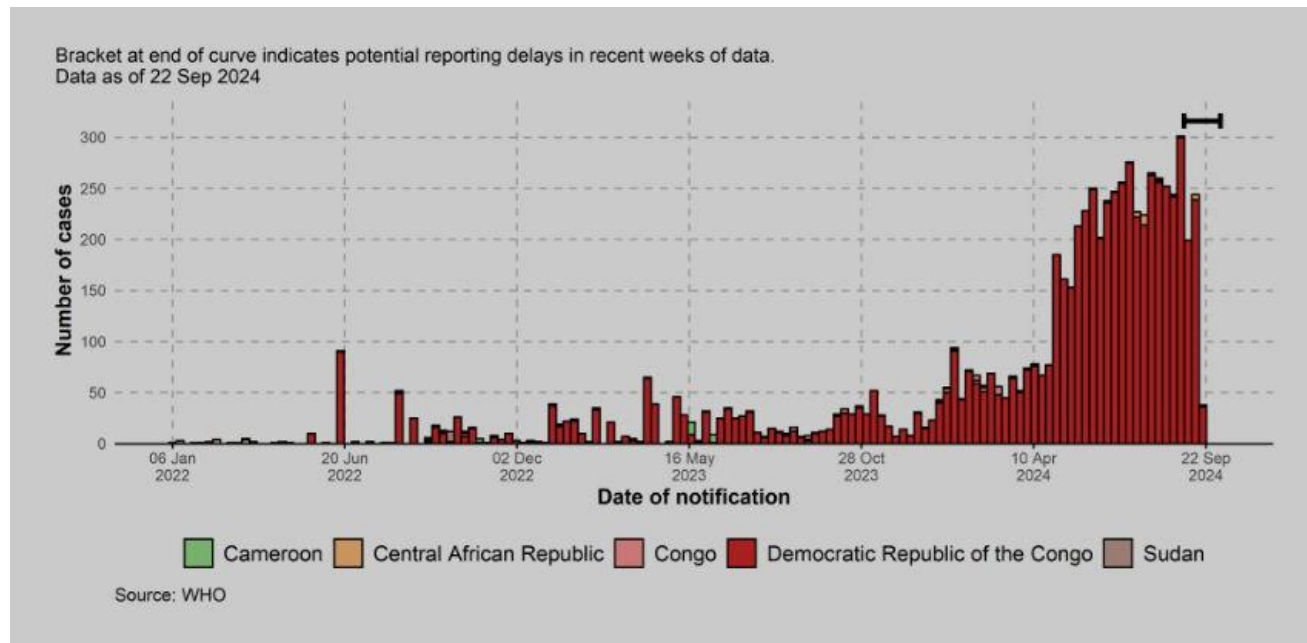


During the global outbreak, which affected a variety of high-income countries, many investigations and research studies were conducted to elucidate transmission dynamics, risk factors for infection, clinical presentation, disease severity and virus characterization through sequencing. Nevertheless, their findings mainly pertain to clade IIb MPXV with exclusively human-to-human transmission through sexual or other forms of close interpersonal contact in high-income settings with access to health care services.

Little is currently known about these parameters in the current outbreak of Clade Ib in Africa, where a broader range of transmission modes (e.g., zoonotic, non-sexual household, sexual between men and women) and population groups (e.g., children, female sex workers) appear to be involved. Quantification of person-to-person epidemiological transmission parameters such as incubation period, serial interval, secondary attack rate, reproduction number and infectious period, by MPXV clade and type of transmission is thus lacking, as is a clear understanding of risk factors in the current Clade Ib outbreak.

The global outbreak has shown that mpox due to clade IIb MPXV could also present with few lesions and in, some cases, patients were asymptomatic or pauci-symptomatic. Many cases had mucosal lesions, especially in the genital or anorectal areas. Generally, during the global outbreak, disease severity has been lower than in prior and concurrent outbreaks of mpox due to clade I MPXV. Mpox mortality is influenced by numerous individual characteristics, including the patient's immune status (particularly untreated or uncontrolled HIV infection), smallpox or mpox vaccination status and time since vaccination, age and general health status of the individual, inoculum size, and access to health services. Consistently, reported mpox mortality in countries outside of Africa has been lower. However, severe cases with medical complications, including death, have been reported for clade IIb cases. Little is yet known about the frequency of severe cases and deaths in mpox due to Clade Ib MPXV, and their relationship with the aforementioned individual characteristics.

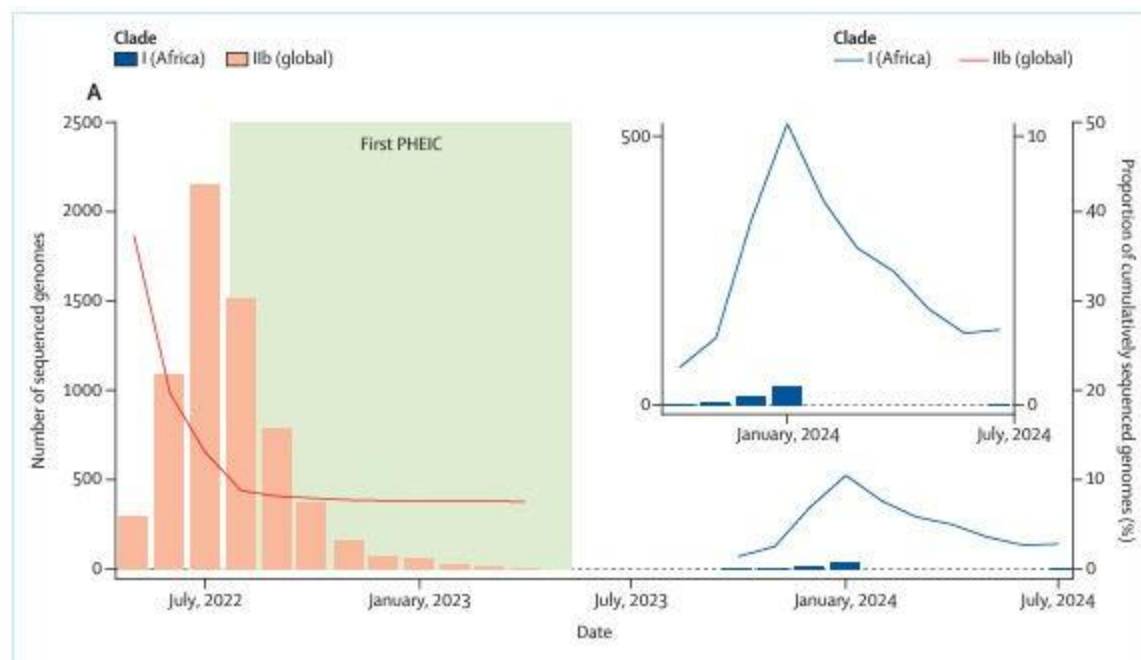
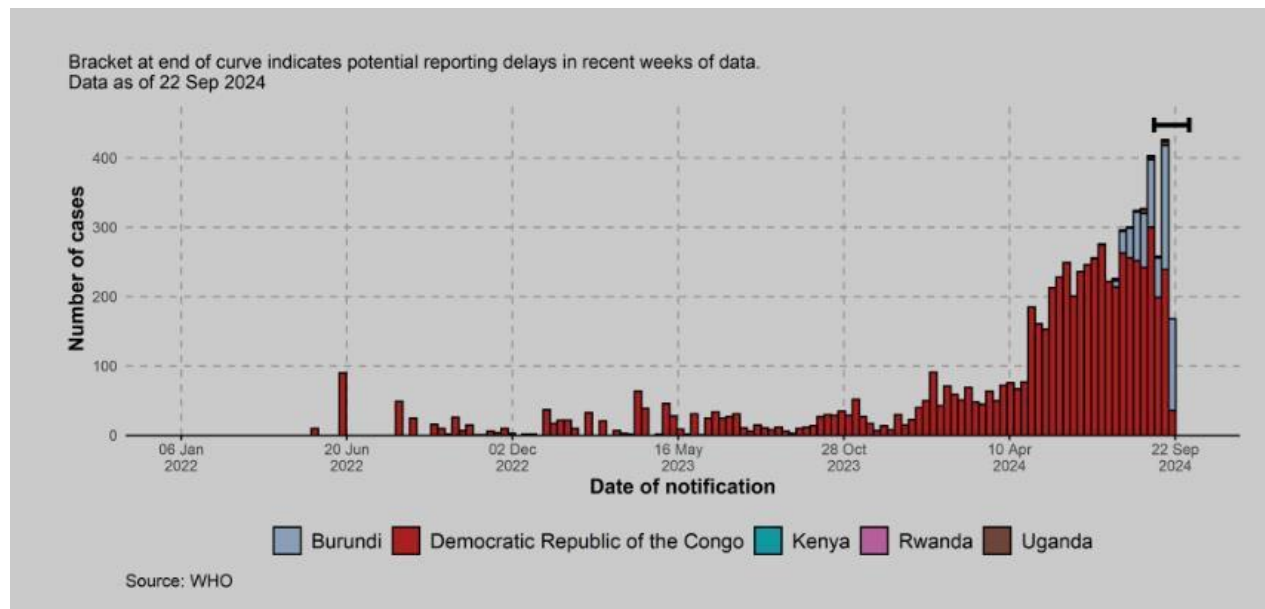
Confirmed cases of Clade Ia



Clade Ib MPXV

In 2023, a new variant of clade I MPXV was identified in the DRC's South Kivu province, named clade Ib, demonstrating evidence of adaptation to humans due to sustained human-human transmission. In recent months, clade Ib mpox has spread to neighbouring countries, including Burundi, Central African Republic, Republic of the Congo, Kenya, Rwanda, and Uganda. In response, on Aug 14, 2024, WHO redeclared mpox as a public health emergency of international concern (PHEIC) making it the second infectious disease that has caused two independent PHEICs in the 21st century, the first being Ebola. Five countries in Africa (Burundi, the Democratic Republic of the Congo, Kenya, Rwanda and Uganda) and three countries outside of Africa (Sweden, Thailand and India) have reported clade Ib monkeypox virus (MPXV). Available information suggests that sustained community transmission of this strain is ongoing in the Democratic Republic of the Congo and Burundi.

Confirmed cases of Clade Ib



WHO Mpox Risk Assessment

WHO conducted the latest global mpox rapid risk assessment in August 2024. Based on the available information, the risk was assessed as:

- a) In eastern Democratic Republic of the Congo and neighbouring countries: **high**.
- b) In areas of the Democratic Republic of the Congo where mpox is endemic: **high**.
- c) In Nigeria and other countries of West, Central and East Africa where mpox is endemic: **moderate**.
- d) In all other countries in Africa and around the world: **moderate**.

Incubation period:

- The incubation period (interval from infection to onset of symptoms) of Monkeypox is usually from 6 to 13 days. However, it can range from 5 to 21 days.

Period of communicability:

- 1 to 2 days before the onset of the rash until all the scabs fall off/get subsided.
- Usually, the rash develops around 2 days after the fever and hence only symptomatic patients are infectious.

Mode of transmission:

- Human-to-human transmission occurs primarily through prolonged skin-to-skin or face-to-face contact. It can also transmit through large respiratory droplets, generally requiring prolonged close contact. It can also be transmitted through direct contact with body fluids or lesion materials and indirect contact with lesion materials, such as through contaminated clothing or linens of an infected person. Vertical transmission also has been reported.
- Animal-to-human transmission: may occur by bite or scratch of infected animals like small mammals, including rodents (rats, squirrels) and non-human primates (monkeys, apes) or through bush meat preparation.

Case Definition**1. Suspected case:**

- i) A person who has travelled from a region where there is ongoing Mpox transmission/is a contact with a probable or confirmed mpox case in the 21 days before the onset of signs or

symptoms, and who presents with any of the following: acute onset of fever ($>38.5^{\circ}\text{C}$), headache, myalgia (muscle pain/body aches), back pain, profound weakness, or fatigue.

OR

ii) A person presenting with an unexplained acute skin rash, mucosal lesions, or lymphadenopathy (swollen lymph nodes). The skin rash may include single or multiple lesions in the anogenital region or elsewhere on the body. Mucosal lesions may include single or multiple oral, conjunctival, urethral, penile, vaginal, or anorectal lesions. Anorectal lesions can also manifest as anorectal inflammation (proctitis), pain and/or bleeding.

AND

for which the following common causes of acute rash or skin lesions do not fully explain the clinical picture: varicella zoster, herpes zoster, measles, herpes simplex, bacterial skin infections, disseminated gonococcus infection, primary or secondary syphilis, chancroid, lymphogranuloma venereum, granuloma inguinale, molluscum contagiosum, allergic reaction (e.g., to plants); and any other locally relevant common causes of papular or vesicular rash.

NB: a negative laboratory test for the listed common causes of rash illness will not be needed to classify a case as suspected mpox.

2. Probable case:

A person presenting with an unexplained acute skin rash, mucosal lesions, or lymphadenopathy (swollen lymph nodes). The skin rash may include single or multiple lesions in the anogenital region or elsewhere on the body. Mucosal lesions may include single or multiple oral, conjunctival, urethral, penile, vaginal, or anorectal lesions. Anorectal lesions can also manifest as anorectal inflammation (proctitis), pain and/or bleeding.

AND

One of the following:

has an epidemiological link to a probable or confirmed case of mpox in the 21 days before symptom onset.

3. Confirmed case:

A person who meets either of the following laboratory criteria:

- Detection of monkeypox virus (MPXV) DNA by real-time polymerase chain reaction (PCR) and/or sequencing.

OR

- Detection of orthopoxvirus (OPXV) DNA by PCR in settings where:

-An mpox outbreak has been confirmed through MPXV-specific PCR or sequencing;

AND

- No other orthopoxviruses are known to circulate in human populations.

4. Discarded case:

A suspected or probable case for which laboratory testing of lesion fluid, skin specimens or crusts by PCR and/or sequencing is negative for orthopoxvirus or MPXV.

Conversely, a retrospectively detected probable case for which lesion testing can no longer be adequately performed (i.e., after the crusts fall off) and no other specimen is found PCR-positive, would remain classified as a probable case.

5. Contact of a case - definition

A contact is defined as a person who has been exposed to a confirmed case (person with confirmed mpox) during the infectious period (from the start of symptoms until all lesion scabs

fall off and new skin has formed) and who has had one or more types of contacts with the case (see table below for types of exposure modes that could occur).

N.B., contacts may be listed while a case is still classified as suspected or probable but will be discarded if the case is subsequently discarded.

Direct physical (non-sexual) contact	Physical non-sexual contact: skin-to-skin and skin-to-mucosal contact, which includes touching, caressing, hugging, kissing, holding, carrying, breastfeeding, bathing/wiping, etc. Includes contact with a deceased person's skin lesions or body fluids.
Sexual contact	Mucosa-to-mucosa contact, which includes kissing on the mouth, oral (fellatio, cunnilingus and anilingus), vaginal or anal sexual intercourse.
Contact with contaminated materials	Contact of the skin or mucous membranes with dislodged lesion material (crusts), through activities such as handling clothing or bedding of a case without personal protective equipment (PPE), or cleaning of contaminated rooms without PPE, including household members who may come in contact with contaminated objects and surfaces in the absence of direct physical contact with the case; injury with needlestick used for case sampling or other potentially contaminated needle; contact with the sample of a case during laboratory activities and analysis; and contact with body fluids (e.g., breastmilk, semen) in the absence of direct physical contact.
Prolonged close (non-contact) exposure	This occurs when infectious respiratory particles (IRPs) are expelled into the air by the case, then directly deposited on the exposed mucosal surfaces (mouth, nose or eyes) of another person, or when IRPs have travelled either short or long distances from the infectious person and are inhaled by a receiving person. For example, this may include exposure to a case in close proximity, such as speaking, eating in front of each other, and other close-proximity activities. It may also include aerosol-generating procedures performed on cases in healthcare settings. The distance and time over which this occurs may vary. This is the presumed type of contact when none of the other types have occurred.
Vertical transmission	Transmission from mother to fetus during pregnancy or to the newborn during birth.

Clinical features

Mpox is usually a self-limited disease with symptoms lasting from two to four weeks. Severe cases occur more commonly among children and Immunocompromised and are related to the extent of virus exposure, patient health status and the nature of complications. The extent to which asymptomatic infection occurs is unknown. The case fatality ratio of Mpox ranges from 0

to 11% in the general population and has been higher among young children. The case fatality rate associated with infections due to the Central African clade is 10%, and that with the West African clade is 1 to 3%. The estimated CFR during the current outbreak is 2.8%.

I. Common symptoms and signs

a. Prodrome (0-5 days)

- 1) Fever
- 2) Lymphadenopathy — Typically occurs with fever onset
 - Periauricular, axillary, cervical or inguinal
 - Unilateral or bilateral
- 3) Headache, muscle aches, exhaustion
- 4) Chills and/or sweats
- 5) Sore throat and cough

b. Skin involvement (rash)

- 1) Usually begins within 1-3 days of fever onset, lasting for around 2-4 weeks
- 2) Deep-seated, well-circumscribed and often develops umbilication
- 3) Lesions are often described as painful until the healing phase when they become itchy (in the crust stage)
- 4) Stages of rash (slow evolution)

— Enanthem- first lesions on tongue and mouth

— Macules starting from the face spreading to arms, legs, palms, and soles (centrifugal distribution) within 24 hours

— The rash goes through a macular, papular, vesicular and pustular phase. Classic lesion is vesiculo-pustular

— Involvement by area: face (98%), palms and soles (95%), oral mucous membranes (70%), genitalia (28%), conjunctiva (20%). Generally, skin rashes are more apparent on the limbs and face than on the trunk. Notably, the genitalia can be involved

— By the 3rd day, lesions progress to papules

— By the 4th to 5th day, lesions become vesicles (raised and fluid-filled).

— By the 6th to 7th day, lesions become pustular, sharply raised, filled with opaque fluid, firm and deep-seated.

— May umbilicate or become confluent

— By the end of 2nd week, they dry up and crust

— Scabs remain for a week before falling off

— The lesion heals with hyperpigmented atrophic scars, hypo-pigmented atrophic scars, patchy alopecia, hypertrophic skin scarring and contracture/deformity of facial muscles following the healing of ulcerated facial lesions

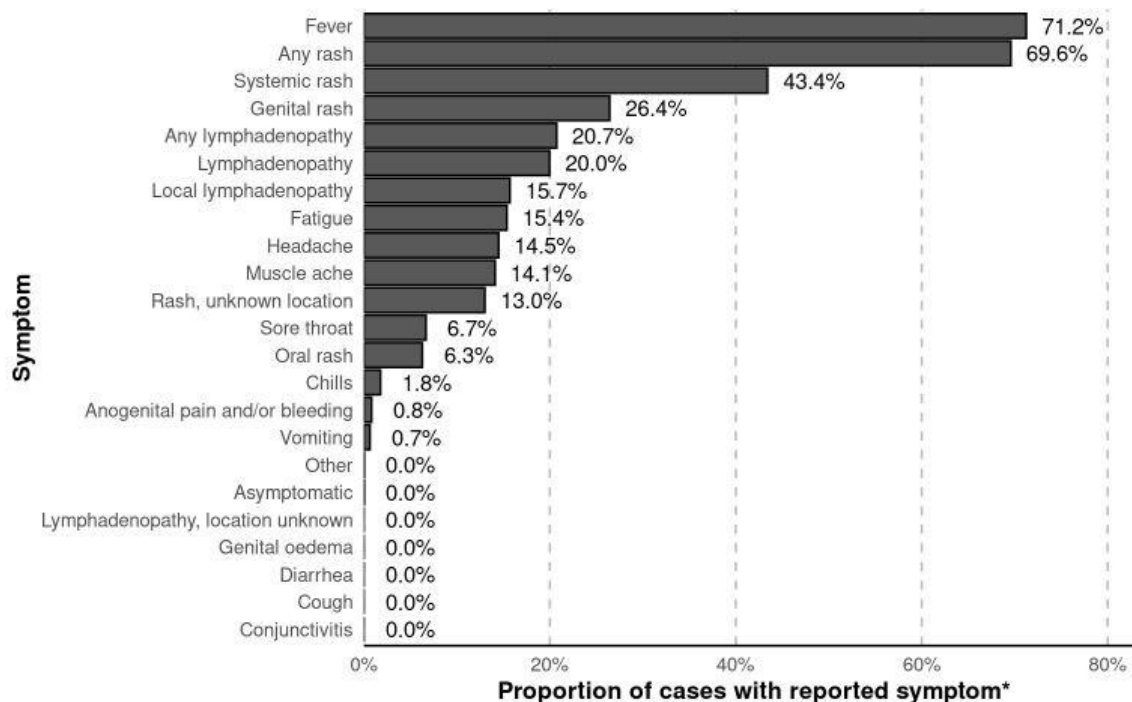
— A notable predilection for palm and soles is characteristic of Mpox

c. The skin manifestations depend on vaccination status, age, nutritional status, and associated HIV status. Mpox mostly occurs in communities with a high prevalence of malnutrition, parasitic infections, and other significant health-compromising conditions, which could impact the prognosis of a patient with Mpox.

d. The total lesion burden at the apex of the rash can be quite high (>500 lesions) or relatively slight (<25).

The clinical presentation of Mpox cases associated with 2022 outbreak has been atypical, as many cases did not present with the classically described clinical picture for Monkeypox (fever, swollen lymph nodes, followed by centrifugal rash). Among the cases who reported at least one

symptom, 81% presented with systemic rash (widespread rash on the body), 50% presented with fever and 41% presented with genital rash.



Source: WHO

*21748 cases with at least one reported symptom from a country where at least two unique symptoms reported used as denominator

Differential Diagnosis

The differential diagnoses of Mpox include Varicella (Chickenpox), disseminated herpes zoster, disseminated herpes simplex, measles, chancroid, secondary syphilis, hand foot mouth disease, infectious mononucleosis and molluscum contagiosum.

Complications

- Secondary infections
- Pneumonia, sepsis, encephalitis
- Corneal involvement (may lead to loss of vision)

Diagnosis

a. Personal Protective Equipment for handling the clinical specimens:

PPE to be donned before collecting the specimens should include- Coveralls/Gowns, N-95 mask, face shield/safety goggles, double pair of gloves. Donning & doffing of PPE should be carefully performed as per the standard procedure. The procedure for sample collection and transport of the clinical specimen are placed as **Annexure 2**. Instructions on sample packaging and transport are provided in detail in **Annexure 3**.

Clinical samples should be collected from the cases as per the following table

Traveller from outbreak /endemic region or Community Transmission		
Asymptomatic	- Observe for the development of any signs and symptoms for 21 days' post exposure - If signs and symptoms develop, collect specimens as per the duration of illness as mentioned below	
	Rash phase**	Recovery phase
Symptomatic	*Lesion roof- with scalpel or plastic scrapper collected in plain tube *Lesion fluid with intradermal syringe *Lesion base scrapings with sterile polyester swab collected in plain tube *Lesion crust in plain tube - NPS/OPS in dry plain tube [without any bacterial medium or VTM] - Blood collected in SSGT (4-5 ml) ⊗Blood collected in EDTA (2-3ml) - Urine in sterile urine container (3-5ml)	⊗Blood collected in SSGT (4-5 ml) - Urine in sterile urine container (3-5ml)

****The specimens from lesion should be collected from multiple sites**

Diagnostic modalities for Mpox

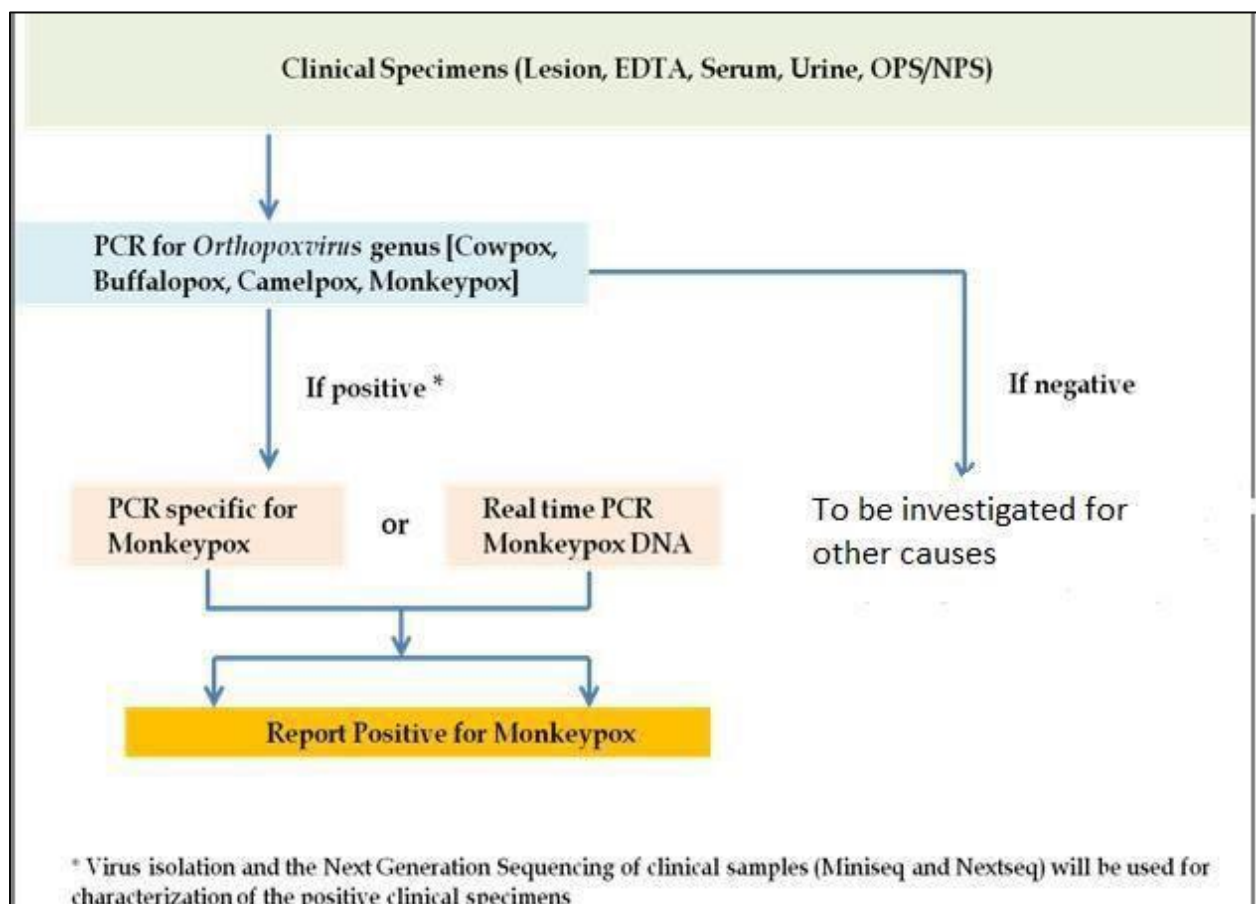
For the confirmation of Mpox on the suspected clinical specimens:

- a) PCR for *Orthopoxvirus* genus [Cowpox, Buffalopox, Camelpox, Monkeypox] will be done
- b) If the specimen shows positivity for the Orthopoxvirus, it would be further confirmed by

Mpox specific conventional PCR or real time PCR for Mpox DNA

- c) Additionally, virus isolation and the Next Generation Sequencing of clinical samples (Miniseq and Nextseq) will be used for the characterization of the positive clinical specimens.

For this, samples should be sent to NIV Pune/IAV as per the directions of DSO



Management

a. Principles of Management

- Patient isolation
- Protection of compromised skin and mucous membranes
- Rehydration therapy and Nutritional support
- Symptom alleviation
- Monitoring and treatment of complications
- Psychological support

b. Patient Isolation

- Isolate suspected/confirmed cases of Mpox in an isolation room of the hospital/ at home in a separate room with separate ventilation and toilet.
- Initially, all suspected/confirmed cases of Mpox have to be in hospital-based isolation rooms.
- Since the transmission dynamics of Clade Ib is not fully understood, it will be prudent to maintain patients with clade Ib in isolation at hospitals. For these patients, repeat samples have to be sent every fourth day and can be discharged once PCR from all samples including crust turns negative.
- As the severity of Mpox in those with advanced HIV, those on immunosuppressants etc is high, all such patients should be treated in hospitals.
- Clade 2b may be discharged and advised to continue room isolation at home if the patient is afebrile and clinically stable. There is no need for repeat sampling for these patients every fourth day. After the crusts have fallen off repeat sampling may be performed [to be arranged by DSO] if negative, PCR result is required for travelling abroad.
- If clade is not known, isolation protocol for clade 2b is to be followed.
- Isolate until all lesions have resolved, the scabs have fallen off, and a fresh layer of intact skin has formed (usually 2-4 weeks).
- It is particularly important to try to avoid close prolonged contact with young children and people who are pregnant, breastfeeding, immunocompromised, or people who have a history of atopic dermatitis or eczema as they may be at higher risk of serious illness. If there is a chance of coming into contact these high risk groups while in home isolation, it will be better to opt for hospital based isolation.

Precautions to be followed by patients while in Home Isolation

- Patients should wear a triple-layer mask.
- Skin lesions should be covered to the best extent possible (e.g. long sleeves, long pants) to minimize the risk of contact with others.
- Should sleep in a separate room and use a dedicated bathroom.
- If patients need to spend time in the same room as someone in their household is needing help, they have to cover all skin lesions with clothes, gloves and/or bandages as appropriate and minimize any physical contact. In addition, the patient and the person in the room with (if over 2 years of age) should wear a well-fitting mask or respirator when in close contact (e.g., within 6 feet) for more than a brief encounter. It is particularly important to try to avoid close prolonged contact with young children and people who are pregnant, breastfeeding, or immunosuppressed, or people who have a history of atopic dermatitis or eczema as they may be at higher risk of serious illness.
- While in isolation, patients should avoid hugging; cuddling, massaging; kissing; sleeping in the same bed; having oral, anal, and vaginal sex; or touching the genitals or anus of others or other close skin-to-skin contact with other people. Do not share items used with other people or animals, including bedding, towels, clothes, utensils, cups, and electronics among other items, unless they have been cleaned and disinfected
- Launder or disinfect items that have been worn or handled and clean and disinfect surfaces that have been touched by a skin lesion. Patients themselves should clean them if possible.
- Patients should clean their hands frequently throughout the day, especially after direct contact with lesions. Other household members should also clean their hands frequently. Use soap and water for 20 seconds or hand sanitizers that contain at least 60% alcohol.
- **Patients should avoid use of contact lenses to prevent spreading the infection to the eyes and also should avoid shaving areas of the body that have skin lesions/rash.**
- **Isolation to be continued until all lesions have resolved, scabs have completely fallen off and a fresh layer of skin appears**

Table 2: Supportive management of Monkeypox

Component of management	Symptoms/Signs	Management
Protection of compromised skin and mucous membranes	Skin rash	• Clean with simple antiseptic • Mupirocin Acid/Fucidin ointment • Cover with light dressing if extensive lesion present • Do not touch/ scratch the lesions • In case of secondary infection relevant systematic antibiotics may be considered
	Genital ulcers	• Sitz bath
	Oral ulcers	• Warm saline gargles/ oral topical anti-inflammatory gel
	Conjunctivitis	• Usually, self-limiting • Consult Ophthalmologist if symptoms persist or there are pain/ visual disturbances
Rehydration therapy and nutritional support	Dehydration can occur in association with poor appetite, nausea, vomiting and diarrhoea	• Encourage ORS or oral fluids • Intravenous fluids if indicated • Encourage nutritious and adequate diet
Symptom alleviation	Fever	• Tepid sponging • Paracetamol as required
	Itching/Pruritus	• Topical Calamine lotion • Antihistaminics
	Nausea and vomiting	• Consider anti-emetics
	Headache/ malaise	• Paracetamol and adequate hydration

c. Monitoring and treatment of complications

The patient should closely monitor for the appearance of any of the following symptoms during the period of isolation:

If in room isolation at home, patients should inform health authorities if they develop any of the following symptoms

- Pain in eye or blurring of vision .
- Shortness of breath, chest pain, difficulty in breathing .
- Altered consciousness, seizure .
- Decrease in urine output .
- Poor oral intake .

- Lethargy .

WHEN CAN PATIENTS RESUME NORMAL ACTIVITIES

- All the skin lesions have healed (i.e., scabs have fallen off and a fresh layer of skin has formed at the lesion sites) AND
- Any other symptoms, including fever, have gone for at least 48 hours without the use of antipyretics.
- **Note about sex: There may be a risk of passing mpox to a sex partner even after skin lesions have healed. This is because the virus may remain in semen and other genital excretions. It is recommended that you use condoms for 12 weeks after recovery.**

a. Definition of a contact

A contact is defined as a person who, in the period beginning with the onset of the source case's first symptoms, and ending when all scabs have fallen off, has had one or more of the following exposures with a probable or confirmed case of Monkeypox:

- Direct skin-to-skin physical contact (such as touching, hugging, kissing, intimate or sexual contact.
- Direct physical contact, including sexual contact
- Contact with contaminated materials such as clothing or bedding, including material dislodged from bedding or surfaces during handling of laundry or cleaning of contaminated rooms
- Prolonged face-to-face respiratory exposure in close proximity.
- Respiratory exposure (i.e., possible inhalation of) or eye mucosal exposure to lesion material (eg: scabs/crusts) from an infected person.
- Face-to-face exposure (including healthcare workers without appropriate PPE)
- Direct physical contact, including sexual contact
- Contact with contaminated materials such as clothing or bedding

b. Contact Identification

Cases can be prompted to identify contacts across the household, workplace, school/nursery, sexual contacts, healthcare, houses of worship, transportation, sports, social gatherings, and any other recalled interactions.

WHO has established three levels of risk for contact with a Mpox case as follows:

a. High risk

Direct exposure of the skin or mucous membranes to skin or respiratory secretions of a person with confirmed, probable or suspected Mpox, their body fluids (e.g., lesion vesicular or pustular fluid) or potentially infectious material (including clothing or bedding) if not wearing appropriate PPE.

This includes:

- Inhalation of droplets or dust from cleaning contaminated rooms
- Mucosal exposure due to splashes from body fluids
- Physical contact with someone who has Mpox, including direct contact during sexual activities. This includes face-to-face, skin-to-skin or mouth-to-skin contact or exposure to body fluids or contaminated materials or objects (fomites)
- Normally sharing a residence (permanently or occasionally) during the presumed incubation period with a person who has been diagnosed with Mpox, or
- A penetrating sharp injury from a contaminated device or through contaminated gloves.

b. Medium risk

- No direct contact but close proximity in the same room or indoor physical space as a symptomatic Mpox patient if not wearing appropriate PPE.

c. Low or minimal risk

- Contact with a person with confirmed, probable or suspected Mpox or an environment that may be contaminated with Mpox virus while wearing appropriate PPE and without any known breaches of PPE or of donning and doffing procedures

- Community contacts, such as being in an outdoor setting with a symptomatic case without close proximity or physical contact

Travel related contact

If a probable or confirmed case is reported in a long-distance travel conveyance (e.g., lasting for more than 4 hours), travellers seated in the same row, two rows in front and two rows behind the sick traveller, as well as the cabin crew who served the case, can be considered medium-risk contacts if they had no physical contact with the case and were not wearing protective PPE such as face mask. Any passenger or crew team member who reports physical contact with a symptomatic case without using PPE can be considered a high-risk contact.

Contact monitoring

- a) **There is no need to isolate the contacts but they should be monitored at least daily for the onset of signs/symptoms for a period of 21 days** (as per the case definition above) from the last contact with a patient or their contaminated materials during the infectious period. In case of the occurrence of fever, the patient has to be isolated and clinical/lab evaluation is warranted.
- b) Asymptomatic contacts should not donate blood, cells, tissue, organs or semen while they are under surveillance.
- c) Pre-school children shall not be sent to daycare centres, nurseries, or other group settings.
- d) Health workers who have unprotected exposure to patients with Mpox or possibly contaminated materials can continue to work if asymptomatic but should undergo active surveillance for symptoms for 21 days.

Advisory for International Passengers and surveillance at Airports and Role of APHOs/PHOs is also elaborated in **Annexure 4**.

Surveillance Strategies

The proposed surveillance strategy aims to rapidly identify cases and clusters of infections and the sources of infections as soon as possible to:

- a) Isolate cases to prevent further transmission
- b) Provide optimal clinical care
- c) Identify and manage contacts
- d) Protect frontline health workers
- e) Effective control and preventive measures based on the identified routes of transmission.

Surveillance outline

- a) Use Standard Case Definitions by all District Surveillance Units (DSUs) under Integrated Disease Surveillance Programme (IDSP) and at Points of Entry (PoEs).
- b) Even one case of Mpox is to be considered an outbreak. A detailed investigation by the Rapid Response Teams needs to be initiated through IDSP.
- c) Report any suspected case immediately to the DSU and then to the State Surveillance Units (SSU).
- d) Send the samples as per the guidelines to the designated laboratories.

a) Salient features of surveillance:

- a) Targeted surveillance for probable cases or clusters.
 - b) Initiate contact tracing and testing of the symptomatic persons after the detection of the probable/confirmed case.
- Contacts of probable and confirmed cases should be monitored daily for any sign or symptom for 21 days from the last contact with a case or their contaminated materials during the infectious period.
 - **Quarantine or exclusion from work is not necessary for primary contacts as long as no symptoms develop during the self-monitoring period.**

- During the 21 days of monitoring, encourage contacts to practice hand hygiene and respiratory etiquette rigorously, avoid contact with immunocompromised people, children or pregnant women, and avoid any sexual contact.
- Non-essential travel is discouraged during the self-monitoring period.

b) Core Surveillance Strategy

a) Hospital-based surveillance: Health facility-based surveillance & testing

Surveillance sites - Dermatology clinics, STD clinics, Medicine, Paediatrics OPDs, casualty etc.

- An Alert message should be pasted in front of the surveillance sites, including the suspect case definition in the local language
- All hospital staff, including security personnel, should be sensitized about the disease
- A standard operating procedure shall be in place in every hospital regarding patient flow, referral, transportation and information flow related to notifications

b) Targeted Surveillance: This can be achieved by:

- i) Measles surveillance by the Immunization division
- ii) Targeted intervention sites identified by NACO for MSM, the FSW population

c) Reporting

Reporting of cases is to be done in the format as in **Annexure 1**.

d) Risk Communication and Preventive Measures

Raising awareness of risk factors and educating people about the measures they can take to reduce exposure to the virus is the main prevention strategy for Mpox. There are number of measures that can be taken to prevent infection with the Mpox virus:

- Avoid contact with any materials, such as bedding that have been in contact with a sick person.
- Isolate infected patients from others.

- Practice good hand hygiene after contact with infected animals or humans. For example, washing your hands with soap and water or using an alcohol-based hand sanitizer.
- Use appropriate personal protective equipment (PPE) when caring for patients.

e) Reducing the risk of human-to-human transmission

Surveillance and rapid identification of new cases are critical for outbreak containment. During human Mpox outbreaks, close contact with infected persons is the most significant risk factor for Mpox virus infection. Health workers and household members are at a greater risk of infection. Health workers caring for patients with suspected or confirmed Mpox virus infection, or handling specimens from them, should implement standard infection control precautions. Samples taken from people and animals with suspected Mpox virus infection should be handled by trained staff working in suitably equipped laboratories. Patient specimens must be safely prepared for transport with triple packaging in accordance with WHO guidance for the transport of infectious substances.

f) Infection Prevention and Control (IPC)

A combination of standard contact and droplet precautions should be applied in all healthcare settings when a patient presents with fever and vesicular/pustular rash.

Clinical triage includes early recognition and immediate placement of the patient in a separate area from other patients (source control). All individuals, including family members, visitors and HCWs, should apply standard, contact and droplet precautions.

g) Patient isolation

The patient should be managed in isolation, and precautions should be taken to minimize exposure to surrounding persons, which include placing a surgical mask over the patient's nose and mouth—if tolerable to the patient—and covering any of the patient's exposed skin lesions with a sheet or gown.

h) Ambulance Transfer

- When a case has to be transported, the personnel accompanying the patient should wear PPE (long-sleeved gown, N95 mask, gloves, and goggles).
- Give prior information to the hospital about the admission/transfer of a potentially infectious person.
- Request the patient to wear a mask (if tolerated) and advise on Respiratory Hygiene and Cough Etiquette.
- If lesions are present, cover them with long-sleeved clothing/pants or a clean sheet to minimize contact with others. In the ambulance, use disposable linen if available.
- The ambulance should be cleaned and disinfected before being used for other patients. **After wearing PPE**, surfaces (stretcher, chair, door handles etc.) should be cleaned with a freshly prepared 1% hypochlorite solution or equivalent. Carefully place reusable blankets in a bag without shaking or fluffing them, then put them into a laundry bag and send for laundering, clearly labelling it, so that the person in the laundry wears appropriate PPE before handling or autoclaving it before opening. Follow the manufacturer's instructions for cleaning/disinfecting reusable equipment in the ambulance. All masks and any waste contaminated with crusts, secretions, serum or body fluids should be disposed of as infectious waste in the yellow bag.

If the driver's chamber is not separate in the ambulance, the driver should also use PPE.

i) Additional Precautions

- **PPE** (Disposable gown, gloves, N95 mask, Eye goggles) should be donned before entering the patient's room and used for all patient contact. All PPE should be disposed of before leaving the isolation room where the patient is admitted.

- **Hand hygiene** (following standard steps of hand hygiene) after each contact with an infected patient and/or their environment during care.
- Correct containment and disposal of contaminated waste (e.g., dressings) in accordance with **Biomedical Waste Management guidelines (2016 & subsequent amendments)** for infectious waste.
- Care when handling **soiled laundry** (e.g., bedding, towels, personal clothing) to avoid contact with lesion/ other infected materials.
- Soiled laundry should never be shaken or handled in a manner that may disperse infectious particles.
- Care when handling used **patient-care equipment** to prevent contamination of skin and clothing.
- Ensure that used equipment has been cleaned and reprocessed appropriately.
- Ensure provisions are in place for cleaning and disinfecting environmental surfaces in the patient care environment.
- Hospital disinfectant currently used for environmental sanitation may be used as per recommendations for concentration, contact time, and care in handling.

j) Risk communication

This includes providing public health advice through the channels that target audiences use on how the disease transmits, its symptoms, preventive measures and what to do in case of a suspect or confirmed infection. This should be combined with targeting community engagement to the population groups who are most at risk, working closely with health care providers, including STD clinics and civil society organizations.

Risk communication should be informed by insights from social listening detecting public sentiment, and should timely address possible rumours and misinformation. Health information and advice should be provided, avoiding certain stigmatizing groups such as men who have sex with men (MSM).

The key measures that can be taken to prevent infection with the Mpox virus:

- Isolate infected patients from others who could be at risk for infection.

- Avoid contact with any materials, such as bedding, that have been in contact with a patient of Monkeypox.
- Practice good hand hygiene after contact with infected persons. For example, washing your hands with soap and water or using an alcohol-based hand sanitizer.
- Use masks and gloves when caring for patients.
- . While in quarantine, daily monitor symptoms and go for isolation and testing whenever any symptoms/signs develop to prevent transmission to new contacts.

13. References

1. Mpox: Global trends: World Health Organization: Sep 2024
 2. Investigation of mpox transmission ;Study protocol: Version: 1.1 Date: 24 September 2024
 3. Surveillance, case investigation and contact tracing for Monkeypox: Interim guidance by WHO June24, 2022
 4. Epidemiological update, week 37/2024: Mpox due to monkeypox virus clade I:Europeancentre for disease prevention and control.
 5. Public health strategies for Mpox: CDC Sep 12 ; 2024
-

ANNEXURE-I: Case Reporting Format

National Institute of Virology, Pune			
Case Information form			
Field ID	Date of Collection of Specimen	Collected by	
Aadhar Card Number			
Patient Information :			
Name of the patient		Occupation	
Age in completed years	Gender	Pregnant	If Pregnant (Mention weeks of pregnancy)
Detailed Address:			
Locality	Village	Taluka	City
District	State	Pincode	Contact Number
Clinical History :			
Name of Hospital/ Clinic		OPD/ IPD Number	
Post illness day		Date of Hospitalization	
Date of onset of symptoms			
☐ Fever	☐ Chills Rigors	Grade of fever	Type of fever
☐ Myalgia	☐ Fatigue	☐ Headache	☐ Malaise
☐ Bodyache	☐ Lymphadenopathy	Specify	
☐ Rash	☐ Macular	☐ Papular	☐ Maculo-papular
☐ Vesicular	☐ Pustular	☐ Petriol	☐ Ischar
☐ Bullae	☐ Scabs Crusts	☐ Others	Specify
☐ Respiratory symptoms	☐ Cold	☐ Cough (dry)	☐ Cough (Expectorant)
☐ Nasal Discharge	☐ Breathlessness	☐ Hemoptysis	☐ Chest pain
☐ Ear Discharge	☐ Sore throat	Others (Specify)	
☐ Eye problems	☐ Redness	☐ Pain	☐ Watery
☐ Stickness	Others (Specify)		
☐ Oro-GI symptoms	☐ Nausea	☐ Vomiting	☐ Diarrhoea
☐ Abdominal pain	☐ Loss of appetite	☐ Oral ulcers	☐ Koplik spot
☐ Swollen tender salivary glands	Others Specify		
☐ CNS symptoms	☐ Altered Sensation	☐ Convulsions	☐ Irritability
☐ Disorientation	☐ Neck pain Stiffness	Others (Specify)	
Complication:			
☐ Pneumonia	☐ ARDS	On Mechanical Ventilation	☐ Coagulopathy
☐ Acute Renal Failure	☐ Encephalitis Meningitis	☐ Sepsis	☐ Severe Dehydration
☐ Uveitis Iritis	☐ Orchitis	☐ Arthritis	☐ Reye's Syndrome
☐ Myocarditis	☐ Hepatitis	☐ Hearing loss	☐ Otitis Media
☐ Acute Malnutrition	☐ Others	Specify	

Past History:	
☐ Diabetes	☐ Hypertension
☐ COPD	☐ Asthma
☐ Pulmonary TB	☐ Heart Disease
☐ Liver disease	☐ Other immunocompromised conditions if yes, specify _____
☐ Smoking	☐ Tobacco chewing
☐ Alcoholism	☐ Others Specify _____
Treatment History:	
☐ Amoxicillin	☐ Septran
☐ Amoxiclav	☐ Azithromycin
☐ Erythromycin	☐ Levofloxacin
☐ Acyclovir	☐ Vb-A syrup Dose _____
☐ Others Specify _____	
Epidemiological History:	
☐ Contact with case of fever with rash in last 10 days	Specify _____
☐ Contact with known case of chicken pox or zoster in last 10 days	Specify _____
☐ Similar history in family members/neighbors/friends	Specify _____
☐ Attending any mass gathering in last 10 days	Specify _____
☐ Past Vaccination History (SVV/Meadles/Mumps/Tubella)	Specify _____
☐ Others	Specify _____
Time of Specimens Collected:	
☐ Throat Swab	☐ Nasopharyngeal Aspirate
☐ Bronchoalveolar Lavage	☐ Swabs of Macropapular lesions
☐ Swabs of Vesicular lesions	☐ Swabs from pustule
☐ Crusts/Scabs	☐ Serum
☐ CSF	☐ Urine
☐ Others Specify _____	
Hematological Investigations:	
Hb (gm%) _____	TLC/WBC _____
Neutrophils _____	Lymphocytes _____
Eosinophils _____	Platelets _____
Blood Urea _____	Serum Creatinine _____
Serum Albumin _____	ALT _____
AST _____	Serum Bilirubin (Total) _____
Bilirubin (Direct) _____	Bilirubin (Indirect) _____
PT _____	INR _____
Urine Bile Salt: Bile Pigment _____	Proteinuria _____
Others (Specify) _____	
X-Ray chest _____	
Laboratory Investigations:	
Real Time PCR _____	Conventional PCR _____
IgM Elisa _____	IgG Elisa _____
Virus Isolation _____	
Outcome History:	
☐ Cured and Discharged	Date of Discharge _____
☐ Died	Date of Death _____
Name of treating physician _____	Contact Number _____
Laboratory Diagnosis _____	
Provisional Diagnosis _____	
Final Diagnosis _____	

ANNEXURE 2- Procedures for the clinical specimen collection:

- Nasopharyngeal and Oropharyngeal swabs in screw-capped plain tube:

- Explain the procedure to the patient
- Remove the polystyrene swab. Don't let anything touch the sterile swab on the end of the stick
- Ask the patient to open their mouth and stick their tongue out
- Use a tongue spatula to press the tongue downward to the floor of the mouth.
- Use a sterile polystyrene swab to swab both of the tonsillar arches and the posterior nasopharynx without touching the sides of the mouth.
- Reach behind the uvula and swab: a. tonsillar fauces, b. the posterior pharynx, and c. any ulceration, exudate, lesion, or area of inflammation.
- Don't let the sterile swab touch the patient's tongue, gums, or teeth as you gently remove it from his/her mouth
- Place the swab into the screw-capped plain plastic tube [without any medium or VTM]
- Similarly, tilt the patient's head back 70 degrees. Gently and slowly insert a polystyrene swab with a flexible shaft through the nostril parallel to the palate until resistance is encountered.
- The distance is equivalent to that from the nostril to the ear of the patient, indicating contact with the nasopharynx
- Gently rub and roll the swab, leaving it in place for several seconds to absorb secretions. If a deviated septum or blockage creates difficulty in obtaining the specimen from one nostril, use the same swab to obtain the specimen from the other nostril
- Slowly remove the swab while rotating it. Specimens can be collected from both nostrils
- Place the swab into the same screw-capped plain plastic tube [without any medium or VTM] in which the OPS swab was kept
- Break the excess stick and recap the tube tightly. Keep the tube in an upright position in the stand.
- Surface decontaminate the tube using 2% Lysol or 0.5-1% Sodium hypochlorite wipes

- Explain the procedure to the patient
- Venous Blood Collection in SSGT and EDTA tube:
 - Check the patient's forearm/median cubital fossa for a prominent vein of good size. Use the median cubital vein wherever feasible.
 - Apply the tourniquet 4-5 fingerbreadths above the site of venepuncture.
 - Perform hand hygiene by using an alcohol-based hand rub on the outer pair of gloves.
 - Disinfect the skin site using a wipe containing 70% alcohol, in a circular motion, from the centre to the periphery. Allow the skin to dry.
 - Do not re-touch the site of puncture again. In case of accidental touch, repeat the skin disinfection as above.
 - Anchor the vein by holding your thumb below the puncture site.
 - Ask the patient to make a fist so as to make the veins prominent.
 - Insert the needle (vacutainer or syringe needle) into the vein, bevel side up, at an angle of about 30° and advance the needle into the vein.
 - Collect 5 mL of blood (into the syringe or into tubes) and aliquot 2 ml in EDTA (purple top) and 3 ml in SSGT (Yellow top) for serum separation.
 - Release the tourniquet.
 - Withdraw the needle gently and apply a piece of sterile gauze to the puncture site
 - Ask the patient to gently press down on the gauze on the puncture site, keeping the arm folded
 - If a syringe and needle were used for collection, transfer the blood inside the tube by piercing the stopper of the tubes placed firmly on a rack.
 - Invert EDTA tubes gently 4-5 times to ensure proper mixing of the additives Keep the tubes in an upright position in the stand.

- Discard the syringe and needle into the sharp's container
- Surface decontaminate the SSGT and the EDTA tube using 2% Lysol or 0.5-1% Sodium hypochlorite wipes

• **Urine sample collection in the screw-capped sterile urine container:** ▪ Explain the procedure to the patient

- Provide privacy to the patient
- First, ask the patient to wipe/clean the genitals

Ask the patient to urinate a small amount into the toilet bowl and then stop the urine flow.

- Then collect a sample of urine into the clean or sterile container provided
- Ask the patient to collect about 3 to 5 mL of midstream urine sample into the collection tube provided, taking care not to contaminate the outside of the container
- Ask the patient to finish urinating into the toilet bowl
- Close the lid carefully and keep the container standing position
- Surface decontaminate the SSGT and the EDTA tube using 2% Lysol or 0.5-1% Sodium hypochlorite wipes
- Explain the procedure to the patient
- Sanitize the skin covered with lesion with 80% alcohol wipes to start the collection
- Remove the lesion roof using a sterile scalpel or plastic scrapper Place the roof in the screw cap plain tube.
- Similarly, use a 1ml intradermal syringe to collect the pustule/ vesicular fluids from multiple lesions and collect in a fresh screw cap plain tube

- Use the polystyrene swab to collect the scrapings from the base of the lesions by gentle scraping and put it in a fresh screw cap plain tube
 - The scab/crust, if formed using a polystyrene swab, should also be collected in a fresh screw cap plain tube
 - Keep the samples immediately in +4 degrees Celsius as soon as they are collected
 - After collection of samples, appropriately labelled sample tubes need to be sealed with parafilm
 - Centrifuge the serum tube before shipment
 - Tubes need to be wrapped with the absorbent tissue paper/cotton and placed in Ziplock bags/Secondary receptacles
 - Samples should be transported in dry ice as per the instruction provided in Annexure3 (adapted from the WHO Guidance on regulations for the transport of
- Lesion roof, base scrapping, fluid and crust/scab collection [collect from multiple sites]:

Procedures for the transport of the clinical specimens:

infectious substances 2021-2022) along with the case record form provided with this document.

ANNEXURE 3: INSTRUCTIONS ON SAMPLE PACKAGING AND TRANSPORT

This is just a visual representation. Use appropriate PPE and collection tubes as described earlier in this document

STEP 1: ARRANGING THE SAMPLE VIALS

A	B	C
 *Wear a full set of appropriate Personal Protective Equipment and identify the labelled sample tubes	 *Seal the neck of the sample vials using parafilm to prevent leakage during transit.	 Cover the sample vials using absorbent material to contain leakage in case of breakage.

STEP 2: ARRANGING THE PRIMARY VIALS WITHIN A STURDY, LEAK-PROOF SECONDARY CONTAINER

A



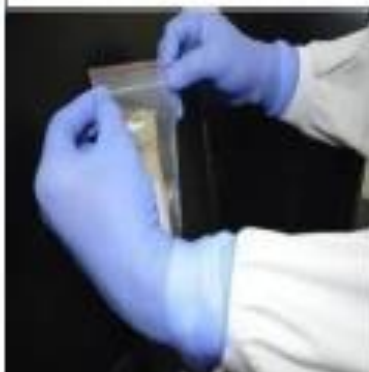
B



Option 1: Using a cryo-box as a secondary container. (Seal the lid of the box after arranging the samples, using cello.)

Option 2: Using a 50-mL centrifuge tube as a secondary container. (Seal the neck of the tube using a cello.)

C



Placing the centrifuge tube inside a zip-lock pouch

D



Placing the zip-lock pouch inside a sturdy plastic container. (Seal the neck of the container using cello.)

[Note: Sample vials can also be placed inside a zip-lock pouch, covered in absorbent material and secured by heat-sealing or rubber bands. Then, the zip-lock pouch should be placed inside another plastic pouch and secured.]

STEP 3: ARRANGING THE OUTER CONTAINER

A 	B 	C 
Option 1: Using a thermocol box as an outer container and placing the secondary container within it, surrounded by hard-frozen gel packs	Option 2: Using a hard-board box as an outer container and placing the secondary container and the gel packs	Placing the completed Case Report Form/Request Form inside a leak-proof, zip-locked pouch
D 	E 	Documents to accompany: Packing list/Proforma Invoice Air waybill (for air transport) (to be prepared by sender or shipper) Value equivalence document (for road/rail/sea transport)

Securing the zip-lock pouch with the Case Report Form on the outer container	Attaching the Labels: Sender's Address and contact number; Consignee's Address and contact number; Emergency Contact's name and number	

****Filled sample referral form to be kept in a plastic cover should be taped to the outer surface of the thermocol box while transporting the sample.**

ANNEXURE 4 -Advisory for International passengers

Travellers should AVOID close contact with sick people, including those with skin lesions or genital lesions.

Contact with dead or live wild animals such as small mammals, including rodents (rats, squirrels) and non-human primates (monkeys, apes).

Eating or preparing meat from wild game (bushmeat) or using products derived from wild animals from Africa (creams, lotions, powders).

Contact with contaminated materials used by sick people (such as clothing, bedding, or materials used in healthcare settings) or that came into contact with infected animals.

Consult the nearest health facility if you develop symptoms suggestive of Monkey pox like fever with rash & you were in an area where Monkey pox has been reported to have had contact with a person who might have had Monkey pox.

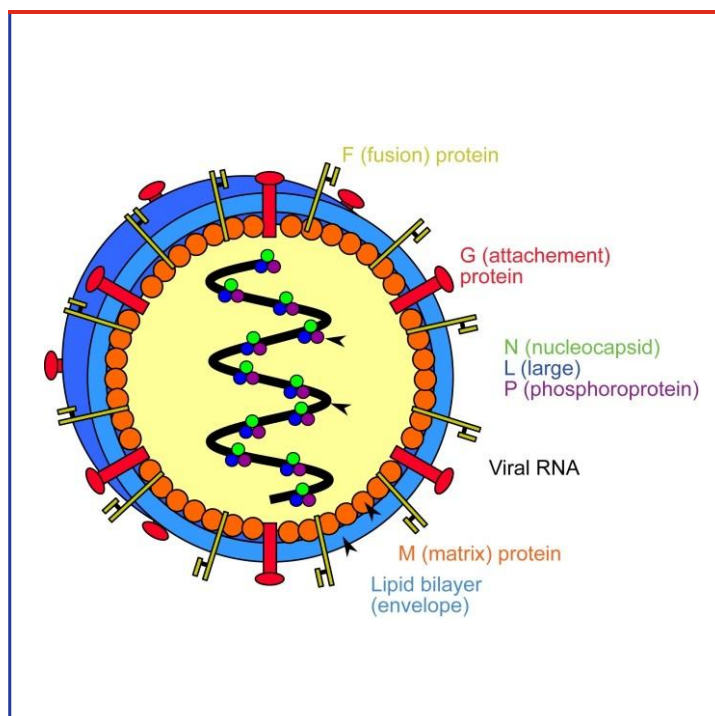
Role of APHOs/PHOs:

Remain in a state of alert, particularly for the passengers arriving from countries reporting monkey pox outbreaks; familiarize with clinical presentation of Monkey pox; undertake strict thermal screening and record history of travel to affected countries in the last 21 days; establish/strengthen referral arrangements from airport/sea port to identified link hospital.

Also, familiarize Bureau of Immigration personnel, airline personnel and any State health personnel deployed with them about the disease; inform concerned airlines about the detection of a suspect case for the purpose of disinfection procedure to be followed as per the standard guidelines.

NIPAH Virus Infection

Guidelines for Surveillance, Diagnosis, Treatment, Prevention and Control



DEPARTMENT OF HEALTH AND FAMILY WELFARE
GOVERNMENT OF KERALA

Index

Message by Honourable Health Minister	5
Foreword	7
Chapter 1. Epidemiology, burden of disease, transmission	9
1.1 Epidemiology	9
1.2 Burden of disease	9
1.3 Modes of Transmission	10
Chapter 2. Diagnosis	11
2.1 Definitions - Case & Contact	12
2.2 Clinical features	12
2.3 Laboratory diagnosis	12
2.3.1 Investigations to be done for confirmation of diagnosis	12
2.3.2 Sample collection and transport and testing guidelines	12
2.3.3 Disposal of supplies/waste	14
2.3.4 Point of care testing	14
2.3.5 Other Investigations for patient management	14
2.3.6 Surveillance	16
Chapter 3. Management of Nipah virus infection	17
3.1 Triageing of patients	17
3.2 Setting up an isolation facility	18
3.3 Treatment	18
3.3.1 Supportive measures	18
3.3.2 Drug treatment options	19
3.3.2.1 Ribavirin	20
3.3.2.2 Monoclonal antibody m102.4	
3.3.3 Standard care for Encephalitis, Myocarditis and ARDS	21
3.3.4 Other therapeutic options	22
3.3.5: Psychosocial interventions	22
3. 4 Criteria for discharge and follow up	22

Message



I am very happy to see that the Department of Health and Family Welfare has published a book on Guidelines to contain outbreak of Nipah. During the first outbreak, there was limited knowledge available regarding various aspects, especially related to actions at the grassroots, but the health system responded very well and contained the outbreak and gained experience. At the time of second outbreak, again the health department along with district administration launched coordinated actions and contained the epidemic.

I am happy to note that the Department constituted a resource group and worked on various aspects of outbreak and drafted the guidelines to tackle NIPAH outbreak. I take this opportunity to congratulate all field functionaries who have shown their commitment and courage to tackle NIPAH outbreak and all officers who have contributed in drafting the guidelines book.

I am confident that such standard operation practice manual will build capacities of all health and other functionaries. It is worth mentioning that a chapter on mock drill is added in the book, which will equip all functionaries with knowledge and build capacities to tackle any future virus outbreak. The framework to build the campaign will be handy for all to plan interventions and execute actions to contain the outbreaks.

I wish all the success.

K K Shailaja Teacher
Minister for Health & Family Welfare
Social Justice, Woman and Child Development

Foreword

Kerala successively experienced back-to-back two outbreaks of NIPAH. The second outbreak on 3rd June 2019 has made to think of having a systematic approach to deal with any virus outbreaks in future. The first outbreak has taught some lessons and the second accentuated the need of developing the system and processes.

During the second outbreak, the health administration and district administration have coordinated the actions over a period of time. Soon after the detection of the index case, surveillance activities, contact tracing, quarantine, isolation, treatment related follow ups, testing, etc was done. The constitution of the Medical Board, treatment protocol, compassionate use of monoclonal antibody protocol, point of care testing, etc was developed. Later, with the coordinated efforts the outbreak got controlled. The index case got cured and there was no spread to others including family members of the patient.

During the second outbreak, as we were dealing with the situation, we went on building structures and processes. Eg Expert group to decide on use of Monoclonal Antibodies, development of treatment protocol, Institutional Medical Board to decide the next actions for management of the index case, various committees of line departments with specific roles and responsibilities and method of their functioning. The administration has to take care of other aspects such as ensuring the samples are sent to authorized laboratories through well-structured processes and accountability. As it is a biohazard material added additional burden of identifying the authorized officers from various institutions and permitting them to participate in various discussions and the field visits. All these activities needed spot decisions and some method to deal with them. These aspects highlighted to have a detailed 'blue print' of structures and processes for taking various activities to tackle the future outbreaks.

Learning from this experience, it was decided to constitute a resource group of senior faculties of Prevention of Epidemic and Infectious Disease Cell and others departments including a few officers from the field to discuss various aspects related to viral disease outbreak to focus at institutional level and field level activities. At Government level and individual institution level, series of meetings were conducted. A team of senior faculties and the field officers worked on the preparing the guidelines. The objective of this booklet is to have a concise information available for all to plan activities well in time, assist in

capacity building and launch a well-coordinated campaign in case of Nipah outbreak.

This book also covers the framework for the 'mock drill' concept. This concept was discussed in the meeting of PEID Cell on 8th May 2019. It was discussed that countries like Japan and Israel conduct the mock drill regularly to ensure preparedness. It was decided to develop a mock drill guideline. Later discussions were conducted involving World Health Organization experts. The resource group worked on the same to have a system of 'mock drill' to do assessment of preparedness of health system and overall administration. This is a noteworthy aspect which shows the advance thinking to handle any exigency.

The book also gives information on building a campaign. At the time of formulating the plan, it was discussed whether we should say 'No Nipah campaign'. It was intentionally done in order to infuse seriousness regarding the prevention focus to control such a dreaded virus outbreak.

During these discussions the Department had taken a decision to equip themselves to tackle any viral outbreak and in September 2019 procurement orders for Personal Protection Equipment were placed with the companies by doing transparent bidding. This has proved the best intervention as few months down the line, the whole world landed in COVID pandemic from January 2020.

It was decided to publish this book after the 'mock drill', along with mock drill output in January 2020. But, as we all know, from January 2020 onward the whole world started grappling with COVID pandemic, that has caused delays in publishing this book. However, the experience of handling NIPAH second outbreak has assisted Kerala Health to tackle COVID from the day one in a coordinated way without wasting a minute!

It is decided to do annual review of the guidelines and publish updated version in the web portal of the department. We appreciate the contribution of all experts and field officers. We look forward to their continued support. We solicit the suggestions from all experts in the field

Dr Rajan Khobragade
Principal Secretary
Department of Health and Family Welfare
Government of Kerala

Chapter 1. Epidemiology, burden of disease, transmission

Introduction:

Nipah Virus (NiV) Infection is recognized as a deadly infection in 1998 but came to a better attention in Kerala with the outbreak in 2018 and 2019. In this chapter we are trying to look very briefly about the NiV, the transmission, epidemiological aspects and the magnitude of the disease burden. This will help us to plan strategies for preparedness, early detection and timely management and appropriate interventions to tackle the situation on an urgent basis.

1.1 Epidemiology

- **Agent: Nipah Virus (NiV)** is a highly pathogenic RNA virus belonging to the *Paramyxoviridae* family and grouped under the genus *Henipavirus*. *Two NiV clades have been proposed so far; B genotype in Bangladesh, and M genotype in Malaysia*. The complete NiV genome of the Kerala strain had 85.14%–96.15% similarity with M and B NiV genotype.
- **Natural Reservoir:** Large fruit bats of *Pteropus* genus are the natural reservoir of NiV. Pigs are identified as intermediate hosts. In a study conducted during this outbreak 2018, the high positivity of NiV was detected in bat throat swabs, and showed persistence of virus for a couple of hours on contaminated fruits, which enhance the chances of human infection. NiV positivity was identified in bats from North Eastern Region states and Kerala.
- **Seasonality** was strongly implicated in NiV outbreaks in Bangladesh and India. All of the outbreaks occurred during the months of December to May.
- **Incubation period:** varies from 4-14 days.

1.2 Burden of disease: In the 1998 to 1999 Malaysian outbreak, human infection occurred from infected bats through infected pigs as intermediate animal host by direct contact with respiratory secretions and urine from infected pigs. In Bangladesh and India the transmission happened from bat to human and later from human to human. So far two outbreaks are reported from Kerala. From Kozhikode in 2018 and Kochi in 2019. The outbreak reported from Kerala in May 2018, there were one index patient, 18 confirmed and 4 probable cases. Two confirmed patients survived

in that outbreak. In Kochi, May 2019 one patient was confirmed of Nipah but no further spread was identified. India comes within the Nipah virus distribution map and there is a risk of spill over and transmission to humans. The delay in diagnosis will increase the chance of spread to humans through the risk of increased human to human spread. The knowledge about the ecology of bats and NiV and the seasonality of the disease is important in prevention of future outbreaks.

1.3 Mode of Transmission:

Human infection results from spillover transmission from bats or through human-to-human transmission. Direct bat-to-human transmission occur through fruits contaminated by bat's secretions - urine or saliva- or consumption of raw date palm sap [*tari*] contaminated by bat saliva. In the Malaysian outbreak, human infection occurred through contact with respiratory secretions and urine from infected pigs, which got infected after consumption of partially bat eaten fruits, dropped in pigsty. The infection got controlled once the cause of infection was identified and health education, barrier precautions were advised to people handling the pigs and pig culling operations were conducted. Unlike Malaysia and Singapore, the outbreaks in Bangladesh and India pigs were not identified as intermediate hosts and transmission was from bat to human and human to human. In the 2014 Philippines outbreak, infected horses were identified as the intermediate hosts.

Clustering of symptomatic cases mainly adults among close contacts and households is an important clinical clue to this infection. In 2018 Kerala outbreak, all cases except the index case the transmission was from human to human.

Chapter 2. Diagnosis and Surveillance

Introduction

Early identification and diagnosis is of prime importance in NiV infection. The case management includes strategic plans to prevent spread through contacts and this requires proper triaging and isolation. Understanding definition of cases and contacts becomes very important here.

2.1 Definitions - Case and Contact

1. Case Definitions

a. Suspect Nipah Case

Person from an area/ locality affected by a Nipah virus disease outbreak who has:

- Acute Fever with new onset of altered mental status or seizure and/or
- Acute Fever with severe headache and/or
- Acute Fever with Cough or shortness of breath

b. Probable Nipah case

- Suspect case-patient/s who resided in the same village where suspect/confirmed case of NIPAH were living during the outbreak period and who died before complete diagnostic specimens could be collected

OR

- Suspect case-patients who came in direct contact with confirmed case-patients in a hospital setting during the outbreak period and who died before complete diagnostic specimens could be collected.

c. Confirmed Nipah Case

Suspected case who has laboratory confirmation of Nipah virus infection either by:

- Nipah virus RNA identified by PCR from throat swab, urine, serum or cerebrospinal fluid (optional).
- Isolation of Nipah virus from throat swab, urine, serum or cerebrospinal fluid.

d. Definition of a contact:

A Close contact is defined as a patient or a person who came in contact with a Nipah case (confirmed or probable cases) in at least one of the following ways.

- Was admitted simultaneously in a hospital ward/ shared room with a suspect/confirmed case of Nipah virus disease
- Has had direct close contact with the suspect/confirmed case of Nipah virus disease during the illness including during transportation.
- Has had direct close contact with the (deceased) suspect/confirmed case of Nipah virus disease at a funeral or during burial preparation rituals
- Has touched the blood or body fluids (saliva, urine, vomitus etc.) of a suspect/confirmed case of Nipah virus disease during their illness
- Has touched the clothes or linens of a suspect/confirmed case of Nipah virus disease

These contacts need to be followed up for appearance of symptoms of NiV for the longest incubation period (21 days). They must be transported to appropriate care facility if they develop symptoms with proper infection control practices.

2.2 Clinical features

- Fever, Altered mental status, Severe fatigue, Headache, Respiratory distress, Cough, Vomiting, Muscle pain, Convulsion, Diarrhoea
- In infected people, Nipah virus causes severe illness characterized by inflammation of the brain (encephalitis) or respiratory diseases.
- The syndromic presentations are ARDS, Myocarditis and Encephalitis. Patients can present with fever alone. All patients coming with fever with any other symptom having an epidemiological link and history of contact must be treated as NiV infection and must be tested for the NiV infection.
- In general, the case–fatality rate is estimated at 40–75%; however, this rate can vary by outbreak and can be upto 100%.

2.3 Laboratory diagnosis

2.3.1 Investigations to be done for confirmation of diagnosis

Real-Time RT-PCR Viral RNA

anti-NiV IgM and IgG antibodies by enzyme-linked immunosorbent assay

2.3.2 Sample collection and transport and testing guidelines

Laboratory confirmation of a suspect and also a symptomatic with definite history of contact case can be made during the acute and

convalescent phases of the disease by using a combination of tests. The samples have to be sent to designated laboratories identified as per protocols prepared.

Sample Collection and Transport Guidelines:

Universal, standard droplet and bio-containment precautions should be followed during contact with excretions, secretions and body fluids of suspected patient for Nipah virus. Adequate bio-safety precautions should be adopted during collection/transport/ storage/ processing of suspected sample.

Sample collection:

The samples should be collected in all patients (suspect or symptomatic with contact with Nipah) as early as possible with all bio-safety precautions and documenting the clinical details on the proforma (provided from the testing laboratory).

Sample collection should be done only AFTER ADMISSION into an isolation facility, and ensuring that the staff member doing the collection is following proper infection control practices.

During sample collection wear complete disposable Personal Protective Equipments (N 95 mask, double surgical gloves, gowns, goggles foot cover, etc). Wash hands with soap and water at least for 30 seconds and then clean hand using alcohol based hand sanitizer before and after collection of samples.

The recommended samples are

- Throat swab in viral transport medium
- Urine 5 ml in universal sterile container
- Blood in red vacutainer (5ml)
- CSF (1-2 ml) in sterile container

Transportation and Storage of samples:

- Samples should be safely packed in triple container packing and should be transported securely under cold chain (2-8°C) to the testing laboratory with prior intimation.
- Sample containing vials, tightly closed, should be kept in good quality zip-lock bags wrapped with sufficient absorbent cotton padding so that inside material should not come out of bag if it leaks. The plastic bag should be kept in another Zip-lock bag similarly, which should be sealed with adhesive tape. This carrier

should be placed in a hard container sealed with impermeable tape or plaster and placed in thermocol box /vaccine carrier containing ice packs. The case sheets with complete information should be placed in plastic bag and should be pasted **outside the container**.

- Samples should be transported at 2-8°C to the have to be sent to NIV Pune, NIV field station, Alappuzha or as per the testing protocols.

2.3.3 Disposal of supplies/waste:

The proper disposal of biomedical waste is a challenge in such type of infections. Must be done adhering to strict infection control practices to ensure safety of all personnel involved. This has to be supervised and properly co-ordinated by the hospital infection control committee.

2.3.4 Point of care testing (POC):

Early diagnosis was a challenge for appropriate prompt management in outbreak 2018. High containment laboratory facility for quick diagnosis was identified as a need for the same. In Government Medical College, Ernakulam during 2019 outbreak a POC micro PCR assay for NiV detection and ELISA testing facility could be started with technical support from NIV, Pune. If such facilities are available, it must be utilized. The facility for screening dengue, Japanese encephalitis and West Nile virus infection in all NiV negative cases will help to narrow down the diagnostic possibilities in seriously ill patients. This will help to incorporate appropriate modifications in the management

2.3.5 Other Investigations for patient management

NiV infection is similar to any other viral infection and it is a clinical challenge to diagnose it early and to ensure all safety measures and infection control practices to prevent human to human transmission. Nipah virus is classified as a biosafety level 4 pathogen. The laboratory should be informed if a clinical suspicion is made and the facilities must be the same for all other investigations done for the patient considering its high pathogenicity in humans. All treatable cases like bacterial infections, malaria and herpes encephalitis must be included in the differentials depending on the clinical presentation. Tests must be ordered appropriately.

2.3.6 Surveillance

Case identification and Contact tracing:

These contacts need to be followed up for appearance of symptoms of NiV for the longest incubation period (21 days). They must be transported to appropriate care facility if they develop symptoms with proper infection control practices.

Risk Stratification of Contacts

RISK CATEGORY	DESCRIPTION
High risk	1. Any contact with body fluids (blood, urine, saliva etc) of a confirmed case of Nipah 2. Any contact with body fluids of a probable case who died without a lab confirmation of Nipah 3. Spend time in close proximity or in closed space for more than or equal to 12 hrs
Low risk	Any other contact such as touching, contact with clothes or linen or any other item used

Follow-up Action

RISK CATEGORY	Follow-up Action
High risk	Asymptomatic- Home quarantine with active follow up for fever, by health workers using telephone, twice a day for 21 days Symptomatic (fever)- Immediate admission in designated isolation ward with ICU facility
Low risk	Asymptomatic- Home quarantine and follow up for fever by telephone. Symptomatic (fever)- Immediate admission in designated isolation facility

Format for Contact Tracing

S l. No	N a m e o f t h e C a s e	N a m e o f t h e C o n t a c t	A g e	Se x (M /F/ T G)	O cc u p a t i o n	A d d r e s s	W a r d N o .	Panch ayath/ Munici pality/C orporat ion	D i s t r i c t	P h . N o .	Da te of las t co n t a c t w i t h t e c a s e (D D/ M M/ YY YY)	Pl ac e of co n t a c t w i t h t e c a s e [E g; Ro om no. 3 Me dic ine op d, As hw ini ho spi tal, thri ss ur	C o n t a c t w i t h t e c a s e [E g; Ro om no. 3 Me dic ine op d, As hw ini ho spi tal, thri ss ur	T o o n t a c t w i t h t e c a s e [E g; Ro om no. 3 Me dic ine op d, As hw ini ho spi tal, thri ss ur	Con t a c t w i t h a n y t h i n g u s e d b y t h e c a s e [e g; clo thes ,ut ens il s,t rol le y,b ede tc](Y /N). If yes, plea se spe cify	Spe nt tim e w i t h t e c a s e i n t h e s a m e ro o m/v ehi cle/ clo sed spa ce (Y/ N). If yes , plea se spe cify	Ti m e sp en t w i t h t e c a s e (Pl ea se spe ci fy in mi nu tes /h ou rs)	Ty pe of co n t a c t 1. H ou se ho ld co n t a c t 2. H os pi tal co n t a c t 3. C o m m u ni ty co n t a c t	N a m e & P h o n e n o o f t h e p er s o n w h o c o l l e c t e d t h e i n fo r m a t i o n

Chapter 3. Management of Nipah virus infection

Introduction:

NiV infection is different from other viral infections or pathogens because of its potential of transmission from human to humans with high mortality and no definite treatment or vaccine so far identified. So the management essentially involves infection control practices and triaging, isolation and management of patients including intensive supportive care. The Emergency Department must be strengthened for early identification, proper isolation and management of patients suspected of NiV infection to minimize the risk of human to human transmission.

To manage the fever triage and isolation facility, a separate team should be trained and appropriately delegated for its implementation. The team should include health care providers as a single unit. The senior cadre nurses must be responsible for maintaining the overall co-ordination, in charge of movement and sick registers of the health care providers, ensuring the proper donning and doffing, auditing of the appropriateness of training of the health care providers, ensuring of all supplies including drugs, disposables and consumables, food and other supplies for patients in the isolation unit etc. The area must be strictly restricted to the purpose and clearly demarcated. Collection and transportation of samples must be documented and reports must be properly collected. The preparation and handling must be done as per protocols in designated area and with appropriate co-ordination.

The important points in management are discussed in detail below.

3.1 Triaging of patients

- **All patients having fever must report to Fever triage from where they will be sent to the isolation facility**
- Ensure strict adherence to proper Triaging
- **Proper infection control practices must be followed up.**
- Ensure personal safety. Wear apron and gloves as appropriate.
- General measures – ABCDE approach (Airway, Breathing, Circulation, Disability, Exposure)
- Plan for appropriate care including intensive supportive care

The most important step in patient care is intensive supportive care.

3.2 Setting up an isolation facility

Who should be kept in isolation facility/ward/ICU

- History of close contact with confirmed case presenting with fever or any symptoms suggestive of Nipah infection (*vide* clinical features)
- Health care provider who has come in contact with the patient with fever / severe headache/ altered sensorium/ breathlessness/ cough
- Patients with high clinical suspicion – Encephalitis/ARDS/Myocarditis during an outbreak

Isolation facility

- Enter all the details of HCWs entering the isolation facility in the Register for ensuring appropriate follow up
- Only HCWs trained in infection control practices should be posted in the isolation facility.
- Monitor staff health, sick people should not be allowed at work.
- They must report immediately through the contact numbers provided if they develop any health related problems during the period and up to another 21 days after the last day of duty
- Infection control practices should be strictly adhered and audited
- Proper instructions should be followed while entering the room
- The entry of the health care provider should be through Donning area, and then to the triage or treatment area. The exit should be separate for the health care provider and there should be facility for doffing and appropriate facility for hand washing / bathing.
- Patient entry and shifting should be separately marked.
- The deceased should be handled separately as per protocols.
- Single room with attached toilet facility must be provided for each patient.
- Separate equipments (BP apparatus, Stethoscope, Thermometer, Pulse oximeter) for each room and use only disposable consumables to be used.

3.3 Treatment

3.3.1 Supportive measures including Standard care of ARDS, Myocarditis and Encephalitis

Standard care must be provided as in any other infection presenting with Encephalitis, ARDS, and or Myocarditis.

Care should be individualized according to the clinical

presentation and management decisions of the treating clinician.

The basic supportive measures are outlined below:

- a. Isolation of patient in the isolation facility ☐
- b. Use of PPEs ☐
- c. Hand washing with soap & water before and after handling/visiting patients ☐
- d. Resuscitation (if needed): ABC : ☐ Airway, ☐ Breathing , Circulation ☐
- e. Care of unconscious patient: change of posture, care of eye, bladder, bowel and mouth ☐
- f. O₂ inhalation if there is respiratory difficulty ☐
- g. Nutritional support: oral/NG tube feeding according to the condition of the patient ☐
- h. Maintain fluid and electrolyte balance (Adults: 5% DNS, Children: 5% DNS, half or ☐ quarter strength saline) ☐
- i. Fluid restriction: 30% restriction particularly in children. 2/3 of the daily maintenance ☐ can be given in children if the child is not in shock ☐
- j. Maintain intake output chart ☐
- k. Bronchodilators when needed may be given through spacers

3.3.2 Drug Treatment options

No approved drugs or vaccines are currently available. There is an unmet need for newer therapeutic options for NiV infection. In diseases like NiV infection, any new drug can be tried only during an outbreak situation and that too strictly adhering to the clinical trial protocol. Hence preparedness is a priority for any future outbreak as the need occur as an emergency. Nipah clinical research facility needs to be adhering to infection control practices, isolation facility, trained clinical and laboratory team and patient and family support for timely information and consenting.

Currently the available treatment options are very limited.

3.3.2.1 Ribavirin

Ribavirin, a nucleoside analogue with broad activity against several RNA and some DNA viruses. Used in Malaysian outbreak in an open label trial with 36% reduction in mortality, but further studies in animal models proved ineffective.

In the Kerala outbreak 2018, the drug was started in 10 patients, both the survivors have received full course of treatment. The dose used was 2 g stat, 1 g 6 hourly 4 days followed by 500mg 6 hourly for 5 days (based on WHO guideline for other haemorrhagic fevers) on confirmation of NiV infection. (Available as 200 mg capsules – Day 1- 10 capsules stat, then 5 capsules of 200 mg 6 hourly for first four days followed by 200 mg capsules 3-2-3-2 for 5th to 10th day –

total of 150 capsules). No major side effects reported with Ribavirin. In Kerala outbreak 2019, the one patient with confirmed NiV infection had received Ribavirin but started only on confirmation by 9th day of illness.

Adverse effects of Ribavirin: Rare if used for short term. The Major adverse effects on long term treatment are hypersensitivity, hemolytic anemia, significant teratogenic and/or embryocidal effects in animal studies, bone marrow suppression. The complete haemogram and LFT need to be monitored. Patients received Ribavirin must be counselled about the teratogenicity as it may persist in non-plasma compartments for as long as 6 months. Hence effective contraception must be utilized upto 6-months after the drug use.

3.3.2.2 Monoclonal antibody m102.4

M102.4 recognizes the G envelope protein of NiV and appears to block the receptor binding site on the protein preventing adhesion to the Ephrin B2 protein and thereby inhibiting viral entry into the host cell.

During the NiV outbreak in Kozhikode, Kerala in 2018 the m102.4 monoclonal antibody, an experimental therapeutic, was imported for treatment of NiV infected patients on compassionate ground. The SOP (Standard Operating Procedures) and protocols were prepared with the support from ICMR. But it was not used as the outbreak was ended by that time. In Kochi 2019 outbreak as there were no new confirmed cases and the patient was towards the recovery phase when the NiV infection was confirmed, the drug was not used. The protocols, the drug, facility and trainings were started in anticipation. The m102.4 monoclonal antibody is an investigational drug and requires Emergency Research Response

& Resources for using such an investigational drug. This becomes a high priority area because of the high mortality of this infection. The indications and guidelines for use of m102.4 is prepared and to be used with appropriate knowledge and training of the research team as in any other clinical trials with Ethics committee approvals and consenting process. The protocols and SOPs must be referred in detail in this regard and to be modified appropriately according to the then available scientific knowledge.

3.3.3. Standard care for Encephalitis, Myocarditis and ARDS

a. Standard care for encephalitis

Patients with increased intracranial pressure

- Management of fever, pain, control of cough and other strains.
Manage Fever, pain with paracetamol, avoid NSAIDs
- Prevention of seizures
- Control of systemic hypertension
- Elevate head above the heart (usually 30 degrees)
- Furosemide 0.5 to 1.0 mg/kg IV and / or mannitol 1 g/Kg IV over 30-60 minutes, Repeat dosing can be given as needed, generally every eight hours—provided circulatory volume is protected
- IV Sedation and mechanical ventilation

Seizures

- Lorazepam 4 mg IV or
- Phenytoin 100mg IV q6-8h or
- Fosphenytoin 150PE q8h IV or
- Levetiracetam 500mg q8-12h IV

b. Standard care for myocarditis

Supportive therapy for symptoms of acute heart failure with use of diuretics, nitroprusside, ACE inhibitors.

- Inotropes- Dobutamine- 2–5 micrograms/kg/ min, titrated up to 20 micrograms/kg/min- Inotrope and potential vasodilator; lowers blood pressure; give as individual agent as long as systolic blood pressure (SBP) ≥ 90 . Can use with dopamine.
- Dopamine-3–5-micrograms/kg/ min, titrated up to 20micrograms/kg/ min as needed-Inotrope and vasoconstrictor; increases left ventricular end-diastolic

pressure and causes tachycardia. Can be used with dobutamine.

- Norepinephrine-2 - 50 micrograms/min (0.02 - 2 micrograms/kg/minute) titrate to response-Vasoconstrictor and inotrope; preferred as a single agent over dobutamine if SBP <70. Can use combined with dobutamine.

c. Standard of care for ARDS

- For mild ARDS, non invasive ventilation stands as the first-line approach.
- Patients who have a diminished level of consciousness, vomiting, upper GI bleed, or other conditions that increase aspiration risk are not candidates for NIPPV.
- Other relative contraindications include hemodynamic instability, agitation, and inability to obtain good mask fit
- Severe ARDS is often associated with refractory hypoxemia, and early identification and treatment of hypoxemia is mandatory.
- For mechanical ventilation specific settings are recommended: limitation of tidal volume (6 ml/kg predicted body weight), adequate high PEEP, a recruitment manoeuvre in special situations, and a 'balanced' respiratory rate (20-30/min) for appropriate baseline minute ventilation. Consider the use of incremental FiO₂/PEEP combinations to achieve oxygenation goal (PaO₂ 55-80 mm Hg or SpO₂ 88-95 %)

3.3.4 Other therapeutic options

No approved drug so far. As NiV is an infection with definite potential for human-to-human transmission and high mortality we must be ready to accept newer therapeutic options in any future outbreaks. The preparedness for research well in advance of the outbreak is the priority in this infection.

3.3.5: Psychosocial interventions: For the patient, for those contacts kept in isolation facility for testing, family members and community contacts must be planned and administered.

3.4 Criteria for discharge and follow up

Criteria for discharge of a patient from isolation facility presented with suspected Nipah and tested negative

1. Tested negative and totally symptom free can be discharged with observation at home for total of 21 days.
2. Tested negative and continue to have fever and other symptoms need a repeat testing after two days to exclude NiV infection and there exist a strong history of contact with NiV infected patient/sample must have repeat testing in every two days till patient becomes symptom free.
3. No need of repeat testing if tested negative on two occasions found negative and an alternate diagnosis is made.

Criteria for discharge of confirmed case

- Clinically stable
- Nipah RT-PCR from all three samples (Throat swab, Urine and blood) reported negative on two occasions at least 5 days apart.
- To be decided by the treating clinician and confirmed by the Medical board

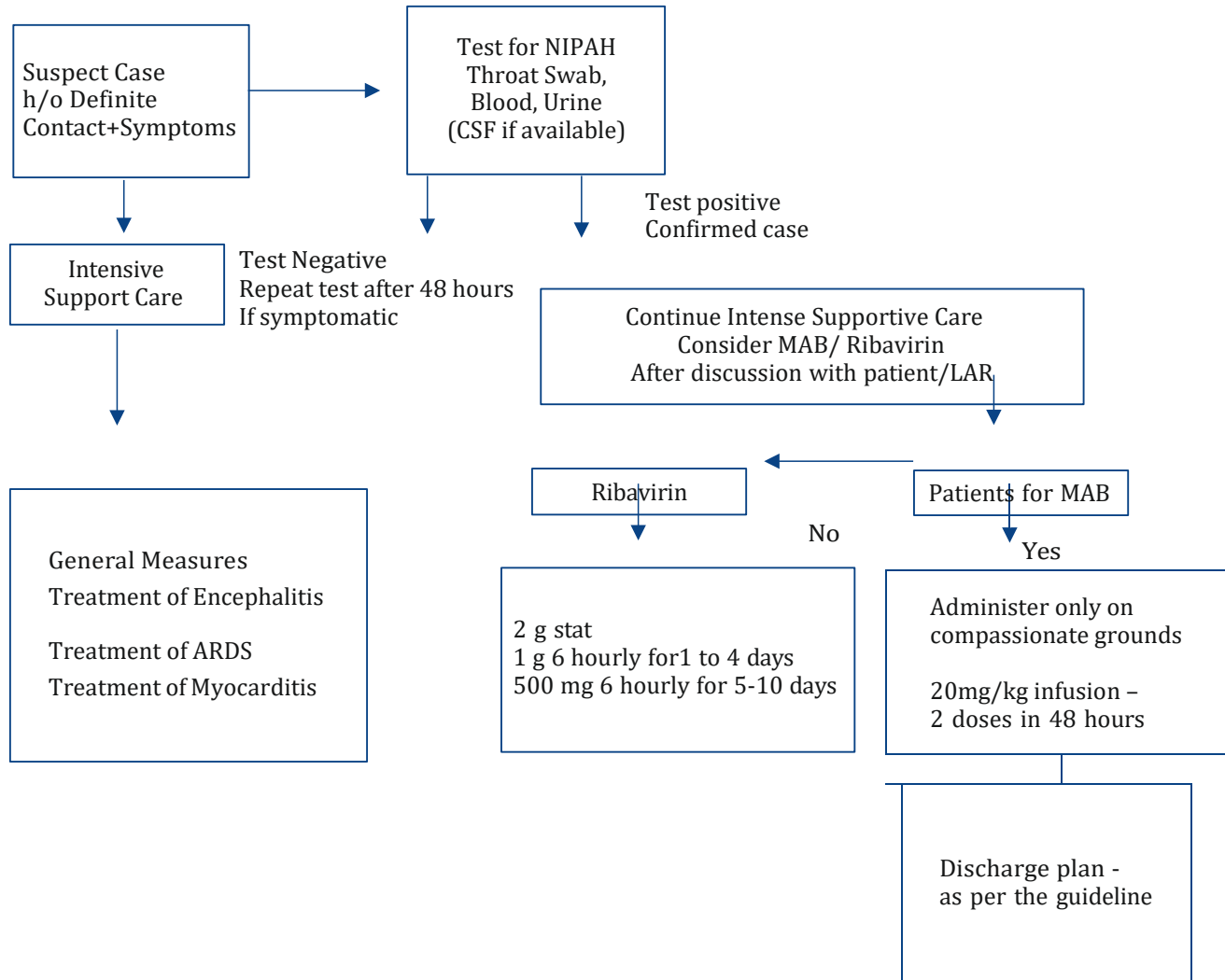
Follow up

The discharged patient should remain in isolation at their residence for 4 weeks after the discharge.

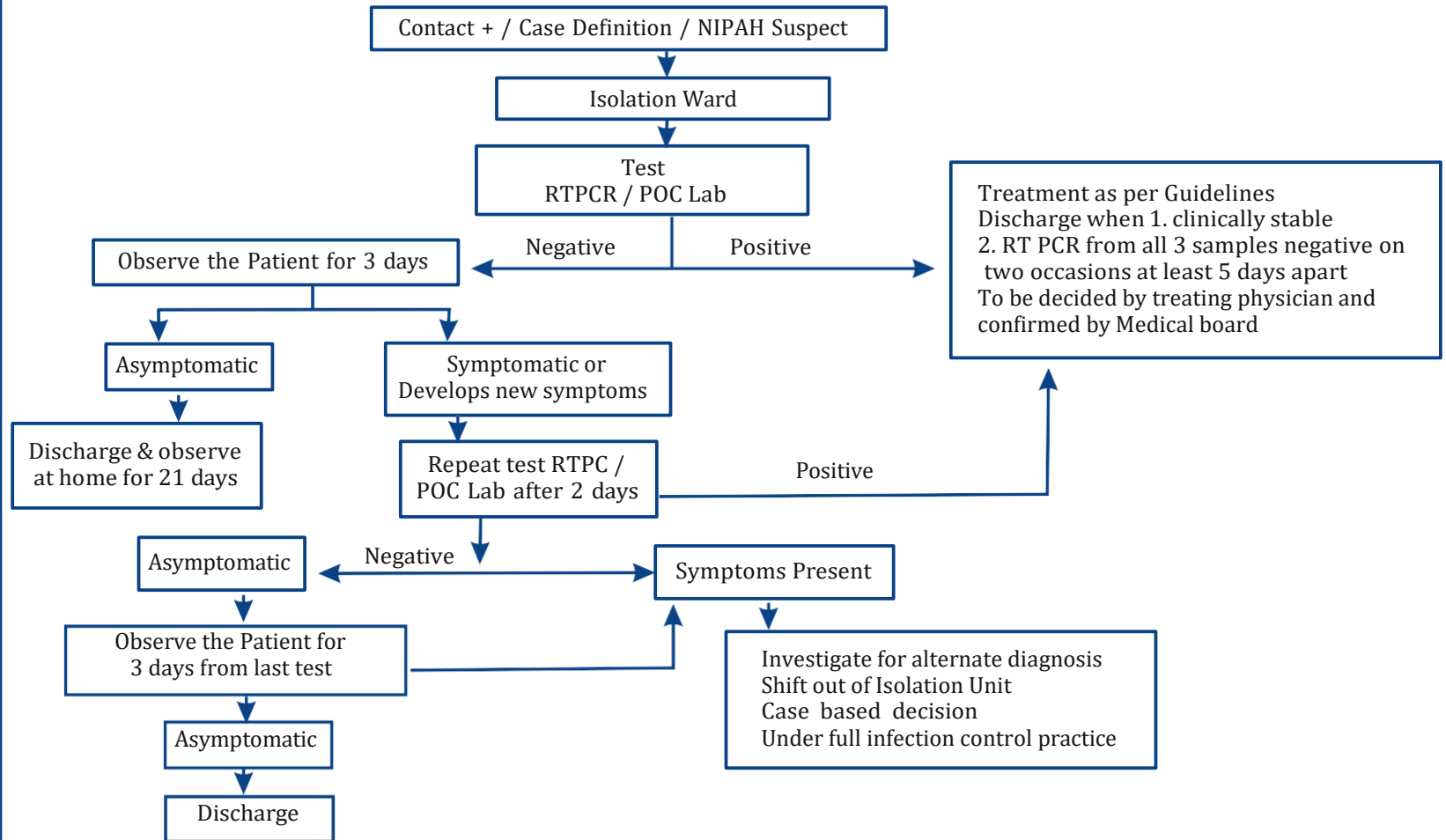
Patient is advised follow up on 28days, 56 days and 90 days of discharge

All patients with confirmed NiV infection should be kept under long term follow up as there were reports of relapse and late onset encephalitis in an earlier series.

TREATMENT ALGORITHM



GUIDELINES FOR DISCHARGE OF PATIENTS



NB: Any amendment to this Guidelines be done only with the concurrence of Medical Board

No Nipah campaign

Background

Nipah virus infection is a deadly zoonotic disease with high rate of human to human transmission. It is an enveloped ribonucleic acid virus, has been a major cause of encephalitis out-breaks with high mortality, primarily in the Indo-Bangladesh regions. 1The name 'Nipah' comes from a Malaysian village, where the first outbreak was reported in 1998-1999. The outbreak subsequently spread to various regions of the country and Singapore in the south due to the movement of infected pigs. Nipah virus caused systemic infections in humans, pigs and other mammals. 2Malaysia, Singapore, Philippines and Bangladesh reported the previous outbreaks.

In India, previous outbreaks of Nipah virus occurred in Siliguri (2001) and Nadia(2007) districts of West Bengal. Kerala faced this epidemic in May 2018. A total of 19 Nipah virus (NiV) cases, including 17 deaths, were reported from Kerala State: 18 of the cases were laboratory-confirmed and the deceased index case was suspected to have NiV but could not be tested. The outbreak was localized to two districts in Kerala State: Kozhikode and Malappuram. – 3Transmission of the infection occurred predominantly in the hospitals. The human to human transmission rate was very high in the Kozhikode outbreak, consistent with rates of NiV outbreaks in India and Bangladesh but different from the rate in Malaysia. Several factors contributed to the high transmission rate in the hospital. They include inadequate barrier infection control measures, lack of hand washing, altruistic behaviour of patient companions, poor regulation of visitors in the hospitals, extended period of waiting for procedures and the movement of index case within the corridor. –4

When Kerala faced an outbreak, there was no previous experience in tackling such health emergencies. Intense measures were initiated by the state with the help of central government health authorities including the National Centre for Disease Control, National Institute of Epidemiology, Indian Council of Medical Research (ICMR), Manipal Institute of Virology and experts from AIIMS, New Delhi. The outbreak drew immense global attention and underlined the need for adequate preparedness in the event of such episodes resurging in the future. 5

In June 2019, one case of Nipah was reported from Ernakulam district. The outbreak control activities led to the containment of the outbreak to just one

case. In this background Government of Kerala has initiated the '**No Nipah campaign**' to prevent further outbreaks in the state.

No Nipah campaign envisages strategies to educate the public regarding the potential sources of infection and modes of transmission and bring behavioural change so as to avoid the first case. It also focusses on strategies to be implemented in the health care system in the perspective of hospital infection control practices. Minimising the human animal interaction which is the vulnerable and key event in acquiring an infection as well as enhancing infection control practices in the community and hospital premises with community participation plays the pivotal role.

Objectives

1. To prevent the occurrence of human cases of Nipah through behaviour change interventions and infection prevention and control practices.
2. To limit the impact, in the event of a Nipah outbreak through prompt response and containment.

Strategies

1. Health literacy campaign to prevent transmission in the community with focus on behaviour change communication.
2. Strengthen infection control practices in the hospitals through training of health care staff and capacity building.
3. Strengthening the surveillance for Nipah virus
 - (a) In tertiary care hospitals through Outbreak Monitoring Units (OMU) attached to PEID (Prevention of epidemic and infectious diseases) cells.

Activation of OMU – Immunocompetent patients presenting with any of the features like severe pneumonia/ ARDS, haemorrhagic rash, severe Gastro enteritis, meningoencephalitis, acute liver failure shall be evaluated and if the cause cannot be ascertained through routine investigations, further evaluation should be done to rule-out tropical fever syndrome is like dengue fever, leptospirosis, scrub typhus, chikungunya, malaria, enteric fever, H1 N1 etc and expected community acquired syndromes. OMU shall be activated if there is history of Zoonotic contact, clustering of cases in the family/locality, travel to forest areas/Outside the state or fever death without a diagnosis in immunocompetent patients. The experts in the OMU shall decide on further laboratory diagnosis, including field

investigation and notification as required.

(b) In primary and secondary hospitals through reporting.

(c) Animal health surveillance.

4. Strengthening the diagnostic and treatment facilities by establishing standard diagnostic, treatment and referral protocols.
5. Enhancing preparedness by improving infrastructure, procurement of logistics, training and conducting Nipah mock drills.
6. Involvement of private sector and inter sectoral coordination.

Activity log

1. Health literacy through behavioural change communication

Target group	By whom	Activity	Frequency
General population	Health care providers and community volunteers JHI JPHN ASHA Anganwadi worker, kudumbasree	Health education sessions Distribution of IEC materials	Monthly-December to June
	Through mass media campaigns	Creation of IEC materials, role plays, drama TV, folklore Newspaper, FM messages, whatsapp messages	December to June
School and college students	Health clubs, with the help of JHI,JPHN	Health education and distribution of IEC materials	December to March
High risk groups			
Hospital staff	Doctors, staff nurses, ICN's	Classes, seminars	Monthly December to June
Occupational high risk groups Fruit vendors, Veterinary staff, hunters, trekkers, wild life enthusiast, toddy collectors, animal/ pet traders, forest guards, tribal population	Field staff, food safety personals,	Health education class and IEC materials	Monthly-December to June

2. Strengthening of infection control

Infection control	Activity	By whom
Individual and community level	Cough and sneeze hygiene Hand washing Personal hygiene Food and Environmental hygiene Quarantine	General public, Individuals with respiratory symptoms, household members, caregivers
Primary level health carecentres	Airborne infection control desk(cough corner) Hand washing Isolation	Patients with respiratory symptoms, Doctors, Staff nurses, lab technicians, pharmacists and other health care providers
Secondary level heath care centres	Airborne infection control desk(cough corner) Hand washing Isolation Early referral Infection prevention and control practices	Patients with respiratory symptoms, Doctors, Staff nurses, lab technicians, pharmacists, ambulance drivers and other health care providers
Tertiary care hospitals and medical colleges	Airborne infection control desk(cough corner) Hand washing Red channeling of suspected nipah patients Isolation Trainings Mock drills Infection prevention and control practices	Patients with respiratory symptoms, Doctors, Staff nurses, lab technicians, pharmacists, students trainees, ambulance drivers and other health care providers

3. Strengthening reporting and surveillance

Level	What	By whom	To whom	Action
Individual/Community	Unusual cases or clustering of similar cases	General public	Field staff, ASHA worker	Verification and preliminary report(FIR) by Medical officer to IDSP immediately
Hospitals	Suspected/ confirmed Nipah case	Doctor	DMO DSO Regional PEID Cell	1.Report to DHS, State IDSP, State PEID cell 2.Contact tracing 3.RRT
Laboratory	Sample collection, packing, transportation	Doctor/laboratory technician	DSO	Transport of specimen to NIV

4. Inter-sectoral co-ordination

Sector	Airborne infection control	Screening	Health education	Surveillance
Health	✓	✓	✓	✓
Animal husbandry			✓	✓
Forest and Wild life department			✓	✓
Foreign affairs		✓	✓	✓
Environment			✓	
Education			✓	
Food safety			✓	
Food and agriculture			✓	

Kerala Nipah Virus Mock Drill (Functional Exercise)

Background

Post outbreak of NIPAH in June 2019, it was discussed to ensure preparedness for any such future outbreak. The resource group discussed various aspects and drafted an elaborate mock drill protocol.

It is worth noting that Kerala Health has taken it very seriously and included all necessary PPE in their procurement plan in September 2019, placed orders, continued discussions and later drafted mock drill plan.

Why Simulation Exercises

Simulation exercises are tools used to assess and enhance preparedness of the system to face public health threats.

There are five types of simulation exercises:

1. Table-top exercises
2. Mock drills
3. Functional exercises
4. Field exercises
5. Full scale exercises

This document explains the organisation and conduct *of a functional exercise using a NIPAH virus patient to assess preparedness of health care facilities, public health machinery and laboratory network.*

EXERCISE NAME: Kerala Nipah virus Drill

DATE : A fixed day will be decided to do drill annually

TYPE OF EXERCISE: Functional exercise

LOCATION: Selected health care institutions in Kerala- Primary health centres, Taluk Hospitals, General Hospitals, Medical College Hospitals

PRE-REQUISITES:

- Identify the human resource(HR) to be involved in the functional exercise (hospital superintendents, RMOs, doctors, head nurses, staff nurses, link nurses/infection control nurses, house keeping units, nursing assistants, lab technicians, store superintendents/pharmacists, grade 1 and 2 attendants, security staff, lift operators, ambulance drivers, ambulance technicians)
- Training of HR for disaster response

- Procurement of logistics (PPEs, drugs, disinfectants)
- Infrastructure upgradation (e.g: identify/set up isolation rooms in the casualty/OPD, red channels, isolation ICU)
- Designated laboratory network for testing highly infectious samples
- Case definitions, Risk stratification (checklists)

ASSUMPTIONS:

The following are the assumptions to ensure that the exercise is as realistic as possible. Events taking place during the exercise are intended to progress in a logical and realistic manner and all exercise objectives will be achieved throughout the course of exercise.

- Exercise players/participants know well their roles and responsibility during the mock drill and they should act
- in accordance with existing plans, policies and procedures.
- Real-world response actions will take priority over exercise actions.
- The exercise controller (patient-actor) will present him or herself in a manner consistent with symptoms of NIPAH virus and relevant travel history.
- Symptoms described by the controller may require some medical evaluation for triage purposes, but will not require other invasive procedures or medication administration.

PURPOSES:

- 1) To assess the ability of Health care institutions to promptly and safely identify and isolate a potential patient with NIPAH virus infection
- 2) To assess the ability of health machinery of Kerala to initiate and implement public health measures for identification and containment of a possible outbreak
- 3) To assess the health system preparedness for timely and safe collection and transport of NIPAH virus specimens to a designated laboratory

SCOPE:

Duration: The drill is an un-announced exercise planned for a day. (It can be appropriately worked out maximum 2 hours at the hospital facility and 3 hours for the field activities)

Health facility:

1. Primary health centre/CHC/ Taluk Hospital
Beginning point: Exercise begins when the patient-actor enters

the out-patient department (Eg: household contacts of positive NIPAH virus infection turns symptomatic)

End point: District health authorities are notified and patient is shifted safely to an ambulance for transfer to a designated NIPAH treatment facility.

Community level action to be taken by primary health care centre

Beginning point: Received notification from health facility about suspected NIPAH virus case.

End point: Initiation of contact tracing for hospital and community contacts, and risk stratification.

2. Designated NIPAH treatment centre

Beginning point: Receiving information regarding the arrival of suspected NIPAH virus infection

End point: Admission of patient with suspected NIPAH virus infection in isolation ward and arrangements for sample collection.

Laboratory preparedness at the designated NIPAH treatment facility

Beginning point: Clinician orders lab investigations

End point: Safe transportation of samples to designated diagnostic facility for NIPAH virus

The sequence of events can be represented by the following flow diagram:

OBJECTIVES:

I. Health care facility

1. Determine the time it takes for the facility to identify the potential NIPAH virus disease and initiate mitigation measures in the OPD/casualty area (mask, shifting to isolation, inform trained ambulance team if needed)
2. Identify the time taken for the patient to be transferred to an isolation room.
3. Assess staff adherence to key infection control measures.
4. Determine facility capability to make necessary communications within PHC, trained ambulance team, designated NIPAH treatment centre and district/local health authorities.
5. Determine the capability of the hospital staff and ambulance team to safely shift the patient into the ambulance for transport to designated NIPAH treatment centre, if needed.

II. Health services (Public health aspect)

1. To test the efficacy of communication system within the health system to allow smooth flow of information throughout the chain of command within the health services
 - DMO Regional/State PEID Cell Setting up a team for epidemiological investigation
 - DMO Local health authorities(MO) Community health workerscommunity
 - DMOHealth facility in which patient is admitted(Public/Private)
1. To test the ability of the epidemiological investigation team to effectively initiate the process of tracing contacts based on existing case definitions and risk stratification of contacts
2. To assess the preparedness of system to effectively handle the sensitive health information

III. Laboratory network (Collection and transport of NIPAH virus specimens to designated lab)

1. To assess the preparedness of clinical and para-clinical staff to safely collect required samples for testing.
2. To assess the ability of the system to safely transport the collected samples to a designated laboratory.
3. Adherence of clinical and para-clinical staff to Infection Control Precautions throughout the process of collection and transport of specimens.

SCENARIOS

Patient (or cluster of patients) presenting with symptoms consistent with NIPAH virus, that will require isolation, shifting to a higher centre and notification of district health authorities, initiation of contact tracing and collection and transport of specimens to a designated laboratory.

Scenario 1:

Anju, 23 years presents to a PHC OPD/casualty in village X, with fever of 2 days duration, dry cough. She has developed dyspnoea, over last one day. She is a medical student studying in Wuhan Medical University in China. One week back she returned from china where there was epidemic of NIPAH virus infection along with 3 friends.

Scenario 2

Savithri, 50 years presents to medical college casualty with fever and

dry cough and dyspnoea of 2 days duration, her 25 year old son Sabu was admitted the previous day in an ICU with fever of one week, cough and breathing difficulty. He was suspected to have a NIPAH virus infection. She had cleaned his sputum and helped take him to the hospital without using appropriate protective measures.

Scenario 3:

Chacko, 23 an intern in medical college, presents to the medical casualty of a private tertiary care hospital with fever, dry cough, of 1 day duration. One week back he had received a patient, in the medical college ICU and had taken a detailed history from him. During the time, the patient was coughing and Chacko was not wearing a mask. Sabu was subsequently diagnosed to have NIPAH virus.

Scenario 4:

Robert 29, presents to OPD with high-grade fever and cough of 2 days duration. He recently returned from Singapore.

PARTICIPANTS

The following are the categories of participants involved in the exercise:

1. Exercise director:

The person who provides strategic oversight and direction for the planning, conduct and evaluation of an exercise. The exercise director is responsible for approving the exercise's purpose, objectives and supporting documentation, including the concept note, exercise plan and exercise instructions.

2. Exercise controller/lead facilitator:

A single person who supervises the overall conduct of the exercise, ensuring that it proceeds as planned and that its objectives are reached. The exercise controller is required for drill, functional and full-scale exercises. The exercise director appoints the exercise controller.

3. Patient-actor/s:

The mystery NIPAH virus patient appointed to present in the OPD with history and symptoms consistent with a pre-written scenario. The patient-actor reserves the right to terminate the exercise at any point if he/she has safety concerns or due to real world events that might interfere with the exercise. He will assist in the evaluation wherever practical and will do so in a manner that maintains anonymity of the drill.

4. Evaluator:

The evaluator's job is to evaluate the drill based on the exercise objectives and evaluation guidelines. Evaluator co-ordinates with the trusted agent and is present at the facility throughout the exercise. He keeps the patient actor in view as far as possible without interfering in the drill process. Evaluator collects data about the exercise and exercise objectives and drafts an After – Action Report for feedback to the facility within one week of the drill.

5. Trusted Agent:

Trusted agent is a staff of the facility who serves as a point of contact from the facility. Trusted agents are also placed in the offices of the health department and field. He will receive information regarding the date and time of the drill. In turn, the trusted agent provides information to the drill organisers about any unique considerations that should. Trusted agent also reserves the right to terminate the drill if it seems appropriate at any point in time. Trusted agents from the field intimate the evaluator on the time stamps of activities at field level via text message.

6. Players:

- *Health facility:* Players are the front-line staff of the facility on duty in the OPD at the time of the exercise. They are responsible for identification, isolation, medical care (including sample collection) and reporting of the NIPAH virus case. Players will be evaluated based on the objectives, by the evaluator.
- *Health services:* Administrators (top down from DMO), Administrative and field staff of concerned PHCs, PEID cell team including epidemiologists

ROLES AND RESPONSIBILITIES OF EXERCISE PARTICIPANTS IN DESIGNATED NIPAH TREATMENT CENTRE

Superintendent

- a) Over all Co-ordination of the operation
- b) Checks with all Operational Chiefs
- c) Give necessary instructions to all operational Chiefs & collect present status of the operation
- d) Know about the number of patients brought to the hospital.
- e) Collect all data's about the patients & solve all queries.

- f) Communicate with the neighbouring hospitals, if needed

PEID cell coordinators of Medical Colleges

- a) Know about the number of patients brought to the hospital & Collect all data about the patients
- b) Communicates with the Superintendent.
- c) Co-ordinates with the Superintendent regarding the requirements of treating officers (OT/ CSSD/Bed availability in ICU and ward)

Operation Chief Clinical- HOD , Infectious Disease

- a) Over all in charge of treatment area
- b) Know about the number of patients brought to the hospital & Collect all data's about the patients
- c) Communicates with the Superintendent.
- d) Co-ordinates with treatment officers in treating the patients
- e) Co-ordinates with the Operation Administrative Chief regarding the requirements of treating officers.
- f) Communicate with the relatives regarding the victim's status and plan of care

Treating physicians

- a) Give preliminary care to patients irrespective of the specialty they are
- b) Give necessary information regarding the condition to Clinical Chief
- c) Give advice regarding further plan of care of the patient you are seeing
- d) Write brief note about the patient
- e) Write the plan of care on the case sheet immediately after seeing the patient

Nursing superintendent (Officer)

- a) Co-ordinates with the Operation Chief Clinical regarding the further care of the patients.
- b) Co -ordinates with the Head Nurses regarding mobilization of staff from the floor.
- c) Ensure the bed availability of the floor/ ICU.
- d) Management of logistics.
- e) Coordinate house keeping activities.

Head Nurse/ Staff Nurse in Charge

- a) Make sure that the rooms are ready as soon as possible to receive the patients
- b) Management of logistics (PPE, hand rub etc) when requested by the concern departments.

- c) Help the special NIPAH OP staff whenever requested
- d) Discharge the patients immediately in consultation with consultants

Nursing Staff (NIPAH OP/Ward)

- a) Carry out the orders of the treating physician
- b) Document about the treatment given case sheet / record vitals
- c) Co-ordinate regarding the disposition of patients who was seen by the treating physician

NIPAH OP (Reception) in charge

- a) Collect the personal details of the patients
- b) Register the patients with UHID number.
- c) Preliminary assessment and history taking
- d) Directing the patients to treating physician
- e) Provide IEC regarding NIPAH virus infection to the care taker
- f) Emotional Support to the patient and family

Radiology

- b) Call the radiologist and inform

Biomedical Engineering

- a) Arrange necessary equipment to the treatment area.
- b) Mobilize equipment from floor if needed. (Portable X Ray, Ventilators)
- c) Help in arranging treatment area.

Housekeeping

- a) House Keeping in charge should see that sufficient staff is present to maintain the cleanliness of the treatment area
- b) Waste disposal of the treatment area is carried out frequently to avoid over flow spillage
- c) Help the staff whenever they request

Chief Security

- a) Arrange Vehicle and driver on standby to collect staff, volunteers, blood, suppliers, or transfer patients to other hospitals
- b) Keep lifts working
- c) Check security guards are in their correct positions

ROLES AND RESPONSIBILITIES OF EXERCISE PARTICIPANTS IN PHC/CHC/TALUK HOSPITALS

Medical officer in charge

- a) Notify District health authority regarding the case of NIPAH virus infection.
- b) Arrange designated ambulance service to transport the patients to

designated NIPAH treatment centre.

- c) Take relevant history from the patient.

Staff nurse

- a) Take detailed history from the suspected NIPAH virus including phone numbers.
- b) Arrange a temporary isolation facility till the ambulance arrives.
- c) Shift the patient to ambulance and give proper instructions

Health supervisor/Health Inspector/Junior Health Inspector

- a) Collect details from staff nurse and initiate contact tracing and risk stratification
- b) Provide IEC materials

EXERCISE CONDUCT

Healthcare facility: The exercise evaluator will make initial contact with the trusted agent once on-site at the facility. The trusted agent will accompany the evaluator to the OPD/emergency department where they will remain for the duration of the exercise. In order to avoid undue suspicion, the exercise evaluator may assume the role of a vendor, consultant or colleague of the trusted agent that is viewing the emergency department for reasons unrelated to the drill. Once in the emergency department, the evaluator will instruct the exercise controller via cellphone to enter the emergency department and begin the drill.

The patient-actor will enter the facility's emergency department upon notification from the evaluator that it is appropriate to do so. The patient-actor will play the role of the patient presenting with symptoms consistent with any of the given exercise scenarios. The patient-actor will collect any data possible during the course of exercise play; it is recommended to take notes and mark time stamps on a mobile device, however, it is acknowledged that taking notes may not be feasible given the unannounced nature of the drill. If possible, there should be a plan for the controller to communicate key time stamps to the evaluator as they occur (e.g. via text) whenever possible.

In the health care facilities, the trusted agent will not be expected to collect data other than any qualitative information that may be captured during the hot wash.

Field activities: Key time stamps are also communicated to the evaluator by trusted agents at each point of communication in the health department, PEID Cell and field via text message.

General rules that govern exercise play:

- Real-world emergency actions take priority over exercise actions.
- Exercise participants will comply with real-world response procedures, unless otherwise directed by the exercise controller.
- Although these drills are unannounced, a trusted agent at each facility will coordinate activities with the exercise controller to ensure that all applicable safety and security provisions are followed.
 - The trusted agent will retain the right to terminate the exercise if at any point they feel it is appropriate.
- At no point should the controller allow facility staff to perform any invasive procedures or administer any medications.

The exercise controller may terminate the drill at any point that he or she feels it is appropriate given the actions being taken by facility staff, these may include (but shall not be limited to):

 - Notification to local media outlets of a possible communicable disease
 - Administering medications based on the controller's reported symptoms
 - Performing invasive procedures, such as giving IV fluids, based on the controller's reported symptoms
 - Evacuation or movement of patients in portions of the emergency department or other actions that may otherwise compromise the care of other patients in the emergency department

The exercise is followed by a de-briefing activity by the drill team involving all participants

Example:

ONCE THE PATIENT ARRIVES IN DESIGNATED NIPAH TREATMENT CENTRE

Person in charge of NIPAH OP after wearing PPE must take detailed history from the patient & make arrangements for consultation with treating physician.

Consider admitting the patient in accordance with the opinion of treating physician.

Arrange a staff with PPE to accompany the patient.

Clear the way to admission room and shift the patient to alert room already arranged for admission (CCU & Deluxe pay ward).

AFTER ADMISSION

- Examine the patient in detail after taking all the necessary precautions (PPE).
- Instruct all the staff involved in dealing with patient to follow necessary infection control practices strictly (especially PPE, Hand hygiene).
- In case of investigations/scanning/X-ray, inform the Labs/ Centre before sending samples for taking precautions.
- Instruct them to wear PPE during investigation.



DURING SAMPLE COLLECTION

Sample to be collected as early as possible, in an isolated room with all biosafety precautions.

Samples should be sent along with the Performa obtained from testing laboratory containing the detailed history of patient. Sent to the concerned lab after triple layer packing.

During sample collection

Wear complete disposable PPE.

Follow strict hand hygiene practices.

Inform security officer to arrange an ambulance for sending the sample.



WASTE MANAGEMENT

Discard all waste except needles in labelled yellow covers.

Needles in white containers (as directed by IMAGE).

Hose keeping wing should ensure the cleanliness of treatment area.

DEBRIEFING/ HOTWASH QUESTIONS:

What actions did you take? Who, if anyone, did you notify? What would your next steps have been? Is there anything you would have done differently, and why? How could this drill be improved? Did you know, or suspect, that this was a drill? Did you find this drill valuable?

EVALUATION

Evaluation of these drills will be performed by both the exercise evaluator and the patient-actor. In doing so, data collected during the course of exercise play will be as complete as possible even though the evaluator and actor may become separated throughout the course of the drill.

The evaluator will collect all data possible in the Exercise Evaluation Guide (EEG); however, it is expected that this may not be possible should the patient-actor be moved out of view by clinical staff for further evaluation and/or isolation. The patient-actor should assist the evaluator in filling the evaluation guide following the completion of the drill, for incorporation into the After Action Report

KERALA NIPAH VIRUS DRILL - EXERCISE EVALUATION GUIDE

Health care centre:

Controller:		Date:	
Evaluator:		Scenario:	
Patient-actor/s:		Start Time:	
Trusted Agent:		End time	

Key measures	Time stamp
Time patient entered the Special NIPAH OPD.:	
Time patient received by the staff in charge of NIPAH OP:	
Time brought to the treating physician:	
Time patient dons mask (or other source control measure is initiated):	
Who gave the patient a mask? ☐ By-stander? ☐ Attender ☐ Nurse ☐ Physician ☐ Other:	
Was this the first clinical staff member the patient came into contact with? ☐ Yes ☐ No ☐ Unsure ☐ Not applicable (patient not given amask)	
If other initial source control measures were taken besides masking, please specify:.....	
Time the patient is moved to isolation room:	
Time facility's Infection Control is notified:	
Time ambulance team is called (if needed): (For PHC/CHC/Taluk Hospitals only)	
Time Health department is notified:	
Time for PEID cell to be notified:	
Time for local PHC and field staff to be notified:	
Time of formation of an epidemiological investigation team:	

Risk Screening Questions			
Was the patient asked if they had a fever ?	.	☐	☐
Was the patient asked for history of dry cough			
Was the patient asked about the presence of dyspnoea?		☐	☐
If the patient reported a fever, was he asked if someone close to them had a similar illness/admitted else where/ died?		☐	☐
If the patient reported fever, travel to NIPAH virus affected area/ contact with suspected NIPAH virus case		☐	☐
Infection Control Questions			
Are masks visible and available to patients in the NIPAH OP?		☐	☐
Are hand hygiene supplies visible and available in the patient NIPAH OP?		☐	☐
Was the suspected patient given a mask and appropriate instruction?		☐	☐
Was hand hygiene performed by all staff who came in contact with patient?		☐	☐
Was the patient instructed to perform hand hygiene after coughing or after coming in contact with respiratory secretions ?		☐	☐
Were other staff notified of a possible suspect patient?		☐	☐
Was Infection Control notified?		☐	☐
Isolation questions			
Is the designated isolation room available?		☐	☐
Was the patient placed in Isolation Room ?		☐	☐
Was appropriate Infection Control signage posted for the isolation room?		☐	☐
Did all staff entering the isolation room don the correct PPE (including mask, gloves and gown if indicated)?		☐	☐
Were PPE supplies readily available near the isolation room entrance?		☐	☐
Did the provider wash/sanitize hands after patient encounter?		☐	☐
Sample collection and transport questions			
		☐	☐
Was adequate equipment available for collection and transport of specimens?		☐	☐
Was a laboratory/laboratories designated for NIPAH virus diagnosis?			
Was the institution aware about the designated laboratory facility/facilities for NIPAH virus diagnosis?		☐	☐
Was infection control precautions followed while collection, labeling and transport of samples?		☐	☐
Were the samples labelled appropriately about the biohazardous nature of specimen?		☐	☐
Was the designated laboratory/laboratories informed via phone about the possible NIPAH virus case?			
Field activities questions	Y	N	NA
Was there any delay in communicating the information down the chain of communication up to the field staff?			
Was there any confusion regarding individual roles and responsibilities?			
Was the case definitions and checklists for classifying the contacts according to risk readily available as soft copies/online?			
Was the epidemiological investigation team prompt in initiating contact surveillance?			
Was a media spokesperson identified?			

TARGET TIMES:

Time taken for the following should be calculated by the evaluator from the time stamps collected. This should be compared with a set target time:

1. Patient arrival at health facility other than designated NIPAH treatment centre Designated NIPAH treatment centre
2. Patient arrival in NIPAH OPD patient provided mask
3. Arrival of the patient to special NIPAH OP Treating physician's consultation
4. Physician's consultation patient shifted to isolation room
5. Diagnosis of probable NIPAH virus initiation of contact tracing
6. Diagnosis of probable NIPAH virus collection and transportation of samples

AFTER-ACTION REPORT (AAR)

Within 2 weeks, the drill team has to submit an AAR to the health facility, health department and field staff regarding the success of the procedures, gaps identified and corrective measures to be taken. Corrective measures to be taken in terms of HR, training, equipment, infrastructure and policy should be identified and communicated through the AAR. This action plan should be disseminated among all participants of the drill and should lead to meaningful discussions and actions on further improvement.

References:

1. WHO Simulation Exercise Manual
<http://www.who.int/iris/bitstream/10665/254741/1/WHO-WHE-CPI-2017.10-eng.pdf?ua=1>
2. NYC Mystery Patient Drill
<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&uact=8&ved=2ahUKEwj017f1943nAhXJwTgGHao0BLUQFjABegQICxAE&url=https%3A%2F%2Fwww1.nyc.gov%2Fassets%2Fdoh%2Fdownloads%2Fpdf%2Fem%2Fpatient-drill-explan.pdf&usg=AOvVaw0tnnY5f2-wSzvYtIteONbM>
3. No-Notice Mystery Patient Drills to Assess Emergency Preparedness for Infectious Diseases at Community Health Centers in New York City, 2015–2016 Mohsin Ali and Marsha D. Williams
<https://dx.doi.org/10.1007%2Fs10900-018-00595-5>

Acknowledgement

The Health department has published the Standard Operating Procedure to tackle NIPAH outbreak. A multidisciplinary resource group was constituted involving senior faculties from Directorate of Medical Education and field officers from Directorate of Health Services.

These guidelines could be drafted with wholehearted efforts of all the doctors of the resource group and others from the PEID Cells and the doctors from the field. We earnestly appreciate their contribution.

Kerala Health

Resource Group

Sl No	Name	Designation
1.	Dr T K Jayakumar	Superintendent MCH Kottayam
2.	Dr Indu P S	Professor & HoD Community Medicine, MCH Thiruvananthapuram
3.	Dr Chandni	Professor, Emergency Medicine, MCH Kozhikode
4.	Dr Aravind	Asst Professor, Deptt of Infectious Diseases MCH Thiruvananthapuram
5.	Dr Binu Areekkal	Associate Professor, Community Medicine, MCH Thrissur
6.	Dr Meenakshy	Addl Director Health Services
7.	Dr Mathew	DPM Ernakulam
8.	Dr Naveen	DPM Kozhikode
9.	Dr Dileep Kumar	GM KMSCL
10.	Dr Dahar	MO, Noolpuzha FHC, Wayanadu

Doctors who participated / contributed in the Nipah related documents preparation

1. Dr Suma Krishnasastry Professor , Internal Medicine, MCH Alappuzha
2. Dr Chandni Professor, Emergency Medicine, MCH Kozhikode
3. Dr Sorna P N, Junior Resident, Community Medicine, GMC, Trivandrum
4. Dr Malathi M, Junior Resident, Community Medicine, GMC, Trivandrum
5. Dr Aparna Mohan , Junior Resident, Community Medicine, GMC, Trivandrum
6. Dr Anjana NK, Junior Resident, Community Medicine, GMC, Trivandrum
7. Dr Punrnami AP, Junior Resident, Community Medicine, GMC, Trivandrum
8. Dr Mariyam Rajee Alex, Senior Resident, Community Medicine, GMC, Trivandrum

9. Dr Meenu Suresh, Senior Resident, Community Medicine, GMC, Trivandrum
10. Dr Aravind.R, HOD, Infectious Diseases, GMC, Trivandrum
11. Dr Tony Lawrence, Assistant Professor, Community Medicine, GMC, Trivandrum
12. Ms Deepa.V.N , Infection Control Nurse, PEID Cell
13. Dr Sahira, Assistant Professor, Microbiology, GMC, Trivandrum
14. Dr Sarada Devi, Professor and head, Microbiology, GMC, Trivandrum
15. Dr Harikrishnan , Junior Resident, Community Medicine, GMC, Trivandrum
16. Dr Chintha.S, Assistant Professor, Community Medicine, GMC, Trivandrum
17. Dr Anuja.M, Associate Professor, Health Education
18. Dr Indu.P.S, Professor and head, Community Medicine, GMC, Trivandrum
19. Dr Meenakshi V, Additional DHS(public health)
20. Dr Manjula. VD, Professor and head, Community Medicine, GMC, Eranakulam
21. Dr Amar Fetle, State Nodal Officer
22. Dr Tarun Bhatnagar, Epidemiologist, ICMR



**Department Of Health And Family Welfare
Government Of Kerala**

Annexe II, Secretariat
Thiruvananthapuram
Kerala-695001

Kerala HEALTH



GOVERNMENT OF KERALA

Abstract

Health & Family Welfare Department - Nipah Virus Infection - Revised Treatment Revised Guidelines - Approved - Orders issued.

HEALTH & FAMILY WELFARE (F) DEPARTMENT

G.O.(Rt)No.2363/2023/H&FWD Dated,Thiruvananthapuram, 16-09-2023

- Read:- 1 Nipah Virus Infection Control Guidelines 2019 dated 06/2019
2 Management Plan for Nipah outbreak in Kozikode dated 05/09/2021
3 Nipah Treatment Protocol (Amendment) September, 2021 dated 05/09/2021

ORDER

The Nipah outbreak has been reported in Kozhikode District on 9th September, 2023 and received confirmation from NIV Pune. Nipah virus is a highly virulent zoonotic pathogen that can be transmitted between humans. For effective management of the disease, Government are pleased to approve and issue the "*Nipah Virus Infection- Treatment Guidelines Revised - September 2023*" incorporating Epidemiology, burden of disease, transmission, diagnosis and management of Nipah virus infection, as annexed to this order.

(By order of the Governor)
A P M MOHAMMED HANISH
PRINCIPAL SECRETARY

To:

The State Mission Director -National Health Mission, Thiruvananthapuram.

The Director of Health Services, Thiruvananthapuram.

The Director of Medical Education, Thiruvananthapuram.

All District Medical Officers (Health).

All Superintendents, Medical College Hospitals.

Principal Accountant General (A&E/Audit) Kerala.

Information & Public Relations (Web & New Media) Department.

Stock File/ Office Copy to F2/288/2023-HEALTH.

Forwarded /By order

Signed by
Vilasini K V

Date: 16-09-2023 16:09:14
Section Officer

Copy to:

Private Secretary to the Hon'ble Chief Minister

Private Secretary to the Hon'ble Minister (Health)

OSD Chief Secretary

PS to Principal Secretary (Health)

Nipah Virus Infection- Treatment Guidelines– Revised September 2023

1. Epidemiology, burden of disease, transmission

1.1 Epidemiology

1.2 Burden of disease

1.3 Modes of Transmission

2. Diagnosis

2.1 Definitions - Case & Contact

2.2 Clinical features

2.3 Laboratory diagnosis

2.3.1 Investigations to be done for confirmation of diagnosis

2.3.2 Sample collection and transport and testing guidelines

2.3.3 Disposal of supplies/waste

2.3.4 Point of care testing

2.3.5 Other Investigations for patient management

3. Management of Nipah virus infection

3.1 Triaging of patients

3.2 Setting up an isolation facility

3.3 Treatment

3.3.1 Supportive measures

3.3.2 Drug treatment options

3.3.2.1 Ribavirin

3.3.2.2 Monoclonal antibody m102.4

a. Indications and contra indications

b. Dosage

c. Storage

d. Administration

e. Adverse events

3.3.2.3. Remdesivir

3.3.2.4. Favipiravir

3.3.3 Standard care for Encephalitis, Myocarditis and ARDS

3.3.4 Other therapeutic options

3.4 Criteria for discharge and follow up

Introduction:

Nipah virus is a highly virulent zoonotic pathogen that can be transmitted between humans. Nipah Virus (NiV) Infection recognized as a deadly infection in 1998 garnered attention in Kerala with the outbreaks in 2018, 2019 and 2021. Knowledge about the transmission dynamics, epidemiological aspects and the magnitude of the disease burden are essential to plan strategies for preparedness, early detection, timely management and appropriate interventions to tackle the situation on an urgent basis.

1.1 Epidemiology

- **Agent: Nipah Virus (NiV)** is a highly pathogenic RNA virus belonging to the *Paramyxoviridae* family and grouped under the genus *Henipavirus*. *Two NiV clades have been proposed so far; B genotype in Bangladesh, and M genotype in Malaysia*. The complete NiV genome of the Kerala strain had 85.14%–96.15% similarity with M and B NiV genotype.
- **Natural Reservoir:** Large fruit bats of *Pteropus* genus are the natural reservoir of NiV. Pigs are identified as intermediate hosts. In a study conducted during the outbreak in 2018, high positivity of NiV was detected in bat throat swabs, and showed persistence of virus for a couple of hours on contaminated fruits, which enhance the chances of human infection. NiV positivity was identified in bats from North Eastern Region states and Kerala. A recent ICMR/NIV serosurvey among bats demonstrated the presence of Nipah IgG among bats sampled from 9 states and one union territory.
- **Seasonality** was strongly implicated in NiV outbreaks in Bangladesh and India. All the outbreaks occurred during the months of December to May. But in 2021 the case was diagnosed in the month of September.
- **Incubation period:** varies from 4-21 days.

1.2 Burden of disease: In the 1998 to 1999 Malaysian outbreak, human infection occurred from infected bats through infected pigs as intermediate animal host by direct contact with respiratory secretions and urine from infected pigs. In Bangladesh and India the transmission happened from bat to human and later from human to human. So far three outbreaks have been reported from Kerala. From Kozhikode in 2018, Kochi in 2019 and Kozhikode in 2021. During the first outbreak reported from Kerala in May 2018, apart from the index patient, 18 confirmed and 4 probable cases were identified. Two confirmed patients survived in that outbreak. In Kochi, May 2019 one patient was confirmed of Nipah but no further spread was identified. In September 2021 one patient was diagnosed with Nipah in Kozhikode. India comes within the Nipah virus distribution map and there is a risk of spill over and transmission to humans. The delay in diagnosis will increase the chance of spread to humans through the risk of increased human to human spread. The knowledge about the ecology of bats and NiV and the seasonality of the disease is important in prevention of future outbreaks.

1.3 Mode of Transmission:

Human infection results from spillover transmission from bats or through human-to-human transmission. Direct bat-to-human transmission occur through fruits contaminated by bat's secretions -urine , saliva, reproductive fluids- or by consumption of raw date palm sap [*tari*] contaminated by bat saliva. In the Malaysian outbreak, human infection occurred through contact with respiratory secretions and urine from infected pigs, which got infected after consumption of partially bat eaten fruits dropped in pigsty. The infection got controlled once the cause of infection was identified and health education, barrier precautions were advised to people handling the pigs and pig culling operations were conducted. Unlike Malaysia and Singapore, the

outbreaks in Bangladesh and India pigs were not identified as intermediate hosts and transmission was from bat to human and human to human. In the 2014 Philippines outbreak, infected horses were identified as the intermediate hosts. Clustering of symptomatic cases mainly adults among close contacts and households is an important clinical clue to this infection. In 2018 Kerala outbreak, all cases except the index case the transmission was from human to human.

Diagnosis

Early identification and diagnosis is of prime importance in NiV infection. The case management includes strategic plans to prevent spread through contacts and this requires proper triaging and isolation. Understanding definition of cases and contacts becomes very important here.

2.1 Definitions - Case & Contact

1. Case Definitions

a. Suspect Nipah Case

Person from an area/ locality affected by a Nipah virus disease outbreak who has:

- Acute Fever with new onset of altered mental status or seizure and/or
- Acute Fever with severe headache and/or
- Acute Fever with Cough or shortness of breath

b. Probable Nipah case

- Suspect case-patient/s who resided in the same village where suspect/confirmed case of NIPAH were living during the outbreak period and who died before complete diagnostic specimens could be collected.

OR

- Suspect case-patients who came in direct contact with confirmed case-patients in a hospital setting during the outbreak period and who died before complete diagnostic specimens could be collected.

c. Confirmed Nipah Case

Suspected case who has laboratory confirmation of Nipah virus infection either by:

- Nipah virus RNA identified by PCR from throat swab, urine, serum or cerebrospinal fluid (optional).
 - Isolation of Nipah virus from throat swab, urine, serum or cerebrospinal fluid.
- d. **Definition of a contact:**

A Close contact is defined as a patient or a person who came in contact with a Nipah case (confirmed or probable cases) in at least one of the following ways.

- Was admitted simultaneously in a hospital ward/ shared room with a suspect/confirmed case of Nipah virus disease
- Has had direct close contact with the suspect/confirmed case of Nipah virus disease during the illness including during transportation.
- Has had direct close contact with the (deceased) suspect/confirmed case of Nipah virus disease at a funeral or during burial preparation rituals
- Has touched the blood or body fluids (saliva, urine, vomitus etc.) of a suspect/confirmed case of Nipah virus disease during their illness
- Has touched the clothes or linens of a suspect/confirmed case of Nipah virus disease

These contacts need to be followed up for appearance of symptoms of NiV for the longest incubation period (21 days). They must be transported to appropriate care facility if they develop symptoms with proper infection control practices.

2.2 Clinical features

- Fever, Altered mental status, Severe fatigue, Headache, Respiratory distress, Cough, Vomiting, Muscle pain, Convulsion, Diarrhoea

- In infected people, Nipah virus causes severe illness characterized by inflammation of the brain (encephalitis) or respiratory diseases.
- The syndromic presentations are ARDS, Myocarditis and Encephalitis. Patients can present with fever alone. All patients coming with fever with any other symptom having an epidemiological link and history of contact must be treated as NiV infection and must be tested for the NiV infection.
- In general, the case–fatality rate is estimated at 40–75%; however, this rate can vary by outbreak and can be upto 100%.

2.3 Laboratory diagnosis

2.3.1 Investigations to be done for confirmation of diagnosis

- Real-Time RT-PCR Viral RNA
- Anti-NiV IgM and IgG antibodies by enzyme-linked immunosorbent assay

2.3.2 Sample collection and transport and testing guidelines

Laboratory confirmation of a suspect and also a symptomatic with definite history of contact case can be made during the acute and convalescent phases of the disease by using a combination of tests. The samples have to be sent to designated laboratories identified as per protocols prepared.

Sample Collection and Transport Guidelines:

Universal, standard droplet and bio-containment precautions should be followed during contact with excretions, secretions and body fluids of suspected patient for Nipah virus. Adequate bio-safety precautions should be adopted during collection/transport/ storage/ processing of suspected sample.

Sample collection:

The samples should be collected in all patients (suspect or symptomatic with contact with Nipah) as early as possible with all bio-safety precautions and documenting the clinical details on the proforma (provided from the testing laboratory).

Sample collection should be done only AFTER ADMISSION into an isolation facility, and ensuring that the staff member doing the collection is following proper infection control practices.

During sample collection wear complete disposable Personal Protective Equipments (N 95 mask, double surgical gloves, gowns, goggles foot cover, etc). Wash hands with soap and water at least for 30 seconds and then clean hand using alcohol based hand sanitizer before and after collection of samples.

The recommended samples are

- Throat swab in viral transport medium
- Urine 10 ml in universal sterile container
- Blood in red vacutainer (5ml)
- CSF (1-2 ml) in sterile container

Transportation and Storage of samples:

- Samples should be safely packed in triple container packing and should be transported securely under cold chain (2-8°C) to the testing laboratory with prior intimation.
- Sample containing vials, tightly closed, should be kept in good quality zip-lock bags wrapped with sufficient absorbent cotton padding so that inside material should not come out of bag if it leaks. The plastic bag should be kept in another Zip-lock bag similarly, which should be sealed with adhesive tape. This carrier should be placed in a hard container sealed with impermeable tape or plaster and placed in thermocol box /vaccine carrier containing ice packs. The case sheets with complete information should be placed in plastic bag and should be pasted **outside the container.**

- Samples should be transported at 2-8°C to the have to be sent to NIV Pune, NIV field station, Alappuzha or as per the testing protocols.

2.3.3 Disposal of supplies/waste:

The proper disposal of biomedical waste is a challenge in such type of infections. Must be done adhering to strict infection control practices to ensure safety of all personnel involved. This has to be supervised and properly co-ordinated by the hospital infection control committee.

2.3.4 Point of care testing (POC):

Early diagnosis was a challenge for appropriate prompt management in outbreak 2018. High containment laboratory facility for quick diagnosis was identified as a need for the same. In Government Medical College, Ernakulam during 2019 outbreak a POC micro PCR assay for NiV detection and ELISA testing facility could be started with technical support from NIV, Pune. If such facilities are available, it must be utilized. The facility for screening dengue, Japanese encephalitis and West Nile virus infection in all NiV negative cases will help to narrow down the diagnostic possibilities in seriously ill patients. This will help to incorporate appropriate modifications in the management

2.3.5 Other Investigations for patient management

NiV infection is similar to any other viral infection and it is a clinical challenge to diagnose it early and to ensure all safety measures and infection control practices to prevent human to human transmission. Nipah virus is classified as a biosafety level 4 pathogen. The laboratory should be informed if a clinical suspicion is made and the facilities must be the same for all other investigations done for the patient considering its high pathogenicity in humans. All treatable cases like bacterial infections, malaria and herpes encephalitis must be included in the differentials depending on the clinical presentation. Tests must be ordered appropriately.

3. Management of Nipah virus infection

NiV infection is different from other viral infections or pathogens because of its potential of transmission from human to humans with high mortality with no definite treatment or vaccine so far identified. Hence the management essentially involves infection control practices , triaging, isolation and management of patients including intensive supportive care. The Emergency Department must be sensitized for early identification, proper isolation and management of patients suspected of NiV infection to minimize the risk of human to human transmission.

To manage the fever triage and isolation facility, a separate team should be trained and appropriately delegated for its implementation. The team should include health care providers as a single unit. The senior cadre nurses must be responsible for maintaining the overall co-ordination, in charge of movement and sick registers of the health care providers, ensuring the proper donning and doffing, auditing of the appropriateness of training of the health care providers, ensuring availability of all supplies including drugs, disposables , consumables, food and other supplies for patients in the isolation unit etc. The area must be strictly restricted to the purpose and clearly demarcated. Collection and transportation of samples must be documented and reports must be properly collected. The preparation and handling must be done as per protocols in designated area and with appropriate co-ordination.

The important points in management are discussed in detail below.

3.1 Triage of patients

- **All patients having fever must report to Fever triage from where they will be sent to the isolation facility in case of epidemiological link.**
- Ensure strict adherence to proper Triage
- **Proper infection control practices must be followed .**

- Ensure personal safety. Wear apron and gloves as appropriate.
- General measures – ABCDE approach (Airway, Breathing, Circulation, Disability, Exposure)
- Plan for appropriate care including intensive supportive care

The most important step in patient care is intensive supportive care.

3.2 Setting up an isolation facility

Who should be kept in isolation facility/ward/ICU

- History of close contact with confirmed case presenting with fever or any symptoms suggestive of Nipah infection (*vide* clinical features)
- Health care provider who has come in contact with the patient with fever / severe headache/altered sensorium/breathlessness/cough
- Patients with high clinical suspicion – Encephalitis/ARDS/Myocarditis during an outbreak

Isolation facility

- Enter all the details of HCWs entering the isolation facility in the Register for ensuring appropriate follow up
- Only HCWs trained in infection control practices should be posted in the isolation facility.
- Monitor staff health, sick people should not be allowed at work.
- They must report immediately through the contact numbers provided if they develop any health related problems during the period and up to another 21 days after the last day of duty
- Infection control practices should be strictly adhered and audited
- Proper instructions should be followed while entering the room
- The entry of the health care provider should be through Donning area, and then to the triage or treatment area. The exit should be separate for the health care provider and there should be facility for doffing and appropriate facility for hand washing / bathing.
- Patient entry and shifting should be separately marked.

- The deceased should be handled separately as per protocols.
- Single room with attached toilet facility must be provided for each patient.
- Separate dedicated equipments (BP apparatus, Stethoscope, Thermometer, Pulse oximeter) for each room and only disposable consumables should be used.

3.3 Treatment

3.3.1 Supportive measures including Standard care of ARDS, Myocarditis and Encephalitis

Standard care must be provided as in any other infection presenting with Encephalitis, ARDS, and/ or Myocarditis.

Care should be individualized according to the clinical presentation and management decisions of the Institutional Medical Board.

The basic supportive measures are outlined below:

- a. Isolation of patient in the isolation facility
- b. Use of PPEs
- c. Hand washing with soap & water before and after handling/visiting patients
- d. Resuscitation (if needed): ABC : Airway,Breathing , Circulation
- e. Care of unconscious patient: change of posture, care of eye, bladder, bowel and mouth
- f. O2 inhalation if there is respiratory difficulty
- g. Nutritional support: oral/NG tube feeding according to the condition of the patient

- h. Maintain fluid and electrolyte balance (Adults: 5% DNS, Children: 5% DNS, half or quarter strength saline)
- i. Fluid restriction: 30% restriction particularly in children. 2/3 of the daily maintenance can be given in children if the child is not in shock
- j. Maintain intake output chart
- k. Bronchodilators when needed may be given through spacers

3.3.2 Drug Treatment options

No approved drugs or vaccines are currently available. There is an unmet need for newer therapeutic options for NiV infection. In diseases like NiV infection, any new drug can be tried only during an outbreak situation and that too strictly adhering to the clinical trial protocol. Hence preparedness is a priority for any future outbreak as the need occur as an emergency. Nipah clinical research facility needs to be adhering to infection control practices, isolation facility, trained clinical and laboratory team and patient and family support for timely information and consent.

Currently the available treatment options are very limited.

3.3.2.1 Ribavirin

Ribavirin is a nucleoside analogue with broad activity against several RNA and some DNA viruses. Used in Malaysian outbreak in an open label trial with 36% reduction in mortality, but further studies in animal models proved ineffective.

In the Kerala outbreak 2018, the drug was started in 10 patients. Both the survivors had received full course of treatment. The dose used was 2 g stat, 1 g 6 hourly 4 days followed by 500mg 6 hourly for 5 days (based on WHO guideline for other haemorrhagic fevers) on confirmation of NiV infection. (Available as 200 mg capsules – Day 1- 10 capsules stat, then 5 capsules of 200 mg 6 hourly for first four days followed by 200 mg capsules 3-2-3-2 for 5th to 10th day – total of 150 capsules). No major side effects reported with Ribavirin. In Kerala outbreak 2019, the one patient with confirmed NiV infection had received Ribavirin but started only on confirmation by 9th day of illness.

Adverse effects of Ribavirin: Rare if used for short term. The Major adverse effects on long term treatment are hypersensitivity, hemolytic anemia, significant teratogenic and/or embryocidal effects in animal studies, bone marrow suppression. The complete haemogram and LFT need to be monitored. Patients who receive Ribavirin must be counselled about the teratogenicity as it may persist in non-plasma compartments for as long as 6 months. Hence effective contraception must be utilized upto 6-months after the drug use.

3.3.2.2 Monoclonal antibody M102.4

M102.4 recognizes the G envelope protein of NiV and appears to block the receptor binding site on the protein preventing adhesion to the Ephrin B2 protein and thereby inhibiting viral entry into the host cell.

During the NiV outbreak in Kozhikode, Kerala in 2018 the m102.4 monoclonal antibody, an experimental therapeutic, was imported for treatment of NiV infected patients on compassionate ground. The SOP (Standard Operating Procedures) and protocols were prepared with the support from ICMR. But it was not used as the outbreak had ended by that time. In Kochi 2019 outbreak the m102.4 was not used as there were no new confirmed cases and the patient was towards the recovery phase when the NiV infection was confirmed. The m102.4 monoclonal antibody is an investigational drug and requires Emergency Research Response & Resources for using such an investigational drug. This becomes a high priority area because of the high mortality of this infection.

The indications and guidelines for use of m102.4 is prepared and to be used with appropriate knowledge and training of the research team as in any other clinical trials with Ethics committee approvals and consenting process. The protocols and SOPs must be referred in detail in this regard and to be modified appropriately according to the then available scientific knowledge.

3.3.2.3 Remdesivir

Remdesivir (GS-5734) is a nucleotide analog prodrug with broad-spectrum antiviral activity that has shown to inhibit filovirus, coronavirus, and paramyxovirus replication. Remdesivir has been effective in nonhuman primates when given as post-exposure prophylaxis, and may be complementary to immunotherapeutic treatments. In vitro, remdesivir showed potent antiviral activity against both Malaysian and Bangladesh genotypes of Nipah virus and reduced replication of Nipah virus Malaysia in primary human lung microvascular endothelial cells by more than four orders of magnitude, warranting further testing of the efficacy of remdesivir against Nipah virus infection in vivo. Because of the poor stability of remdesivir in rodents, the therapeutic efficacy was tested in the African Green monkey [AGM] model of lethal Nipah virus Bangladesh challenge. Remdesivir may be effective in both the treatment of Nipah virus infection as well as in post-exposure prophylaxis on a compassionate ground as data on the same is available only from in vitro studies. Dose of remdesivir for treatment and post exposure prophylaxis is not known. A loading dose of 200 mg iv followed by 100 mg iv once a day may be used for up to 12 days. Remdesivir should be used with caution in patients with creatinine clearance less than 30 ml/min and SGPT more than 5 times upper limit of normal. The same dose and duration may be used for post exposure prophylaxis. Recent studies have shown that Remdesivir was not associated with development of AKI or hepatotoxicity in patients with eCrCl < 30 mL. A recent study on AGM model by Emme de Wit et al showed that remdesivir treatment initiation on 3 dpi [day post infection] provided partial protection from severe Nipah virus disease that was dose dependent, with 67% of animals in the high dose group surviving the challenge. However, remdesivir treatment did not prevent clinical disease, and surviving animals showed histologic lesions in the brain. Thus, early administration seems critical for effective remdesivir treatment during Nipah virus infection. In this study double the dose of remdesivir was used in high dose group. A case of meningoencephalitis from an Ebola virus relapse was treated daily for 14 days with 225 mg remdesivir (Jacobs et al., 2016); this is higher than the currently

recommended human dosing of 200 mg remdesivir loading dose followed by 100 mg daily. However, other than this single patient, there are no safety data to support the use of this treatment regimen. And hence in patients who are rapidly deteriorating due to Nipah due to necrotizing pneumonia and encephalitis, a higher dose of remdesivir ie 200 mg loading and 100 mg twice a day may be administered. Alternatively, remdesivir treatment could be combined with other treatment options such as m102.4 monoclonal antibody treatment, which has shown efficacy in African green monkeys infected with Nipah virus, genotype Bangladesh, and was successfully tested in a phase 1 human clinical trial (Mire et al., 2016; Playford et al., 2020).

[Ref;

1. Remdesivir protects African green monkeys from Nipah virus challenge:

Michael K. Lo et al: Sci Transl Med. 2019 May 29; 11(494): .

doi:10.1126/scitranslmed.aau9242.

2. Late remdesivir treatment initiation partially protects African green monkeys from lethal Nipah virus infection Emmie de Wit et al, Antiviral Research [Volume 216](#), August 2023

3. CDC-Treatment of Nipah]

Favipiravir

The viral RNA-dependent RNA polymerase (RdRp) inhibitor favipiravir was developed by as an antiviral for use against influenza. It is currently licensed in Japan for the treatment of novel or re-emerging influenza and has also undergone several phase 3 clinical trials in the United States and Europe for use against influenza. Favipiravir acts as a purine analogue, which selectively inhibits viral RdRps. In addition to its potent anti-influenza activity, favipiravir

has demonstrated efficacy against a wide variety of other RNA viruses including bunyaviruses, arenaviruses, flaviviruses, norovirus, alphaviruses, enteroviruses, and rhabdoviruses. Of note, recently completed phase 2 clinical trials for use in Ebola virus infection suggest that favipiravir treatment may result in reduced mortality when given to patients with moderate viral loads. Activity against paramyxoviruses has been demonstrated in vitro for respiratory syncytial virus, measles virus, human metapneumovirus (hMPV), human parainfluenza virus, Newcastle disease virus, and avian metapneumovirus and in vivo against hMPV in a hamster model.

In vitro studies and in vivo studies in Syrian hamster model study clearly demonstrate the efficacy of favipiravir against highly pathogenic henipaviruses, and provide a foundation for further studies regarding the optimization of doses, routes, and timing of treatment after infection. Additionally, while in vivo efficacy was demonstrated for NiV-M, efficacy must be confirmed against HeV and NiV-B.

Favipiravir may be used on a compassionate ground for the treatment and post exposure prophylaxis of nipah virus infection. Even though dose of favipiravir for treatment or post exposure prophylaxis in humans is not studied, a loading dose of 1800 mg twice a day for one day followed by 800 mg BD for next 13 days may be used. Favipiravir should be used with caution in patients with creatinine clearance less than 30 ml/min and SGPT more than 5 times upper limit of normal.

[Ref: Favipiravir protects against Nipah virus infection in the hamster model: Brian.E.Dawes et al ;Nature-scientific reports (2018) 8:7604 | DOI:10.1038/s41598-018-25780-3].

POST EXPOSURE PROPHYLAXIS

For post exposure prophylaxis on a compassionate ground Inj Remdesivir or Favipiravir may be used. Since remdesivir has been found to be effective

against NIV-B in both *vitro* and *in vivo* AGM, it may be preferred over favipiravir whose effectiveness was tested only in NIV-M.

Dose –

1. Inj Remdesivir 200 mg loading and 100 mg iv OD for 12 days
2. Favipiravir 1800 mg BD for 1 day followed by 800 mg BD for next 13 days.

Role of immunomodulators in treatment of Nipah virus infection

COVID-19, Ebola virus disease, Nipah virus infection, SARS, and MERS are suggested to be considered for a novel immunological reclassification as acute onset immune dysrhythmia syndrome (n-AIDS) due to altered monocyte, Th1/Th2, as well as cytokines and chemokines balances. n-AIDS is postulated to be the cause of the acute respiratory distress and multi-inflammatory syndromes which are described with fatal COVID-19, and immunomodulators are suggested to effectively manage the mentioned diseases as well as for other disorders caused by Th1/Th2 imbalance. Studies show that Nipah virus might manipulate the inflammatory and immunological response including the interferon homeostasis. Nipah virus infection was also shown to influence the pro-inflammatory and leucocyte attracting cytokines in a manner that determines the disease course and to induce a dysregulated immune recruitment that led to acute vasculitis among other several induced immune dysregulatory mechanisms.

- In diagnosed cases of Nipah encephalitis early administration of immunomodulators [steroid pulse therapy] may be considered in patients with features of raised ICT, GCS ≤ 8 or rapid neurological deterioration.

- As early use of immunomodulators in Nipah encephalitis is not supported by robust scientific evidence, the decision must be made based on opinion of institutional medical board on a case to case basis.
- Immunomodulators may also be considered if patient has features of cytokine storm Grade 3 or 4 or secondary HLH.

3.3.3. Standard care for Encephalitis, Myocarditis and ARDS

a. Standard care for encephalitis

Patients with increased intracranial pressure

- Management of fever, pain, control of cough and other strains. Manage Fever, pain with paracetamol, avoid NSAIDs
- Prevention of seizures
- Control of systemic hypertension
- Elevate head above the heart (usually 30 degrees)
- Furosemide 0.5 to 1.0 mg/kg IV and / or mannitol 1 g/KgIV over 30-60 minutes, Repeat dosing can be given as needed, generally every eight hours—provided circulatory volume is protected
- IV Sedation and mechanical ventilation

Seizures

- Lorazepam 4 mg IV or
- Phenytoin 100mg IV q6-8h or
- Fosphenytoin 150PE q8h IV or
- Levetiracetam 500mg q8-12h IV

Raised ICP (suspect in altered sensorium, anisocoria, lateral rectus palsy, decorticate or decerebrate posturing, abnormal breathing pattern, hypertension etc.)

- Keep head in mid position and head end elevation 15-30° to facilitate venous drainage
- 3% saline 5ml/kg (especially if BP low) or mannitol 2.5 to 5 ml per kg
- IF GCS <8 Intubate with Rapid Sequence Intubation raised ICP protocol
- Maintain euthermia, euglycemia, normal Blood pressure.
- Avoid hypoxia and Hypercarbia.
- Adequate sedo-analgesia

b. Standard care for myocarditis

Supportive therapy for symptoms of acute heart failure with use of diuretics, nitroprusside, ACE inhibitors.

- Inotropes- Dobutamine- 2–5 micrograms/kg/ min, titrated up to 20 micrograms/kg/min- Inotrope and potential vasodilator; lowers blood pressure; give as individual agent as long as systolic blood pressure (SBP) ≤ 90 . Can use as combination therapy with Noradrenaline in patients with low systolic blood pressure.
- Dopamine-3–5-micrograms/kg/ min, titrated up to 20micrograms/kg/ min as needed-Inotrope and vasoconstrictor; increases left ventricular end-diastolic pressure and causes tachyarrhythmias Can be used with dobutamine.
- Norepinephrine-2 - 50 micrograms/min (0.02 – 2 micrograms/kg/minute) titrate to response-Vasoconstrictor and inotrope; preferred as a single agent over dobutamine if SBP < 70 . Can use combined with dobutamine.

c. Standard of care for ARDS

- For mild ARDS, non invasive ventilation stands as the first-line approach.
- Patients who have a diminished level of consciousness, vomiting, upper GI bleed, or other conditions that increase aspiration risk are not candidates for NIPPV.
- Other relative contraindications include hemodynamic instability, agitation, and inability to obtain good mask fit

- Severe ARDS is often associated with refractory hypoxemia, and early identification and treatment of hypoxemia is mandatory.
- For mechanical ventilation specific settings are recommended: limitation of tidal volume (6 ml/kg predicted body weight), adequate high PEEP , a recruitment manoeuvre in special situations, and a ‘balanced’ respiratory rate (20-30/min) for appropriate baseline minute ventilation. Consider the use of incremental FiO₂/PEEP combinations to achieve oxygenation goal (PaO₂ 55-80 mm Hg or SpO₂ 88-95 %)

3.3.4 Other therapeutic options

As there are no approved drug so far and as NiV is an infection with definite potential for human to human transmission and high mortality we must be ready to accept newer therapeutic options in any future outbreaks. The preparedness for research well in advance of the outbreak is the priority in this infection.

3.3.4: Psychosocial interventions: For the patient, for those contacts kept in isolation facility for testing, family members and community contacts must be planned and administered.

3.4 Criteria for discharge and follow up

Criteria for discharge of a patient from isolation facility presented with suspected Nipah and tested negative

1. Tested negative and totally symptom free can be discharged with observation at home for total of 21 days.
2. Tested negative and continue to have fever and other symptoms need a repeat testing after two days to exclude NiV infection .If there is, a strong history of contact with NiV infected patient/sample, the suspect should be subjected to repeat testing every two days till patient becomes symptom free.
3. No need of repeat testing if tested negative on two occasions found negative and an alternate diagnosis is made.

Criteria for discharge of confirmed case

- Clinically stable
- Nipah RT-PCR from all three samples (Throat swab, Urine and blood) reported negative on two occasions at least 5 days apart.
- To be decided by the treating clinician and confirmed by the Medical board

Follow up

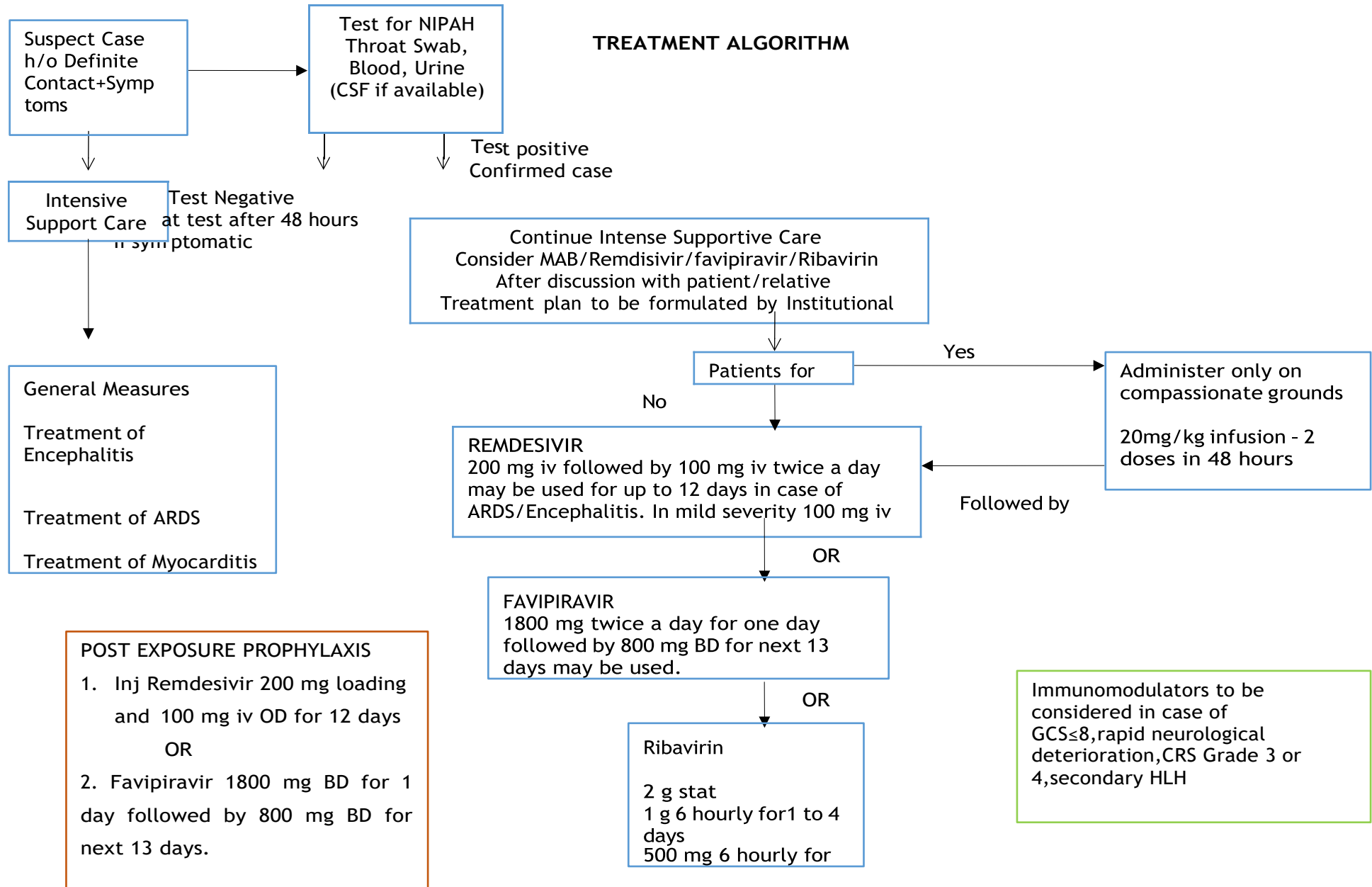
The discharged patient should remain in isolation at their residence for 4 weeks after the discharge.

Patient is advised follow up on 28days, 56 days and 90 days of discharge

All patients with confirmed NiV infection should be kept under long term follow up as there are reports of relapse and late onset encephalitis in an earlier series.

Treatment algorithm

TREATMENT ALGORITHM





GOVERNMENT OF KERALA

Abstract

Health & Family Welfare Department - Nipah Virus Infection -
Revised Treatment Guidelines - Approved - Orders issued

HEALTH & FAMILY WELFARE (F) DEPARTMENT

G.O.(Rt)No.1866/2025/H&FWD Dated,Thiruvananthapuram, 05-07-
2025

Read G.O.(Rt)No.2363/2023/H&FWD dated 16.09.2023.

ORDER

As per Government order read above, Government have approved and issued the "Nipah Virus Infection- Treatment Guidelines Revised - September 2023", incorporating Epidemiology, burden of disease, transmission, diagnosis, and management of Nipah virus infection.

In the light of the recent reports of Nipah virus cases in Palakkad and Malappuram Districts of Kerala, and to ensure effective disease control and management, Government are pleased to revise the existing Standard Operating Procedures (SOP) incorporating the guidelines related to post-exposure prophylaxis, quarantine, and testing of primary contacts of Nipah virus, as annexed to this order.

(By order of the Governor)

Dr. Rajan Namdev Khobragade I A S
ADDITIONAL CHIEF SECRETARY

To:

The State Mission Director -National Health Mission,
Thiruvananthapuram.

The Director of Health Services, Thiruvananthapuram.

The Director of Medical Education, Thiruvananthapuram.

All District Medical Officers (Health).

All Superintendents, Medical College Hospitals.

Principal Accountant General (A&E/Audit) Kerala.

Information & Public Relations (Web & New Media) Department.
Stock File/ Office Copy to F2/288/2023-HEALTH

Forwarded /By order

Signed by

Jimmy Kochu Paul

Section Officer

Date: 05-07-2025 16:03:58

Copy to:-

Private Secretary to the Hon'ble Chief Minister

Private Secretary to the Hon'ble Minister (Health)

OSD Chief Secretary

PS to Additional Chief Secretary (Health)

Guidelines for Post-exposure prophylaxis, quarantine and testing of

Primary contacts of Nipah virus infection

RISK CATEGORY	DESCRIPTION	POST EXPOSURE PROPHYLAXIS
Highest risk category	- Any contact with body fluids (blood, urine, saliva etc) of a confirmed case of Nipah without proper PPE. [Gown, gloves, well fitted triple layer/N95 mask, faceshield] - Any person who performs intubation /BAL /nebulization/ suctioning [open] of a confirmed case without N95 mask and face shield.	Inj Remdesivir 200 mg loading followed by 100 mg intravenous OD for 12 days Drug should be administered in a hospital setting for monitoring.
High risk category	- Has spend time with a confirmed case in close proximity [within 6 feet] or in closed space for more than or equal to 6 hrs without properly worn triple layer/N95 mask - Any contact with body fluids of a probable case who died without a lab confirmation of Nipah.	Favipiravir 1800 mg Q12H on day 1 followed by 800 mg Q12H for next 13 days
Low risk category	- Any other contact such as touching intact skin, contact with clothes or linen or any other item used by confirmed case. - Has spend time with a confirmed case in close proximity or in closed space for less than or equal to 6 hrs without mask	No need for chemoprophylaxis

Since there is not enough scientific evidence to support the use of either, remdesivir/favipiravir as PEP, an informed consent should be obtained prior to initiation of these drugs for chemoprophylaxis. A baseline hemogram, LFT, RFT should be performed for all those who receive PEP with either remdesivir or favipiravir. Investigations must be repeated after 7 days and at the end of PEP or based on symptoms. A baseline ECG should be obtained for those put on remdesivir and QT interval must be reassessed after 7 days of remdesivir. Based on our prior experience with these drugs as PEP, risk vs benefit favour their administration as PEP for those with highest/high risk exposure.

RISK CATEGORY	FOLLOW UP ACTION
Highest/High Risk	Asymptomatic - home quarantine with active follow up for fever by health workers by telephonic interview, twice for 21 days from day of last contact. Symptomatic (fever) - immediate admission in designated isolation room.
Low risk	Asymptomatic - No need for quarantine. Line list of all low risk contacts should be maintained. They should be monitored for symptoms twice a day by telephonic interview for 21 days from day of last contact. If they develop symptoms, should be hospitalized and isolated and testing for Nipah should be undertaken.

For asymptomatic contacts, testing for Nipah virus infection is not required to release them at end of 21 days of quarantine.



Health & Family Welfare Department,
Govt of Kerala.
Thiruvananthapuram, Kerala

2/NIPAH/H&FWD- NIPAH Treatment Protocol (Amendment- Sept 2021)

– dated 5TH SEPT 2021

Ref: 1/NIPAH - Management plan for Nipah outbreak in Kozhikode

– dated 5th Sept 2021

The Nipah outbreak in Kozhikode is reported on 4th September 2021 and received confirmation from NIV Pune. Accordingly, the guidelines cited in reference above were issued regarding management action plan, revised treatment guidelines and discharge guidelines for follow up in all Government and Private Hospitals in Kerala.

The amended detailed treatment guidelines are appended as Annexure 1.

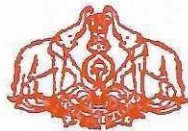
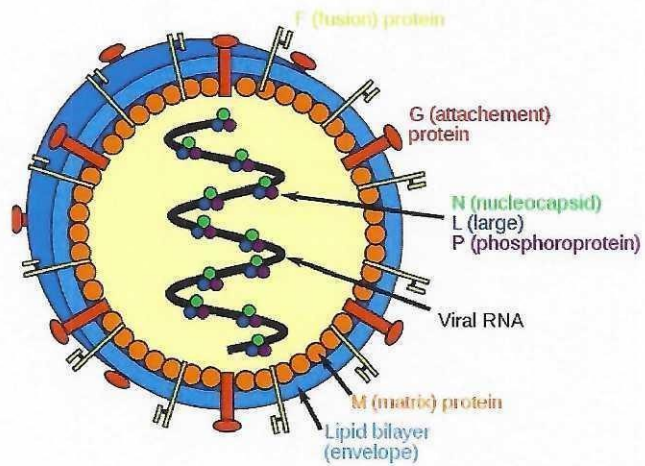
Principal Secretary

ANNEXURE 1

NIPAH Virus Infection

REVISED TREATMENT PROTOCOL

September 2021



Department of Health & Family Welfare

Government of Kerala

3. Management of Nipah virus infection

NiV infection is different from other viral infections or pathogens because of its potential of transmission from human to humans with high mortality and no definite treatment or vaccine so far identified. So the management essentially involves infection control practices and triaging, isolation and management of patients including intensive supportive care. The Emergency Department must be strengthened for early identification, proper isolation and management of patients suspected of NiV infection to minimize the risk of human to human transmission.

To manage the fever triage and isolation facility, a separate team should be trained and appropriately delegated for its implementation. The team should include health care providers as a single unit. The senior cadre nurses must be responsible for maintaining the overall co-ordination, in charge of movement and sick registers of the health care providers, ensuring the proper donning and doffing, auditing of the appropriateness of training of the health care providers, ensuring of all supplies including drugs, disposables and consumables, food and other supplies for patients in the isolation unit etc. The area must be strictly restricted to the purpose and clearly demarcated. Collection and transportation of samples must be documented and reports must be properly collected. The preparation and handling must be done as per protocols in designated area and with appropriate co-ordination. The important points in management are discussed in detail below.

3.1 Triage of patients

- **All patients having fever must report to Fever triage from where they will be sent to the isolation facility**
- Ensure strict adherence to proper Triage
- **Proper infection control practices must be followed up.**
- Ensure personal safety. Wear apron and gloves as appropriate.
- General measures – ABCDE approach (Airway, Breathing, Circulation, Disability, Exposure)
- Plan for appropriate care including intensive supportive care

The most important step in patient care is intensive supportive care.

3.2 Setting up an isolation facility

Who should be kept in isolation facility/ward/ICU

- History of close contact with confirmed case presenting with fever or any symptoms suggestive of Nipah infection (*vide* clinical features)
- Health care provider who has come in contact with the patient with fever / severe headache/ altered sensorium/ breathlessness/ cough
- Patients with high clinical suspicion – Encephalitis/ARDS/Myocarditis during an outbreak

Isolation facility

- Enter all the details of HCWs entering the isolation facility in the Register for ensuring appropriate follow up
- Only HCWs trained in infection control practices should be posted in the isolation facility.
- Monitor staff health, sick people should not be allowed at work.
- They must report immediately through the contact numbers provided if they develop any health related problems during the period and up to another 21 days after the last day of duty
- Infection control practices should be strictly adhered and audited
- Proper instructions should be followed while entering the room
- The entry of the health care provider should be through Donning area, and then to the triage or treatment area. The exit should be separate for the health care provider and there should be facility for doffing and appropriate facility for hand washing / bathing.
- Patient entry and shifting should be separately marked.
- The deceased should be handled separately as per protocols.
- Single room with attached toilet facility must be provided for each patient.

- Separate equipments (BP apparatus, Stethoscope, Thermometer, Pulse oximeter) for each room and use only disposable consumables to be used.

3.3 Treatment

3.3.1 Supportive measures including Standard care of ARDS, Myocarditis and Encephalitis

Standard care must be provided as in any other infection presenting with Encephalitis, ARDS, and or Myocarditis.

Care should be individualized according to the clinical presentation and management decisions of the treating clinician.

The basic supportive measures are outlined below:

- Isolation of patient in the isolation facility
- Use of PPEs
- Hand washing with soap & water before and after handling/visiting patients
- Resuscitation (if needed): ABC : Airway, Breathing , Circulation
- Care of unconscious patient: change of posture, care of eye, bladder, bowel and mouth
- O₂ inhalation if there is respiratory difficulty
- Nutritional support: oral/NG tube feeding according to the condition of the patient
- Maintain fluid and electrolyte balance (Adults: 5% DNS, Children: 5% DNS, half or quarter strength saline)
- Fluid restriction: 30% restriction particularly in children. 2/3 of the daily maintenance can be given in children if the child is not in shock
- Maintain intake output chart
- Bronchodilators when needed may be given through spacers

3.3.2 Drug Treatment options

No approved drugs or vaccines are currently available. There is an unmet need for newer therapeutic options for NiV infection. In diseases like NiV infection, any new drug can be tried only during an outbreak situation and that too strictly adhering to the clinical trial protocol. Hence preparedness is a priority for any future outbreak as the need occur as an emergency. Nipah clinical research facility needs to be adhering to infection control practices, isolation facility, trained clinical and laboratory team and patient and family support for timely information and consenting.

Currently the available treatment options are very limited.

3.3.2 .1 Ribavirin

Ribavirin, a nucleoside analogue with broad activity against several RNA and some DNA viruses. Used in Malaysian outbreak in an open label trial with 36% reduction in mortality, but further studies in animal models proved ineffective.

In the Kerala outbreak 2018, the drug was started in 10 patients, both the survivors have received full course of treatment. The dose used was 2 g stat, 1 g 6 hourly 4 days followed by 500mg 6 hourly for 5 days (based on WHO guideline for other haemorrhagic fevers) on confirmation of NiV infection. (Available as 200 mg capsules – Day 1- 10 capsules stat, then 5 capsules of 200 mg 6 hourly for first four days followed by 200 mg capsules 3-2-3-2 for 5th to 10th day – total of 150 capsules). No major side effects reported with Ribavirin. In Kerala outbreak 2019, the one patient with confirmed NiV infection had received Ribavirin but started only on confirmation by 9th day of illness.

Adverse effects of Ribavirin: Rare if used for short term. The Major adverse effects on long term treatment are hypersensitivity, hemolytic anemia, significant teratogenic and/or embryocidal effects in animal studies, bone marrow suppression. The complete haemogram and LFT need to be monitored. Patients received Ribavirin must be counselled about the teratogenicity as it may persist in non-plasma compartments for as long as 6 months. Hence effective contraception must be utilized upto 6-months after the drug use.

3.3.2.2 Monoclonal antibody m102.4

M102.4 recognizes the G envelope protein of NiV and appears to block the receptor binding site on the protein preventing adhesion to the Ephrin B2 protein and thereby inhibiting viral entry into the host cell.

During the NiV outbreak in Kozhikode, Kerala in 2018 the m102.4 monoclonal antibody, an experimental therapeutic, was imported for treatment of NiV infected patients on compassionate ground. The SOP (Standard Operating Procedures) and protocols were prepared with the support from ICMR. But it was not used as the outbreak was ended by that time. In Kochi 2019 outbreak as there were no new confirmed cases and the patient was towards the recovery phase when the NiV infection was confirmed, the drug was not used. The protocols, the drug, facility and trainings were started in anticipation. The m102.4 monoclonal antibody is an investigational drug and requires Emergency Research Response & Resources for using such an investigational drug. This becomes a high priority area because of the high mortality of this infection.

The indications and guidelines for use of m102.4 is prepared and to be used with appropriate knowledge and training of the research team as in any other clinical trials with Ethics committee approvals and consenting process. The protocols and SOPs must be referred in detail in this regard and to be modified appropriately according to the then available scientific knowledge.

3.3.2.3 Remdesivir

Remdesivir (GS-5734) is a nucleotide analog prodrug with broadspectrum antiviral activity that was shown to inhibit filovirus, coronavirus, and paramyxovirus replication. Remdesivir has been effective in nonhuman primates when given as post-exposure prophylaxis, and may be complementary to immunotherapeutic treatments. In vitro, remdesivir showed potent antiviral activity against both Malaysian and Bangladesh genotypes of Nipah virus and reduced replication of Nipah virus Malaysia in primary human lung microvascular endothelial cells by more than four orders of magnitude, warranting further testing of the efficacy of remdesivir against Nipah virus infection in vivo. Because of the poor stability of remdesivir in rodents, the therapeutic efficacy was tested in the African Green monkey [AGM] model of lethal Nipah virus Bangladesh challenge. Remdesivir may be effective in both the treatment of nipah virus infection as well as in post-exposure prophylaxis on a compassionate ground as data on the same is available only from in vitro studies. Dose of remdesivir for treatment and post exposure prophylaxis is not known. A loading dose of 200 mg iv followed by 100 mg iv once a day may be used for upto 12 days. Remdesivir should be used with caution in patients with creatinine clearance less than 30 ml/min and SGPT more than 5 times upper limit of normal. The same dose and duration may be used for post exposure prophylaxis.

[Ref; Remdesivir protects African green monkeys from Nipah virus challenge: Michael K. Lo et al: Sci Transl Med. 2019 May 29; 11(494): . doi:10.1126/scitranslmed.aau9242.]

3.3.2.4 Favipiravir

The viral RNA-dependent RNA polymerase (RdRp) inhibitor favipiravir was developed by as an antiviral for use against influenza. It is currently licensed in Japan for the treatment of novel or re-emerging influenza and has also undergone several phase 3 clinical trials in the United States and Europe for use against influenza. Favipiravir acts as a purine analogue, which selectively inhibits viral RdRps. In addition to its potent anti-influenza activity, favipiravir has demonstrated efficacy against a wide variety of other RNA viruses including bunyaviruses, arenaviruses, flaviviruses, norovirus, flaviviruses, alphaviruses, enteroviruses, and rhabdoviruses. Of note, recently completed phase 2 clinical trials for use in Ebola virus infection suggest that favipiravir treatment may result in reduced mortality when given to patients with moderate viral loads. Activity against paramyxoviruses has been demonstrated in vitro for respiratory syncytial virus, measles virus, human metapneumovirus (hMPV), human parainfluenza virus, Newcastle disease virus, and avian metapneumovirus and in vivo against hMPV in a hamster model.

In vitro studies and in vivo studies in Syrian hamster model study clearly demonstrate the efficacy of favipiravir against highly pathogenic henipaviruses, and provide a foundation for further studies regarding the optimization of doses, routes, and timing of treatment after infection. Additionally, while in vivo efficacy was demonstrated for NiV-M, efficacy must be confirmed against HeV and NiV-B.

Favipiravir may be used on a compassionate ground for the treatment and post exposure prophylaxis of nipah virus infection. Even though dose of favipiravir for treatment or post exposure prophylaxis in humans is not studied, a loading dose of 1800 mg twice a day for one day followed by 800 mg BD for next 13 days may be used. Favipiravir should be used with caution in patients with creatinine clearance less than 30 ml/min and SGPT more than 5 times upper limit of normal.

[Ref: Favipiravir protects against Nipah virus infection in the hamster model: Brian.E.Dawes et al ;Nature-scientific reports (2018) 8:7604 | DOI:10.1038/s41598-018-25780-3].

POST EXPOSURE PROPHYLAXIS

For post exposure prophylaxis on a compassionate ground Inj Remdesivir or Favipiravir may be used. Since remdesivir has been found to be effective against NIV-B in both vitro and in vivo AGM, it may be preferred over favipiravir whose effectiveness was tested only in NIV-M.

Dose –

1. Inj Remdesivir 200 mg loading and 100 mg iv OD for 12 days
2. Favipiravir 1800 mg BD for 1 day followed by 800 mg BD for next 13 days.

3.3.3. Standard care for Encephalitis, Myocarditis and ARDS

a. Standard care for encephalitis

Patients with increased intracranial pressure

- Management of fever, pain, control of cough and other strains. Manage Fever, pain with paracetamol, avoid NSAIDs
- Prevention of seizures
- Control of systemic hypertension
- Elevate head above the heart (usually 30 degrees)
- Furosemide 0.5 to 1.0 mg/kg IV and / or mannitol 1 g/Kg IV over 30-60 minutes, Repeat dosing can be given as needed, generally every eight hours—provided circulatory volume is protected
- IV Sedation and mechanical ventilation

Seizures

- Lorazepam 4 mg IV or
- Phenytoin 100mg IV q6-8h or
- Fosphenytoin 150PE q8h IV or
- Levetiracetam 500mg q8-12h IV

b. Standard care for myocarditis

Supportive therapy for symptoms of acute heart failure with use of diuretics, nitroprusside, ACE inhibitors.

- Inotropes- Dobutamine- 2–5 micrograms/kg/ min, titrated up to 20 micrograms/kg/min- Inotrope and potential vasodilator; lowers blood pressure; give as individual agent as long as systolic blood pressure (SBP) ≥ 90 . Can use with dopamine.
- Dopamine-3–5-micrograms/kg/ min, titrated up to 20micrograms/kg/ min as needed-Inotrope and vasoconstrictor; increases left ventricular end-diastolic pressure and causes tachycardia. Can be used with dobutamine.
- Norepinephrine-2 - 50 micrograms/min (0.02 – 2 micrograms/kg/minute) titrate to response-Vasoconstrictor and inotrope; preferred as a single agent over dobutamine if SBP < 70 . Can use combined with dobutamine.

c. Standard of care for ARDS

- For mild ARDS, non invasive ventilation stands as the first-line approach.
- Patients who have a diminished level of consciousness, vomiting, upper GI bleed, or other conditions that increase aspiration risk are not candidates for NIPPV.
- Other relative contraindications include hemodynamic instability, agitation, and inability to obtain good mask fit
- Severe ARDS is often associated with refractory hypoxemia, and early identification and treatment of hypoxemia is mandatory.
- For mechanical ventilation specific settings are recommended: limitation of tidal volume (6 ml/kg predicted body weight), adequate high PEEP , a recruitment manoeuvre in special situations, and a 'balanced' respiratory rate (20-30/min) for appropriate baseline minute ventilation. Consider the use of incremental FiO₂/PEEP combinations to achieve oxygenation goal (PaO₂ 55-80 mm Hg or SpO₂ 88-95 %)

3.3.4 Other therapeutic options

No approved drug so far. As NiV is an infection with definite potential for human to human transmission and high mortality we must be ready to accept newer therapeutic options in any future outbreaks. The preparedness for research well in advance of the outbreak is the priority in this infection.

3.3.4: Psychosocial interventions: For the patient, for those contacts kept in isolation facility for testing, family members and community contacts must be planned and administered.

3.4 Criteria for discharge and follow up

Criteria for discharge of a patient from isolation facility presented with suspected Nipah and tested negative

1. Tested negative and totally symptom free can be discharged with observation at home for total of 21 days.
2. Tested negative and continue to have fever and other symptoms need a repeat testing after two days to exclude NiV infection and there exist a strong history of contact with NiV infected patient/sample must have repeat testing in every two days till patient becomes symptom free.
3. No need of repeat testing if tested negative on two occasions found negative and an alternate diagnosis is made.

Criteria for discharge of confirmed case

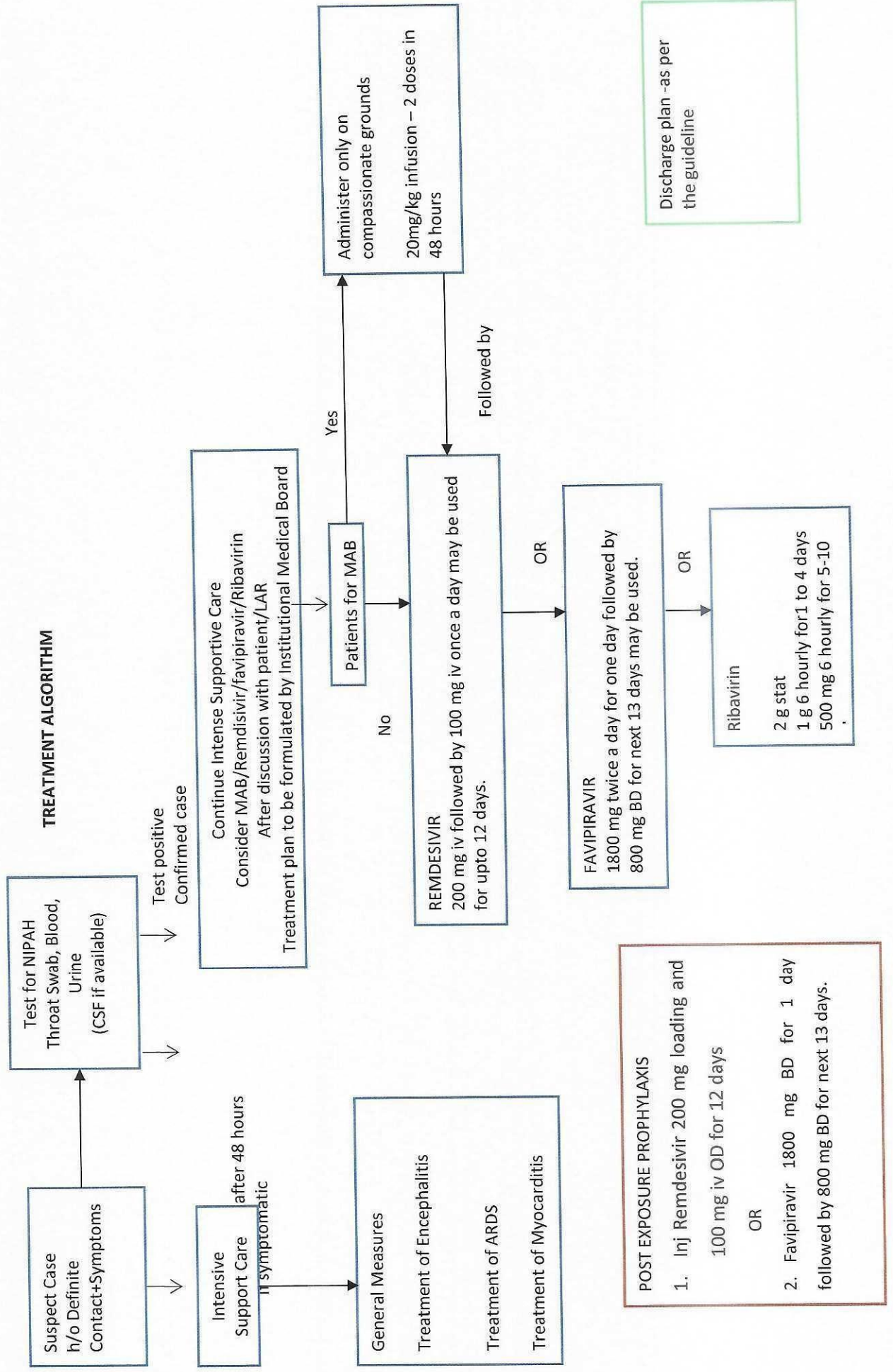
- Clinically stable
- Nipah RT-PCR from all three samples (Throat swab, Urine and blood) reported negative on two occasions at least 5 days apart.
- To be decided by the treating clinician and confirmed by the Medical board

Follow up

The discharged patient should remain in isolation at their residence for 4 weeks after the discharge.

Patient is advised follow up on 28 days, 56 days and 90 days of discharge

All patients with confirmed NiV infection should be kept under long term follow up as there were reports of relapse and late onset encephalitis in an earlier series.





Health & Family Welfare Department,
Govt of Kerala.
Thiruvananthapuram, Kerala

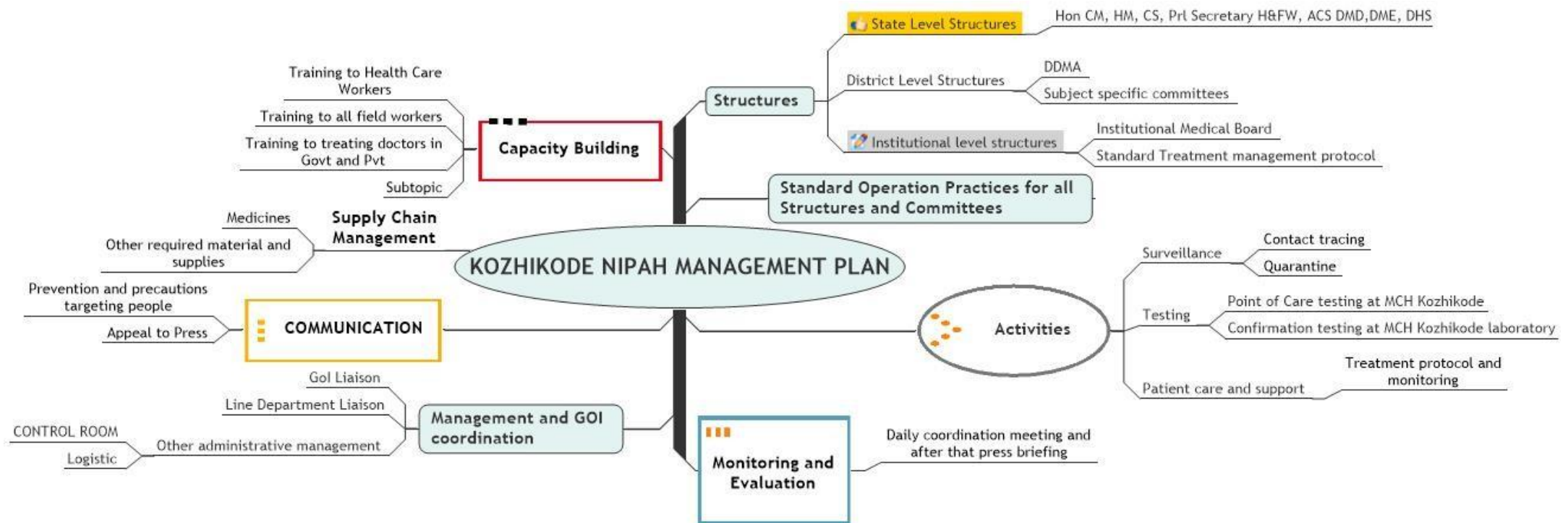
MANAGEMENT PLAN FOR NIPAH OUTBREAK IN KOZHIKODE – 5TH SEPT 2021

The Nipah outbreak in Kozhikode is reported on 4th September 2021 and received confirmation from NIV Pune. Accordingly, the following NIPAH protocol shall be followed by all Government and Private Hospitals in Kozhikode.

1. All districts to maintain vigil and ensure acute encephalitis surveillance.
2. The district shall work out over all arrangement as per the Nipah Management Plan – Annexure 1
3. Kozhikode district action plan is appended as – Annexure 2
4. The revised Treatment guideline is appended as Annexure 3
5. The Discharge guideline is appended as Annexure 4

Based on the management done during the last two Nipah outbreaks and knowledge available, the Guidelines for Nipah outbreak management have been published by Department of Health and Family Welfare Government of Kerala is appended for reference as Annexure 5.

Principal Secretary



ACTION PLAN FOR NIPAH OUTBREAK 2021

September 2021

KOZHIKODE DISTRICT



NIPAH VIRUS – CORE COMMITTEE

Sl. No.	Action point	Name	Designation	phone
1.	Surveillance team	Dr Sarala Nair	DSO	8848057426
2.	Sample Test and result Management	Dr Beena	Microbiology HOD	9446161949
3.	Linkage of Suspected New Patients to Index Case	Dr Asma	Community medicine	9846120001
4.	Contact List Management	Dr Seethu Ponnuthambi	MO	8547036100
5.	Patient Transportation Management	Dr Lathika	JAMO	9847858421
6.	Material & Logistics Management	Mr Baiju	KMSCL	9446252658
7.	Case treatment	Dr Chandni	HOD Emergency dept Medical college	9447202748
8.	Expert Visit coordination	Dr Anuradha	JAMO	7356522250
9.	IEC and media management	Mr Baby	Mass media	9495257810
10	Infrastructure management	Dr Sreejayan	Superintendent MCH	9745636707
11	Call center management	Dr Akhilesh	Aardram assistant nodal officer	9895550777
12	Dead body management	Dr Nilu	Corporation health officer	8547553444
13	Data analysis	Dr Arjun C M	MO	9496344681
14	Psychological support team	Dr Issudheen	NMHP coordinator	9895292298
15	Intersectoral coordination	Dr Naveen A	DPM	9946105492

Daily core committee meeting under leadership of Ministers, District collector, DMO and Principal at 4 PM, Government guest house Kozhikode followed by media briefing.

New email id -nipahcellkkd2021@gmail.com

Nipah virus September 2021 -Kozhikode action plan :

1. 24 *7 control room Guest house Calicut
 - a. Control room access is authorized only to those engaged in control room activities
 - b. Identity proof is mandatory
 - c. In and out movement is written on log book
 - d. Team members of different groups has to work in their assigned areas
 - e. Review meetings will be held in mornings and evenings
 - f. Documentation team will record minutes of all meetings
 - g. Decisions taken will be communicated to the respective groups
 - h. Implementation status of the decisions taken will be monitored
 - i. Emergency meetings will be informed by phone to the respective teams by the documentation team
 - j Communication to the media will be done only through the media management team
 - k. Health bulletin release at 4 pm by freezing the data as at 5 pm and shared with the State Cell and Press briefing at 5 pm
2. 24*7 call center
 - a. Establishing call centre with 10 landline connections.
 - b. Linkage with DISHA system to answer medical queries ,logistics and administrative issues regarding Nipah and related health problems with proper documentation and report.

Calls today	Cumulative calls	Queries	Self reporting	Follow up	remarks

3. Surveillance team

Will be under DSO and epidemiologist and active surveillance in defined area will be done with medical teams . Overall coordination of active case finding , diagnosis and reporting of cases will be under this team. Hospital surveillance and field surveillance.
Scrutiny off all encephalitis deaths in past one month and route map of the cases for establishing any association.

Dat e	Suspected Cases			Probable Cases			Confirmed case		
Dat e of rep ort	Till date	Toda y(date) (last 24hrs)	Cumul ative	Till date	Toda y(date) (last 24hrs)	Cumul ative	Till date	Toda y(date) (last 24hrs)	Cumul ative

Confirmed Deaths			Probable Deaths		
Till date	Today(date) (last 24hrs)	Cumulative	Till date	Today(date) (last 24hrs)	Cumulative

a. Suspect Nipah Case

Person from an area/ locality affected by a Nipah virus disease outbreak who has:

- Acute Fever with new onset of altered mental status or seizure and/or
- Acute Fever with severe headache and/or
- Acute Fever with Cough or shortness of breath

b. Probable Nipah case

Suspect case-patient/s who resided in the same village where suspect/confirmed case of NIPAH were living during the outbreak period and who died before complete diagnostic specimens could be collected

OR

Suspect case-patients who came in direct contact with confirmed case-patients in a hospital setting during the outbreak period and who died before complete diagnostic specimens could be collected.

c. Confirmed Nipah Case

Suspected case who has laboratory confirmation of Nipah virus infection either by:

- Nipah virus RNA identified by PCR from throat swab, urine, serum or cerebrospinal fluid (optional).
- Isolation of Nipah virus from throat swab, urine, serum or cerebrospinal fluid.

4. Contact tracing

Will be under community medicine department and DMO team.

- a. By central contact tracing team
- b. By field workers.

Risk Stratification of Contacts

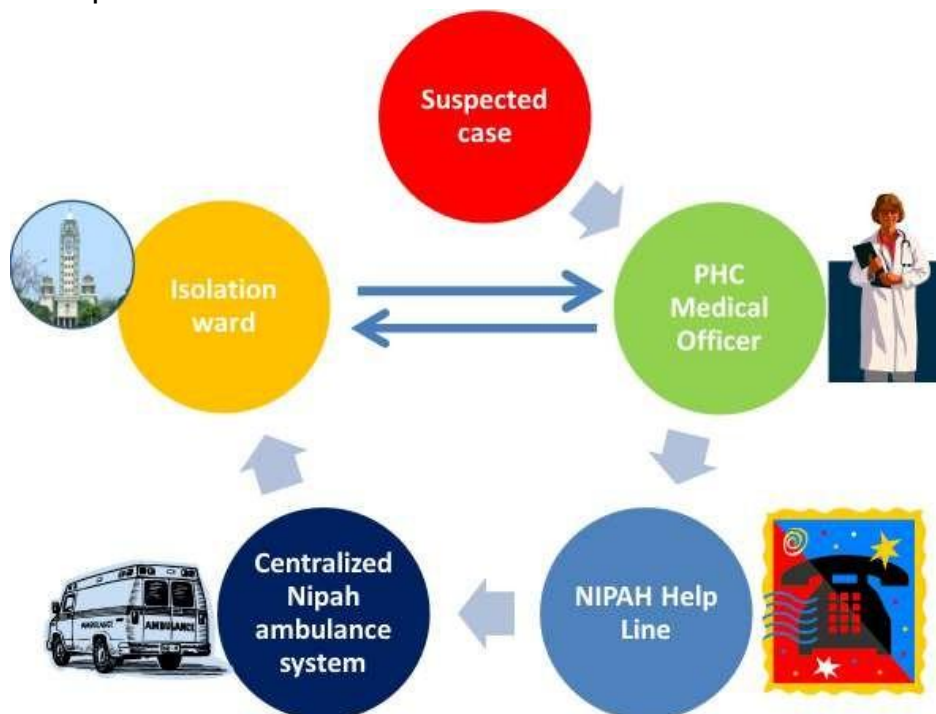
RISK CATEGORY	DESCRIPTION
High risk	1. Any contact with body fluids (blood, urine, saliva etc) of a confirmed case of Nipah 2. Any contact with body fluids of a probable case who died without a lab confirmation of Nipah 3. Spend time in close proximity or in closed space for more than or equal to 12 hrs
Low risk	Any other contact such as touching, contact with clothes or linen or any other item used

Follow-up Action

RISK CATEGORY	Follow-up Action
High risk	Asymptomatic- Home quarantine with active follow up for fever, by health workers using telephone, twice a day for 21 days Symptomatic (fever)- Immediate admission in designated isolation ward with ICU facility
Low risk	Asymptomatic- Home quarantine and follow up for fever by telephone. Symptomatic (fever)- Immediate admission in designated isolation facility

5. Patient transportation.

Three 108 ambulances can be kept exclusively for Nipah cases transportation.



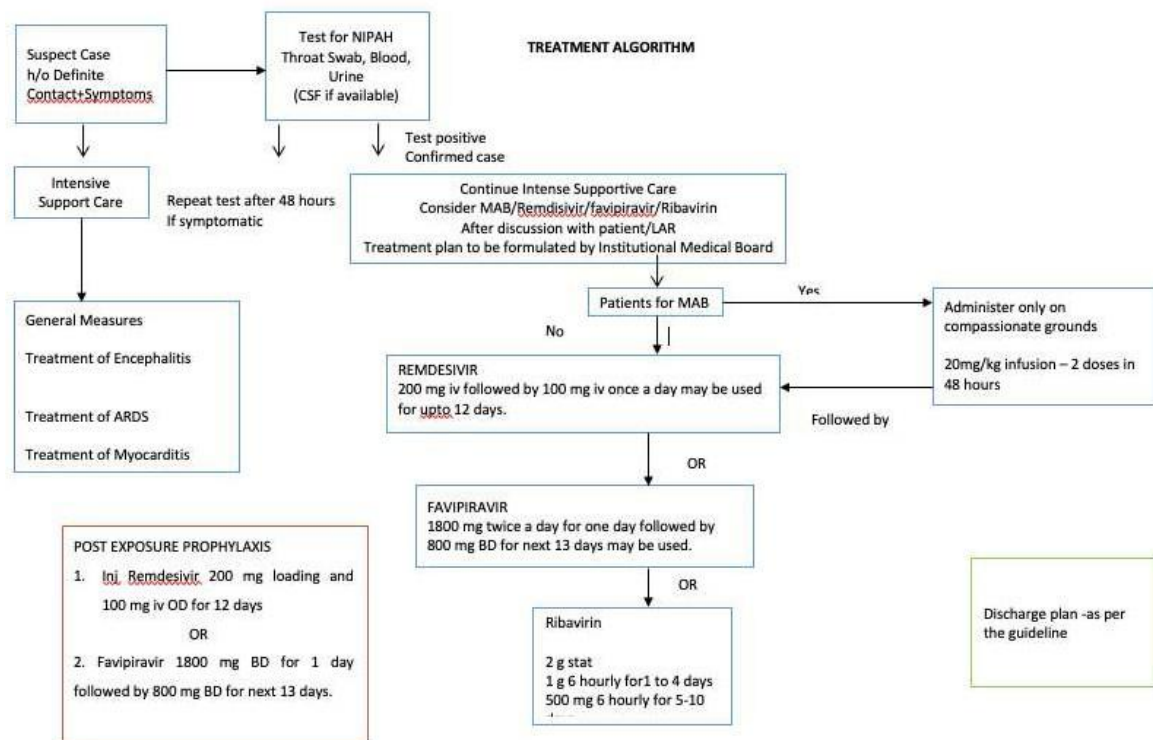
6. Triage and Isolation facility

Pay ward vertical block in Medical college. All covid cases in pay wards and geriatric ward will be shifted to PMSSY and other institutions.



7. Treatment

As per the Treatment Protocol – ANNEXURE 3



8. Testing and sample management.

Planning for establishing a point of care (POC) lab. Till then we can send the sample to NIV PUNE.

Sample Sent			Result Published			Positive		
Till yesterday	Today	Cumulative	Till yesterday	Today	Cumulative	Till yesterday	Today	Cum

9. Material management

As of now sufficient materials are in stock. KMSCL will mobilize necessary consumables as per need.

Sl. No	Item	Available Stock (DMO)	Receipt on (DMO)	Issue on (DMO)	Balance (DMO)	MCH Stock	Requirement (MCH+ DMO)	Remarks
1	PPE kit							
2	3 layer mask							
3	Gloves							
4	Mask N95							
5	Hand rub							

10. Psychological support.

DMHP team will take the lead for giving psychological support for the people.

11. IEC /BCC

1. Daily press release
2. Single media spokesperson-health minister
3. Social media
4. Media scan for false news.

12. Training and awareness of all health workers in both government and private sector.

13. Expert visit management

Only the teams with state permission will be allowed to do field activities in the district.

Team	Members	Institution	Activity Details
Team A			
Team B			
Team C			

14. Source identification.

Animal husbandry has a pivot role in identifying the source . Inter departmental coordination is inevitable in this process.

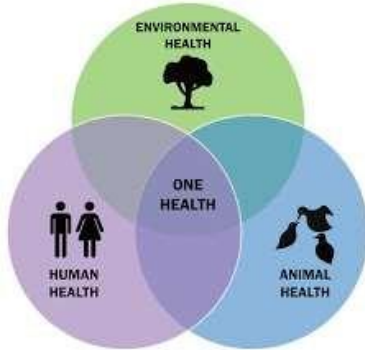
15. HR management

Medical college should be supported with more HR and funds to tackle the crisis. NHM will support as per SMD 's directions.

16. Funeral guidelines.

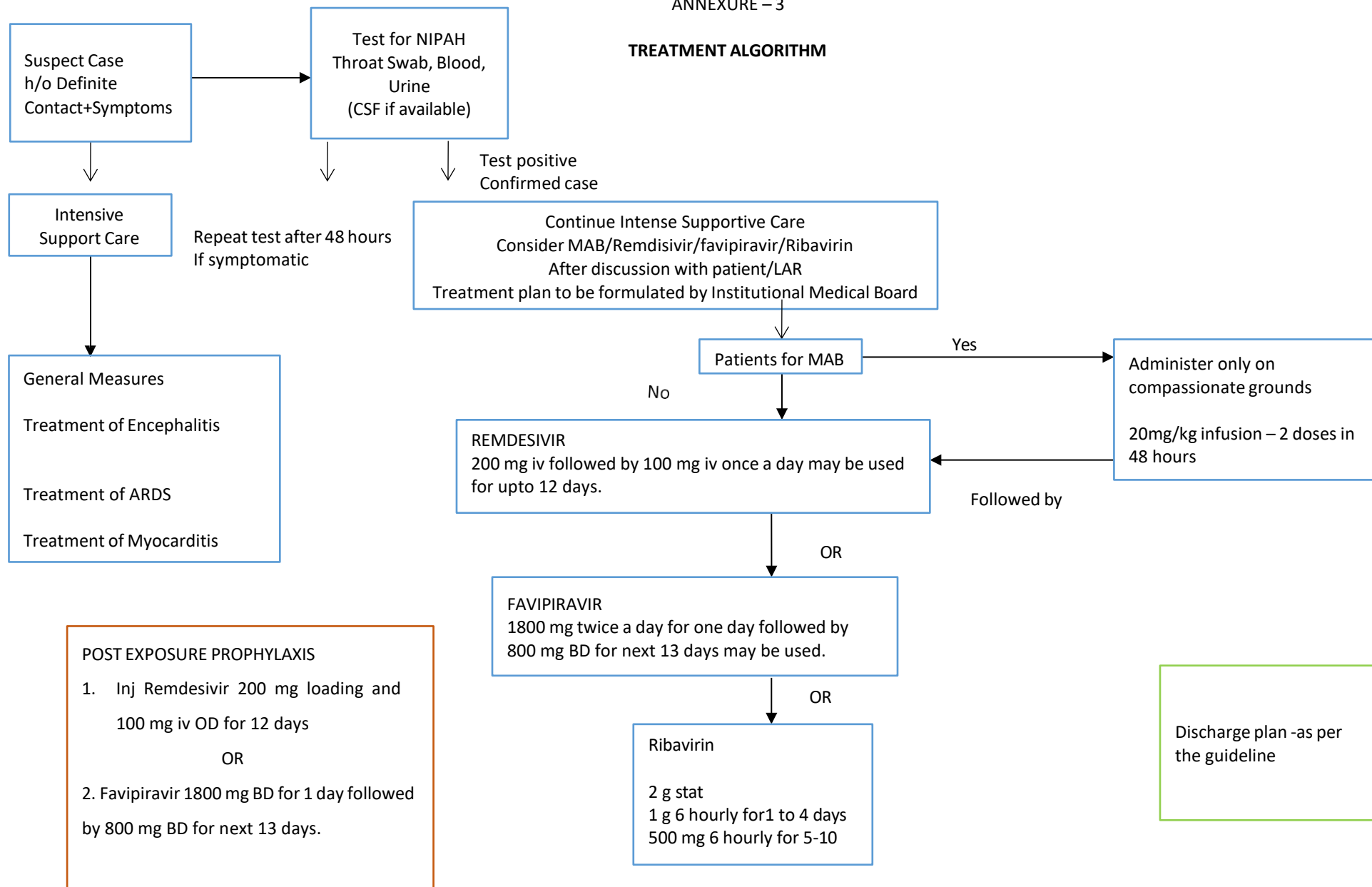
As per guidelines body will be buried in corporation itself.

17. Concept of one health should be promoted .

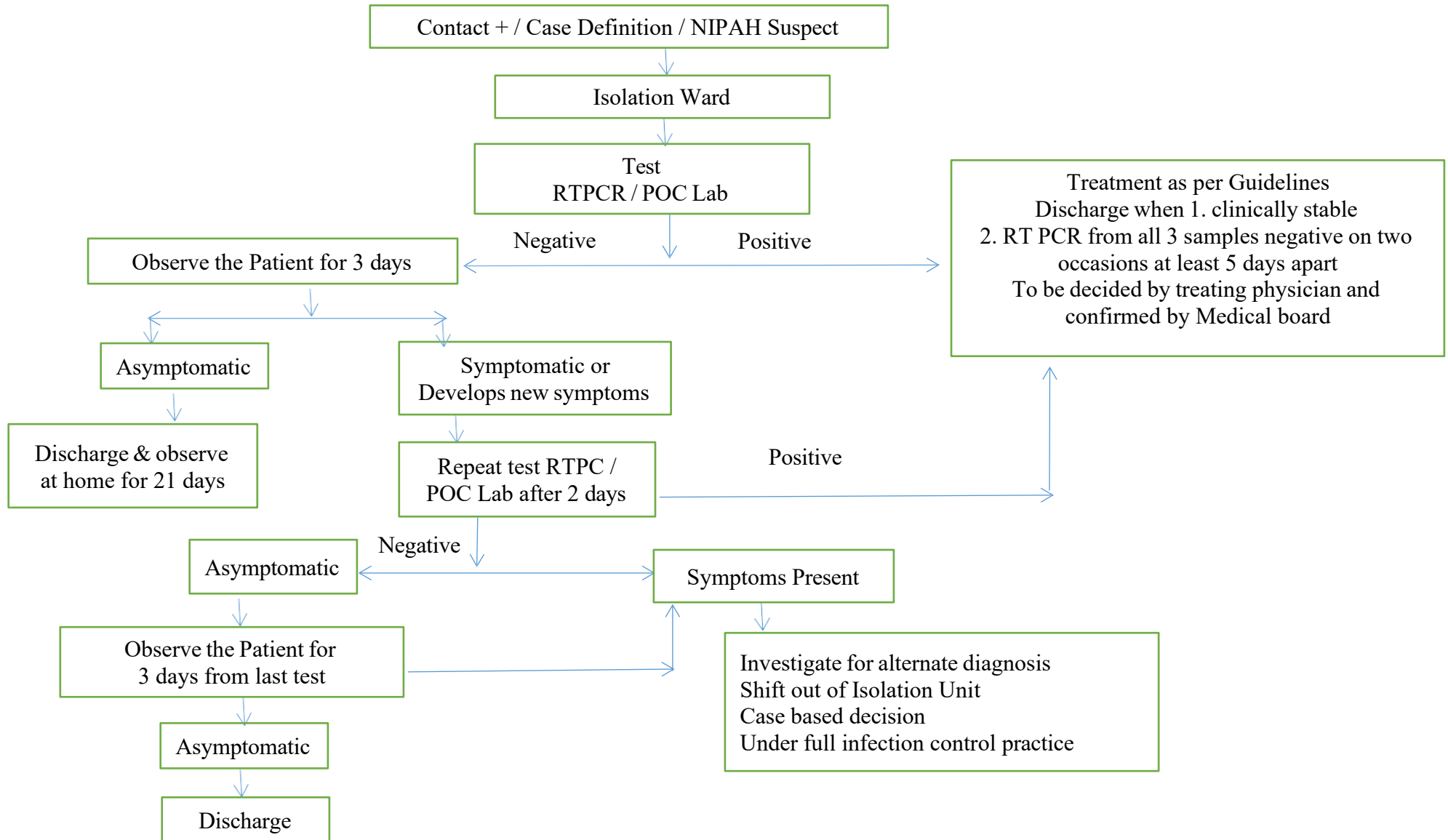


ANNEXURE – 3

TREATMENT ALGORITHM



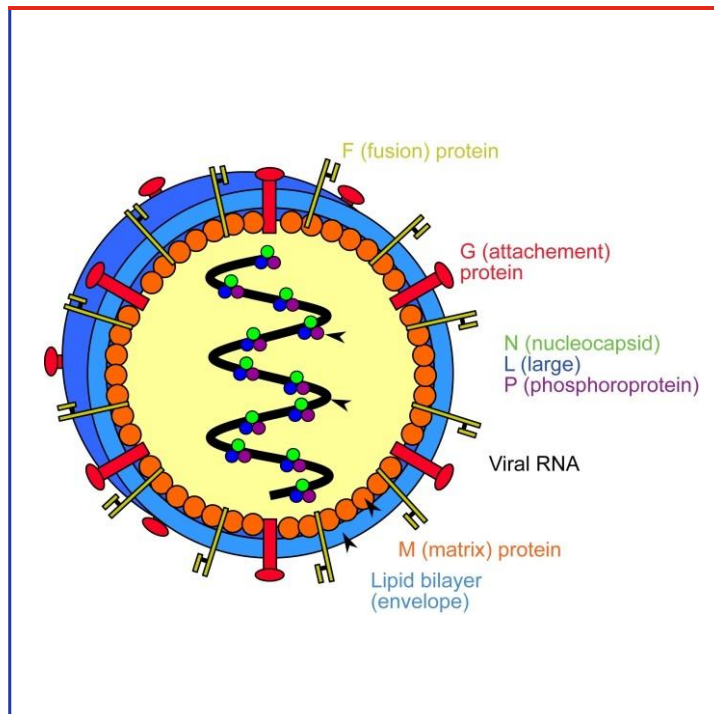
ANNEXURE 4 - GUIDELINES FOR DISCHARGE OF PATIENTS



NB: Any amendment to this Guidelines be done only with the concurrence of Medical Board

NIPAH Virus Infection

Guidelines for Surveillance, Diagnosis, Treatment, Prevention and Control



DEPARTMENT OF HEALTH AND FAMILY WELFARE
GOVERNMENT OF KERALA

Index

Message by Honourable Health Minister	5
Foreword	7
Chapter 1. Epidemiology, burden of disease, transmission	9
1.1 Epidemiology	9
1.2 Burden of disease	9
1.3 Modes of Transmission	10
Chapter 2. Diagnosis	11
2.1 Definitions - Case & Contact	12
2.2 Clinical features	12
2.3 Laboratory diagnosis	12
2.3.1 Investigations to be done for confirmation of diagnosis	12
2.3.2 Sample collection and transport and testing guidelines	12
2.3.3 Disposal of supplies/waste	14
2.3.4 Point of care testing	14
2.3.5 Other Investigations for patient management	14
2.3.6 Surveillance	16
Chapter 3. Management of Nipah virus infection	17
3.1 Triaging of patients	17
3.2 Setting up an isolation facility	18
3.3 Treatment	18
3.3.1 Supportive measures	18
3.3.2 Drug treatment options	19
3.3.2.1 Ribavirin	20
3.3.2.2 Monoclonal antibody m102.4	
3.3.3 Standard care for Encephalitis, Myocarditis and ARDS	21
3.3.4 Other therapeutic options	22
3.3.5: Psychosocial interventions	22
3. 4 Criteria for discharge and follow up	22

Message



I am very happy to see that the Department of Health and Family Welfare has published a book on Guidelines to contain outbreak of Nipah. During the first outbreak, there was limited knowledge available regarding various aspects, especially related to actions at the grassroots, but the health system responded very well and contained the outbreak and gained experience. At the time of second outbreak, again the health department along with district administration launched coordinated actions and contained the epidemic.

I am happy to note that the Department constituted a resource group and worked on various aspects of outbreak and drafted the guidelines to tackle NIPAH outbreak. I take this opportunity to congratulate all field functionaries who have shown their commitment and courage to tackle NIPAH outbreak and all officers who have contributed in drafting the guidelines book.

I am confident that such standard operation practice manual will build capacities of all health and other functionaries. It is worth mentioning that a chapter on mock drill is added in the book, which will equip all functionaries with knowledge and build capacities to tackle any future virus outbreak. The framework to build the campaign will be handy for all to plan interventions and execute actions to contain the outbreaks.

I wish all the success.

K K Shailaja Teacher
Minister for Health & Family Welfare
Social Justice, Woman and Child Development

Foreword

Kerala successively experienced back-to-back two outbreaks of NIPAH. The second outbreak on 3rd June 2019 has made to think of having a systematic approach to deal with any virus outbreaks in future. The first outbreak has taught some lessons and the second accentuated the need of developing the system and processes.

During the second outbreak, the health administration and district administration have coordinated the actions over a period of time. Soon after the detection of the index case, surveillance activities, contact tracing, quarantine, isolation, treatment related follow ups, testing, etc was done. The constitution of the Medical Board, treatment protocol, compassionate use of monoclonal antibody protocol, point of care testing, etc was developed. Later, with the coordinated efforts the outbreak got controlled. The index case got cured and there was no spread to others including family members of the patient.

During the second outbreak, as we were dealing with the situation, we went on building structures and processes. Eg Expert group to decide on use of Monoclonal Antibodies, development of treatment protocol, Institutional Medical Board to decide the next actions for management of the index case, various committees of line departments with specific roles and responsibilities and method of their functioning. The administration has to take care of other aspects such as ensuring the samples are sent to authorized laboratories through well-structured processes and accountability. As it is a biohazard material added additional burden of identifying the authorized officers from various institutions and permitting them to participate in various discussions and the field visits. All these activities needed spot decisions and some method to deal with them. These aspects highlighted to have a detailed 'blue print' of structures and processes for taking various activities to tackle the future outbreaks.

Learning from this experience, it was decided to constitute a resource group of senior faculties of Prevention of Epidemic and Infectious Disease Cell and others departments including a few officers from the field to discuss various aspects related to viral disease outbreak to focus at institutional level and field level activities. At Government level and individual institution level, series of meetings were conducted. A team of senior faculties and the field officers worked on the preparing the guidelines. The objective of this booklet is to have a concise information available for all to plan activities well in time, assist in

capacity building and launch a well-coordinated campaign in case of Nipah outbreak.

This book also covers the framework for the 'mock drill' concept. This concept was discussed in the meeting of PEID Cell on 8th May 2019. It was discussed that countries like Japan and Israel conduct the mock drill regularly to ensure preparedness. It was decided to develop a mock drill guideline. Later discussions were conducted involving World Health Organization experts. The resource group worked on the same to have a system of 'mock drill' to do assessment of preparedness of health system and overall administration. This is a noteworthy aspect which shows the advance thinking to handle any exigency.

The book also gives information on building a campaign. At the time of formulating the plan, it was discussed whether we should say 'No Nipah campaign'. It was intentionally done in order to infuse seriousness regarding the prevention focus to control such a dreaded virus outbreak.

During these discussions the Department had taken a decision to equip themselves to tackle any viral outbreak and in September 2019 procurement orders for Personal Protection Equipment were placed with the companies by doing transparent bidding. This has proved the best intervention as few months down the line, the whole world landed in COVID pandemic from January 2020.

It was decided to publish this book after the 'mock drill', along with mock drill output in January 2020. But, as we all know, from January 2020 onward the whole world started grappling with COVID pandemic, that has caused delays in publishing this book. However, the experience of handling NIPAH second outbreak has assisted Kerala Health to tackle COVID from the day one in a coordinated way without wasting a minute!

It is decided to do annual review of the guidelines and publish updated version in the web portal of the department. We appreciate the contribution of all experts and field officers. We look forward to their continued support. We solicit the suggestions from all experts in the field

Dr Rajan Khobragade
Principal Secretary
Department of Health and Family Welfare
Government of Kerala

Chapter 1. Epidemiology, burden of disease, transmission

Introduction:

Nipah Virus (NiV) Infection is recognized as a deadly infection in 1998 but came to a better attention in Kerala with the outbreak in 2018 and 2019. In this chapter we are trying to look very briefly about the NiV, the transmission, epidemiological aspects and the magnitude of the disease burden. This will help us to plan strategies for preparedness, early detection and timely management and appropriate interventions to tackle the situation on an urgent basis.

1.1 Epidemiology

- **Agent: Nipah Virus (NiV)** is a highly pathogenic RNA virus belonging to the *Paramyxoviridae* family and grouped under the genus *Henipavirus*. *Two NiV clades have been proposed so far; B genotype in Bangladesh, and M genotype in Malaysia*. The complete NiV genome of the Kerala strain had 85.14%–96.15% similarity with M and B NiV genotype.
- **Natural Reservoir:** Large fruit bats of *Pteropus* genus are the natural reservoir of NiV. Pigs are identified as intermediate hosts. In a study conducted during this outbreak 2018, the high positivity of NiV was detected in bat throat swabs, and showed persistence of virus for a couple of hours on contaminated fruits, which enhance the chances of human infection. NiV positivity was identified in bats from North Eastern Region states and Kerala.
- **Seasonality** was strongly implicated in NiV outbreaks in Bangladesh and India. All of the outbreaks occurred during the months of December to May.
- **Incubation period:** varies from 4-14 days.

1.2 Burden of disease: In the 1998 to 1999 Malaysian outbreak, human infection occurred from infected bats through infected pigs as intermediate animal host by direct contact with respiratory secretions and urine from infected pigs. In Bangladesh and India the transmission happened from bat to human and later from human to human. So far two outbreaks are reported from Kerala. From Kozhikode in 2018 and Kochi in 2019. The outbreak reported from Kerala in May 2018, there were one index patient, 18 confirmed and 4 probable cases. Two confirmed patients survived

in that outbreak. In Kochi, May 2019 one patient was confirmed of Nipah but no further spread was identified. India comes within the Nipah virus distribution map and there is a risk of spill over and transmission to humans. The delay in diagnosis will increase the chance of spread to humans through the risk of increased human to human spread. The knowledge about the ecology of bats and NiV and the seasonality of the disease is important in prevention of future outbreaks.

1.3 Mode of Transmission:

Human infection results from spillover transmission from bats or through human-to-human transmission. Direct bat-to-human transmission occur through fruits contaminated by bat's secretions - urine or saliva- or consumption of raw date palm sap [*tari*] contaminated by bat saliva. In the Malaysian outbreak, human infection occurred through contact with respiratory secretions and urine from infected pigs, which got infected after consumption of partially bat eaten fruits, dropped in pigsty. The infection got controlled once the cause of infection was identified and health education, barrier precautions were advised to people handling the pigs and pig culling operations were conducted. Unlike Malaysia and Singapore, the outbreaks in Bangladesh and India pigs were not identified as intermediate hosts and transmission was from bat to human and human to human. In the 2014 Philippines outbreak, infected horses were identified as the intermediate hosts.

Clustering of symptomatic cases mainly adults among close contacts and households is an important clinical clue to this infection. In 2018 Kerala outbreak, all cases except the index case the transmission was from human to human.

Chapter 2. Diagnosis and Surveillance

Introduction

Early identification and diagnosis is of prime importance in NiV infection. The case management includes strategic plans to prevent spread through contacts and this requires proper triaging and isolation. Understanding definition of cases and contacts becomes very important here.

2.1 Definitions - Case and Contact

1. Case Definitions

a. Suspect Nipah Case

Person from an area/ locality affected by a Nipah virus disease outbreak who has:

- Acute Fever with new onset of altered mental status or seizure and/or
- Acute Fever with severe headache and/or
- Acute Fever with Cough or shortness of breath

b. Probable Nipah case

- Suspect case-patient/s who resided in the same village where suspect/confirmed case of NIPAH were living during the outbreak period and who died before complete diagnostic specimens could be collected

OR

- Suspect case-patients who came in direct contact with confirmed case-patients in a hospital setting during the outbreak period and who died before complete diagnostic specimens could be collected.

c. Confirmed Nipah Case

Suspected case who has laboratory confirmation of Nipah virus infection either by:

- Nipah virus RNA identified by PCR from throat swab, urine, serum or cerebrospinal fluid (optional).
- Isolation of Nipah virus from throat swab, urine, serum or cerebrospinal fluid.

d. Definition of a contact:

A Close contact is defined as a patient or a person who came in contact with a Nipah case (confirmed or probable cases) in at least one of the following ways.

- Was admitted simultaneously in a hospital ward/ shared room with a suspect/confirmed case of Nipah virus disease
- Has had direct close contact with the suspect/confirmed case of Nipah virus disease during the illness including during transportation.
- Has had direct close contact with the (deceased) suspect/confirmed case of Nipah virus disease at a funeral or during burial preparation rituals
- Has touched the blood or body fluids (saliva, urine, vomitus etc.) of a suspect/confirmed case of Nipah virus disease during their illness
- Has touched the clothes or linens of a suspect/confirmed case of Nipah virus disease

These contacts need to be followed up for appearance of symptoms of NiV for the longest incubation period (21 days). They must be transported to appropriate care facility if they develop symptoms with proper infection control practices.

2.2 Clinical features

- Fever, Altered mental status, Severe fatigue, Headache, Respiratory distress, Cough, Vomiting, Muscle pain, Convulsion, Diarrhoea
- In infected people, Nipah virus causes severe illness characterized by inflammation of the brain (encephalitis) or respiratory diseases.
- The syndromic presentations are ARDS, Myocarditis and Encephalitis. Patients can present with fever alone. All patients coming with fever with any other symptom having an epidemiological link and history of contact must be treated as NiV infection and must be tested for the NiV infection.
- In general, the case–fatality rate is estimated at 40–75%; however, this rate can vary by outbreak and can be upto 100%.

2.3 Laboratory diagnosis

2.3.1 Investigations to be done for confirmation of diagnosis

Real-Time RT-PCR Viral RNA

anti-NiV IgM and IgG antibodies by enzyme-linked immunosorbent assay

2.3.2 Sample collection and transport and testing guidelines

Laboratory confirmation of a suspect and also a symptomatic with definite history of contact case can be made during the acute and

convalescent phases of the disease by using a combination of tests. The samples have to be sent to designated laboratories identified as per protocols prepared.

Sample Collection and Transport Guidelines:

Universal, standard droplet and bio-containment precautions should be followed during contact with excretions, secretions and body fluids of suspected patient for Nipah virus. Adequate bio-safety precautions should be adopted during collection/transport/ storage/ processing of suspected sample.

Sample collection:

The samples should be collected in all patients (suspect or symptomatic with contact with Nipah) as early as possible with all bio-safety precautions and documenting the clinical details on the proforma (provided from the testing laboratory).

Sample collection should be done only AFTER ADMISSION into an isolation facility, and ensuring that the staff member doing the collection is following proper infection control practices.

During sample collection wear complete disposable Personal Protective Equipments (N 95 mask, double surgical gloves, gowns, goggles foot cover, etc). Wash hands with soap and water at least for 30 seconds and then clean hand using alcohol based hand sanitizer before and after collection of samples.

The recommended samples are

- Throat swab in viral transport medium
- Urine 5 ml in universal sterile container
- Blood in red vacutainer (5ml)
- CSF (1-2 ml) in sterile container

Transportation and Storage of samples:

- Samples should be safely packed in triple container packing and should be transported securely under cold chain (2-8°C) to the testing laboratory with prior intimation.
- Sample containing vials, tightly closed, should be kept in good quality zip-lock bags wrapped with sufficient absorbent cotton padding so that inside material should not come out of bag if it leaks. The plastic bag should be kept in another Zip-lock bag similarly, which should be sealed with adhesive tape. This carrier

should be placed in a hard container sealed with impermeable tape or plaster and placed in thermocol box /vaccine carrier containing ice packs. The case sheets with complete information should be placed in plastic bag and should be pasted **outside the container**.

- Samples should be transported at 2-8°C to the have to be sent to NIV Pune, NIV field station, Alappuzha or as per the testing protocols.

2.3.3 Disposal of supplies/waste:

The proper disposal of biomedical waste is a challenge in such type of infections. Must be done adhering to strict infection control practices to ensure safety of all personnel involved. This has to be supervised and properly co-ordinated by the hospital infection control committee.

2.3.4 Point of care testing (POC):

Early diagnosis was a challenge for appropriate prompt management in outbreak 2018. High containment laboratory facility for quick diagnosis was identified as a need for the same. In Government Medical College, Ernakulam during 2019 outbreak a POC micro PCR assay for NiV detection and ELISA testing facility could be started with technical support from NIV, Pune. If such facilities are available, it must be utilized. The facility for screening dengue, Japanese encephalitis and West Nile virus infection in all NiV negative cases will help to narrow down the diagnostic possibilities in seriously ill patients. This will help to incorporate appropriate modifications in the management

2.3.5 Other Investigations for patient management

NiV infection is similar to any other viral infection and it is a clinical challenge to diagnose it early and to ensure all safety measures and infection control practices to prevent human to human transmission. Nipah virus is classified as a biosafety level 4 pathogen. The laboratory should be informed if a clinical suspicion is made and the facilities must be the same for all other investigations done for the patient considering its high pathogenicity in humans. All treatable cases like bacterial infections, malaria and herpes encephalitis must be included in the differentials depending on the clinical presentation. Tests must be ordered appropriately.

2.3.6 Surveillance

Case identification and Contact tracing:

These contacts need to be followed up for appearance of symptoms of NiV for the longest incubation period (21 days). They must be transported to appropriate care facility if they develop symptoms with proper infection control practices.

Risk Stratification of Contacts

RISK CATEGORY	DESCRIPTION
High risk	1. Any contact with body fluids (blood, urine, saliva etc) of a confirmed case of Nipah 2. Any contact with body fluids of a probable case who died without a lab confirmation of Nipah 3. Spend time in close proximity or in closed space for more than or equal to 12 hrs
Low risk	Any other contact such as touching, contact with clothes or linen or any other item used

Follow-up Action

RISK CATEGORY	Follow-up Action
High risk	Asymptomatic- Home quarantine with active follow up for fever, by health workers using telephone, twice a day for 21 days Symptomatic (fever)- Immediate admission in designated isolation ward with ICU facility
Low risk	Asymptomatic- Home quarantine and follow up for fever by telephone. Symptomatic (fever)- Immediate admission in designated isolation facility

Format for Contact Tracing

S l. No	N a m e o f t h e C a s e	N a m e o f t h e C o n t a c t	A g e	Se x (M /F/ T G)	O cc u p a t i o n	A d d r e s s	W a r d N o .	Panch ayath/ Munici pality/C orporat ion	D i s t r i c t	P h . N o .	Da te of las t co n t a c t w i t h t e c a s e (D D/ M M/ YY YY)	Pl ac e of co n t a c t w i t h t e c a s e [E g; Ro om no. 3 Me dic ine op d, As hw ini ho spi tal, thri ss ur	C o n t a c t w i t h t e c a s e [E g; Ro om no. 3 Me dic ine op d, As hw ini ho spi tal, thri ss ur	T o o n t a c t w i t h t e c a s e [E g; Ro om no. 3 Me dic ine op d, As hw ini ho spi tal, thri ss ur	Con t a c t w i t h a n y t h i n g u s e d b y t h e c a s e [e g; clo thes ,ut ens il s,t rol le y,b ede tc](Y /N). If yes, plea se spe cify	Spe nt tim e w i t h t e c a s e i n t h e s a m e ro o m/v ehi cle/ clo sed spa ce (Y/ N). If yes , plea se spe cify	Ti m e sp en t w i t h t e c a s e (Pl ea se spe ci fy in mi nu tes /h ou rs)	Ty pe of co n t a c t 1. H ou se ho ld co n t a c t 2. H os pi tal co n t a c t 3. C o m m u ni ty co n t a c t	N a m e & P h o n e n o o f t h e p er s o n w h o c o l l e c t e d t h e i n fo r m a t i o n

Chapter 3. Management of Nipah virus infection

Introduction:

NiV infection is different from other viral infections or pathogens because of its potential of transmission from human to humans with high mortality and no definite treatment or vaccine so far identified. So the management essentially involves infection control practices and triaging, isolation and management of patients including intensive supportive care. The Emergency Department must be strengthened for early identification, proper isolation and management of patients suspected of NiV infection to minimize the risk of human to human transmission.

To manage the fever triage and isolation facility, a separate team should be trained and appropriately delegated for its implementation. The team should include health care providers as a single unit. The senior cadre nurses must be responsible for maintaining the overall co-ordination, in charge of movement and sick registers of the health care providers, ensuring the proper donning and doffing, auditing of the appropriateness of training of the health care providers, ensuring of all supplies including drugs, disposables and consumables, food and other supplies for patients in the isolation unit etc. The area must be strictly restricted to the purpose and clearly demarcated. Collection and transportation of samples must be documented and reports must be properly collected. The preparation and handling must be done as per protocols in designated area and with appropriate co-ordination.

The important points in management are discussed in detail below.

3.1 Triage of patients

- **All patients having fever must report to Fever triage from where they will be sent to the isolation facility**
- Ensure strict adherence to proper Triage
- **Proper infection control practices must be followed up.**
- Ensure personal safety. Wear apron and gloves as appropriate.
- General measures – ABCDE approach (Airway, Breathing, Circulation, Disability, Exposure)
- Plan for appropriate care including intensive supportive care

The most important step in patient care is intensive supportive care.

3.2 Setting up an isolation facility

Who should be kept in isolation facility/ward/ICU

- History of close contact with confirmed case presenting with fever or any symptoms suggestive of Nipah infection (*vide* clinical features)
- Health care provider who has come in contact with the patient with fever / severe headache/ altered sensorium/ breathlessness/ cough
- Patients with high clinical suspicion – Encephalitis/ARDS/Myocarditis during an outbreak

Isolation facility

- Enter all the details of HCWs entering the isolation facility in the Register for ensuring appropriate follow up
- Only HCWs trained in infection control practices should be posted in the isolation facility.
- Monitor staff health, sick people should not be allowed at work.
- They must report immediately through the contact numbers provided if they develop any health related problems during the period and up to another 21 days after the last day of duty
- Infection control practices should be strictly adhered and audited
- Proper instructions should be followed while entering the room
- The entry of the health care provider should be through Donning area, and then to the triage or treatment area. The exit should be separate for the health care provider and there should be facility for doffing and appropriate facility for hand washing / bathing.
- Patient entry and shifting should be separately marked.
- The deceased should be handled separately as per protocols.
- Single room with attached toilet facility must be provided for each patient.
- Separate equipments (BP apparatus, Stethoscope, Thermometer, Pulse oximeter) for each room and use only disposable consumables to be used.

3.3 Treatment

3.3.1 Supportive measures including Standard care of ARDS, Myocarditis and Encephalitis

Standard care must be provided as in any other infection presenting with Encephalitis, ARDS, and or Myocarditis.

Care should be individualized according to the clinical

presentation and management decisions of the treating clinician.

The basic supportive measures are outlined below:

- a. Isolation of patient in the isolation facility ☐
- b. Use of PPEs ☐
- c. Hand washing with soap & water before and after handling/visiting patients ☐
- d. Resuscitation (if needed): ABC : ☐ Airway, ☐ Breathing , Circulation ☐
- e. Care of unconscious patient: change of posture, care of eye, bladder, bowel and mouth ☐
- f. O₂ inhalation if there is respiratory difficulty ☐
- g. Nutritional support: oral/NG tube feeding according to the condition of the patient ☐
- h. Maintain fluid and electrolyte balance (Adults: 5% DNS, Children: 5% DNS, half or ☐ quarter strength saline) ☐
- i. Fluid restriction: 30% restriction particularly in children. 2/3 of the daily maintenance ☐ can be given in children if the child is not in shock ☐
- j. Maintain intake output chart ☐
- k. Bronchodilators when needed may be given through spacers

3.3.2 Drug Treatment options

No approved drugs or vaccines are currently available. There is an unmet need for newer therapeutic options for NiV infection. In diseases like NiV infection, any new drug can be tried only during an outbreak situation and that too strictly adhering to the clinical trial protocol. Hence preparedness is a priority for any future outbreak as the need occur as an emergency. Nipah clinical research facility needs to be adhering to infection control practices, isolation facility, trained clinical and laboratory team and patient and family support for timely information and consenting.

Currently the available treatment options are very limited.

3.3.2.1 Ribavirin

Ribavirin, a nucleoside analogue with broad activity against several RNA and some DNA viruses. Used in Malaysian outbreak in an open label trial with 36% reduction in mortality, but further studies in animal models proved ineffective.

In the Kerala outbreak 2018, the drug was started in 10 patients, both the survivors have received full course of treatment. The dose used was 2 g stat, 1 g 6 hourly 4 days followed by 500mg 6 hourly for 5 days (based on WHO guideline for other haemorrhagic fevers) on confirmation of NiV infection. (Available as 200 mg capsules – Day 1- 10 capsules stat, then 5 capsules of 200 mg 6 hourly for first four days followed by 200 mg capsules 3-2-3-2 for 5th to 10th day –

total of 150 capsules). No major side effects reported with Ribavirin. In Kerala outbreak 2019, the one patient with confirmed NiV infection had received Ribavirin but started only on confirmation by 9th day of illness.

Adverse effects of Ribavirin: Rare if used for short term. The Major adverse effects on long term treatment are hypersensitivity, hemolytic anemia, significant teratogenic and/or embryocidal effects in animal studies, bone marrow suppression. The complete haemogram and LFT need to be monitored. Patients received Ribavirin must be counselled about the teratogenicity as it may persist in non-plasma compartments for as long as 6 months. Hence effective contraception must be utilized upto 6-months after the drug use.

3.3.2.2 Monoclonal antibody m102.4

M102.4 recognizes the G envelope protein of NiV and appears to block the receptor binding site on the protein preventing adhesion to the Ephrin B2 protein and thereby inhibiting viral entry into the host cell.

During the NiV outbreak in Kozhikode, Kerala in 2018 the m102.4 monoclonal antibody, an experimental therapeutic, was imported for treatment of NiV infected patients on compassionate ground. The SOP (Standard Operating Procedures) and protocols were prepared with the support from ICMR. But it was not used as the outbreak was ended by that time. In Kochi 2019 outbreak as there were no new confirmed cases and the patient was towards the recovery phase when the NiV infection was confirmed, the drug was not used. The protocols, the drug, facility and trainings were started in anticipation. The m102.4 monoclonal antibody is an investigational drug and requires Emergency Research Response

& Resources for using such an investigational drug. This becomes a high priority area because of the high mortality of this infection. The indications and guidelines for use of m102.4 is prepared and to be used with appropriate knowledge and training of the research team as in any other clinical trials with Ethics committee approvals and consenting process. The protocols and SOPs must be referred in detail in this regard and to be modified appropriately according to the then available scientific knowledge.

3.3.3. Standard care for Encephalitis, Myocarditis and ARDS

a. Standard care for encephalitis

Patients with increased intracranial pressure

- Management of fever, pain, control of cough and other strains.
Manage Fever, pain with paracetamol, avoid NSAIDs
- Prevention of seizures
- Control of systemic hypertension
- Elevate head above the heart (usually 30 degrees)
- Furosemide 0.5 to 1.0 mg/kg IV and / or mannitol 1 g/Kg IV over 30-60 minutes, Repeat dosing can be given as needed, generally every eight hours—provided circulatory volume is protected
- IV Sedation and mechanical ventilation

Seizures

- o Lorazepam 4 mg IV or
- o Phenytoin 100mg IV q6-8h or
- o Fosphenytoin 150PE q8h IV or
- o Levetiracetam 500mg q8-12h IV

b. Standard care for myocarditis

Supportive therapy for symptoms of acute heart failure with use of diuretics, nitroprusside, ACE inhibitors.

- Inotropes- Dobutamine- 2–5 micrograms/kg/ min, titrated up to 20 micrograms/kg/min- Inotrope and potential vasodilator; lowers blood pressure; give as individual agent as long as systolic blood pressure (SBP) ≥ 90 . Can use with dopamine.
- Dopamine-3–5-micrograms/kg/ min, titrated up to 20micrograms/kg/ min as needed-Inotrope and vasoconstrictor; increases left ventricular end-diastolic

pressure and causes tachycardia. Can be used with dobutamine.

- Norepinephrine-2 - 50 micrograms/min (0.02 - 2 micrograms/kg/minute) titrate to response-Vasoconstrictor and inotrope; preferred as a single agent over dobutamine if SBP <70. Can use combined with dobutamine.

c. Standard of care for ARDS

- For mild ARDS, non invasive ventilation stands as the first-line approach.
- Patients who have a diminished level of consciousness, vomiting, upper GI bleed, or other conditions that increase aspiration risk are not candidates for NIPPV.
- Other relative contraindications include hemodynamic instability, agitation, and inability to obtain good mask fit
- Severe ARDS is often associated with refractory hypoxemia, and early identification and treatment of hypoxemia is mandatory.
- For mechanical ventilation specific settings are recommended: limitation of tidal volume (6 ml/kg predicted body weight), adequate high PEEP, a recruitment manoeuvre in special situations, and a 'balanced' respiratory rate (20-30/min) for appropriate baseline minute ventilation. Consider the use of incremental FiO₂/PEEP combinations to achieve oxygenation goal (PaO₂ 55-80 mm Hg or SpO₂ 88-95 %)

3.3.4 Other therapeutic options

No approved drug so far. As NiV is an infection with definite potential for human-to-human transmission and high mortality we must be ready to accept newer therapeutic options in any future outbreaks. The preparedness for research well in advance of the outbreak is the priority in this infection.

3.3.5: Psychosocial interventions: For the patient, for those contacts kept in isolation facility for testing, family members and community contacts must be planned and administered.

3.4 Criteria for discharge and follow up

Criteria for discharge of a patient from isolation facility presented with suspected Nipah and tested negative

1. Tested negative and totally symptom free can be discharged with observation at home for total of 21 days.
2. Tested negative and continue to have fever and other symptoms need a repeat testing after two days to exclude NiV infection and there exist a strong history of contact with NiV infected patient/sample must have repeat testing in every two days till patient becomes symptom free.
3. No need of repeat testing if tested negative on two occasions found negative and an alternate diagnosis is made.

Criteria for discharge of confirmed case

- Clinically stable
- Nipah RT-PCR from all three samples (Throat swab, Urine and blood) reported negative on two occasions at least 5 days apart.
- To be decided by the treating clinician and confirmed by the Medical board

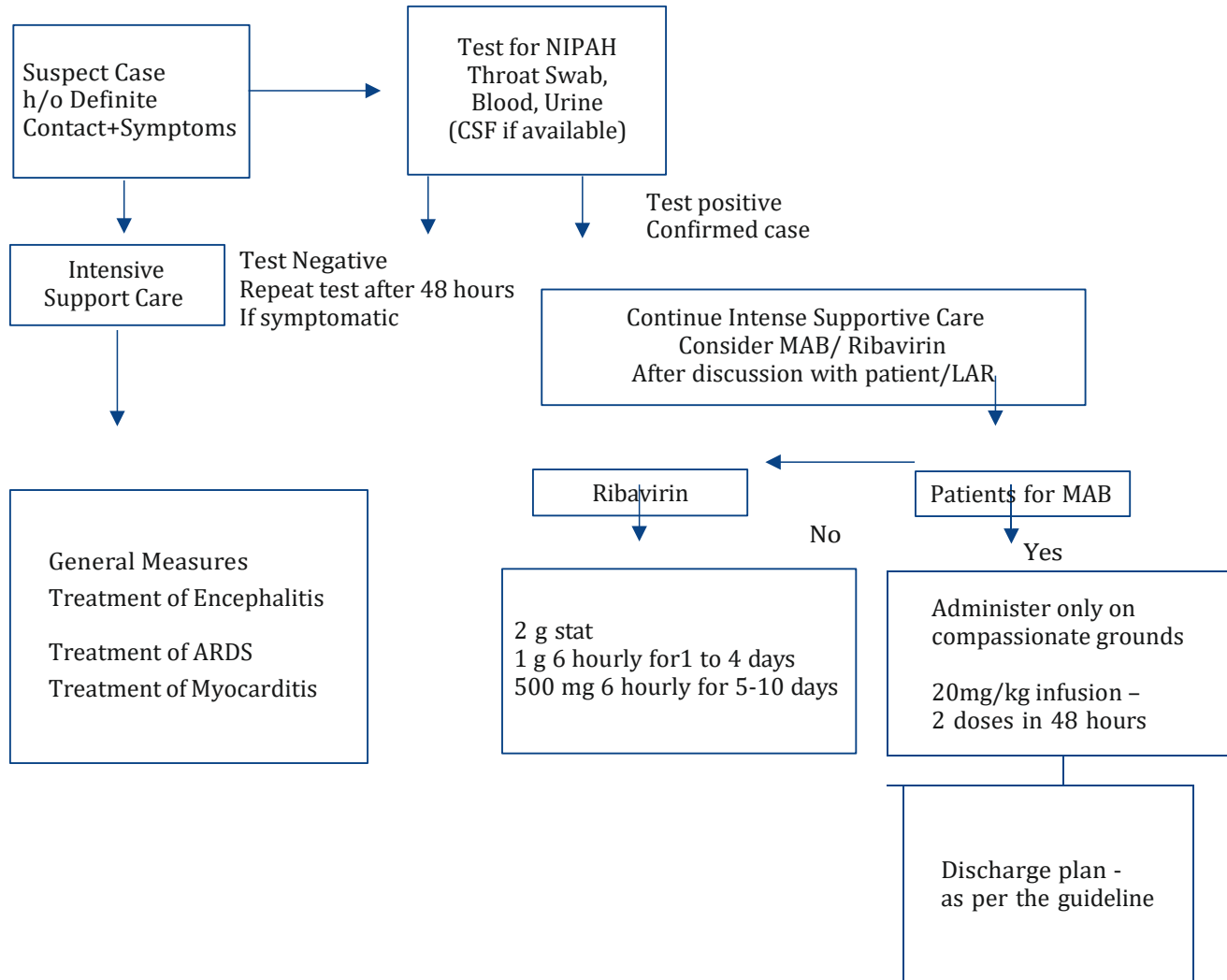
Follow up

The discharged patient should remain in isolation at their residence for 4 weeks after the discharge.

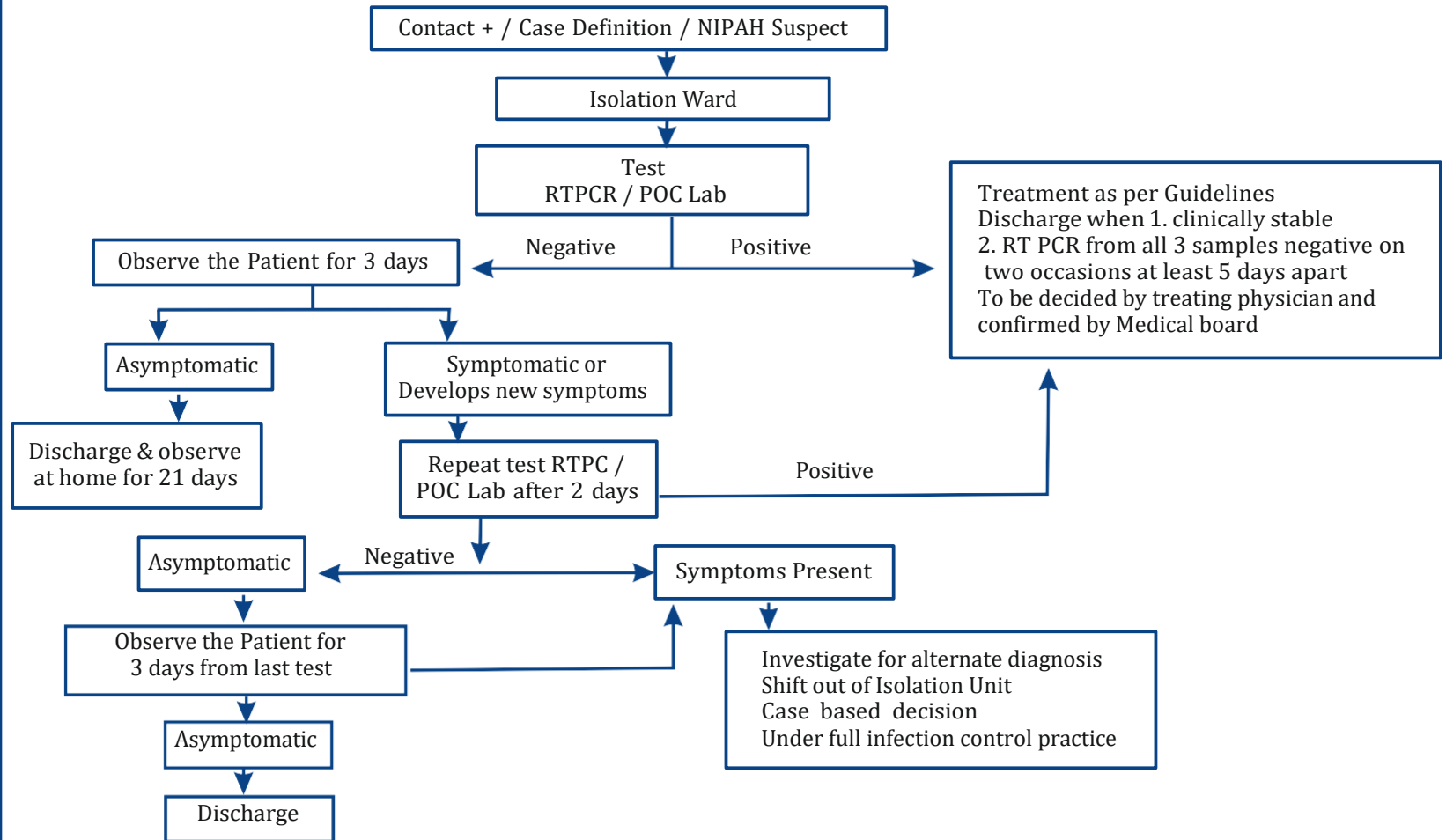
Patient is advised follow up on 28days, 56 days and 90 days of discharge

All patients with confirmed NiV infection should be kept under long term follow up as there were reports of relapse and late onset encephalitis in an earlier series.

TREATMENT ALGORITHM



GUIDELINES FOR DISCHARGE OF PATIENTS



NB: Any amendment to this Guidelines be done only with the concurrence of Medical Board

No Nipah campaign

Background

Nipah virus infection is a deadly zoonotic disease with high rate of human to human transmission. It is an enveloped ribonucleic acid virus, has been a major cause of encephalitis out-breaks with high mortality, primarily in the Indo-Bangladesh regions. ¹The name 'Nipah' comes from a Malaysian village, where the first outbreak was reported in 1998-1999. The outbreak subsequently spread to various regions of the country and Singapore in the south due to the movement of infected pigs. Nipah virus caused systemic infections in humans, pigs and other mammals. ²Malaysia, Singapore, Philippines and Bangladesh reported the previous outbreaks.

In India, previous outbreaks of Nipah virus occurred in Siliguri (2001) and Nadia (2007) districts of West Bengal. Kerala faced this epidemic in May 2018. A total of 19 Nipah virus (NiV) cases, including 17 deaths, were reported from Kerala State: 18 of the cases were laboratory-confirmed and the deceased index case was suspected to have NiV but could not be tested. The outbreak was localized to two districts in Kerala State: Kozhikode and Malappuram. – ³Transmission of the infection occurred predominantly in the hospitals. The human to human transmission rate was very high in the Kozhikode outbreak, consistent with rates of NiV outbreaks in India and Bangladesh but different from the rate in Malaysia. Several factors contributed to the high transmission rate in the hospital. They include inadequate barrier infection control measures, lack of hand washing, altruistic behaviour of patient companions, poor regulation of visitors in the hospitals, extended period of waiting for procedures and the movement of index case within the corridor. – ⁴

When Kerala faced an outbreak, there was no previous experience in tackling such health emergencies. Intense measures were initiated by the state with the help of central government health authorities including the National Centre for Disease Control, National Institute of Epidemiology, Indian Council of Medical Research (ICMR), Manipal Institute of Virology and experts from AIIMS, New Delhi. The outbreak drew immense global attention and underlined the need for adequate preparedness in the event of such episodes resurging in the future. ⁵

In June 2019, one case of Nipah was reported from Ernakulam district. The outbreak control activities led to the containment of the outbreak to just one

case. In this background Government of Kerala has initiated the '**No Nipah campaign**' to prevent further outbreaks in the state.

No Nipah campaign envisages strategies to educate the public regarding the potential sources of infection and modes of transmission and bring behavioural change so as to avoid the first case. It also focusses on strategies to be implemented in the health care system in the perspective of hospital infection control practices. Minimising the human animal interaction which is the vulnerable and key event in acquiring an infection as well as enhancing infection control practices in the community and hospital premises with community participation plays the pivotal role.

Objectives

1. To prevent the occurrence of human cases of Nipah through behaviour change interventions and infection prevention and control practices.
2. To limit the impact, in the event of a Nipah outbreak through prompt response and containment.

Strategies

1. Health literacy campaign to prevent transmission in the community with focus on behaviour change communication.
2. Strengthen infection control practices in the hospitals through training of health care staff and capacity building.
3. Strengthening the surveillance for Nipah virus
 - (a) In tertiary care hospitals through Outbreak Monitoring Units (OMU) attached to PEID (Prevention of epidemic and infectious diseases) cells.

Activation of OMU – Immunocompetent patients presenting with any of the features like severe pneumonia/ ARDS, haemorrhagic rash, severe Gastro enteritis, meningoencephalitis, acute liver failure shall be evaluated and if the cause cannot be ascertained through routine investigations, further evaluation should be done to rule-out tropical fever syndrome is like dengue fever, leptospirosis, scrub typhus, chikungunya, malaria, enteric fever, H1 N1 etc and expected community acquired syndromes. OMU shall be activated if there is history of Zoonotic contact, clustering of cases in the family/locality, travel to forest areas/Outside the state or fever death without a diagnosis in immunocompetent patients. The experts in the OMU shall decide on further laboratory diagnosis, including field

investigation and notification as required.

(b) In primary and secondary hospitals through reporting.

(c) Animal health surveillance.

4. Strengthening the diagnostic and treatment facilities by establishing standard diagnostic, treatment and referral protocols.
5. Enhancing preparedness by improving infrastructure, procurement of logistics, training and conducting Nipah mock drills.
6. Involvement of private sector and inter sectoral coordination.

Activity log

1. Health literacy through behavioural change communication

Target group	By whom	Activity	Frequency
General population	Health care providers and community volunteers JHI JPHN ASHA Anganwadi worker, kudumbasree	Health education sessions Distribution of IEC materials	Monthly-December to June
	Through mass media campaigns	Creation of IEC materials, role plays, drama TV, folklore Newspaper, FM messages, whatsapp messages	December to June
School and college students	Health clubs, with the help of JHI,JPHN	Health education and distribution of IEC materials	December to March
High risk groups			
Hospital staff	Doctors, staff nurses, ICN's	Classes, seminars	Monthly December to June
Occupational high risk groups Fruit vendors, Veterinary staff, hunters, trekkers, wild life enthusiast, toddy collectors, animal/ pet traders, forest guards, tribal population	Field staff, food safety personals,	Health education class and IEC materials	Monthly-December to June

2. Strengthening of infection control

Infection control	Activity	By whom
Individual and community level	Cough and sneeze hygiene Hand washing Personal hygiene Food and Environmental hygiene Quarantine	General public, Individuals with respiratory symptoms, household members, caregivers
Primary level health carecentres	Airborne infection control desk(cough corner) Hand washing Isolation	Patients with respiratory symptoms, Doctors, Staff nurses, lab technicians, pharmacists and other health care providers
Secondary level heath care centres	Airborne infection control desk(cough corner) Hand washing Isolation Early referral Infection prevention and control practices	Patients with respiratory symptoms, Doctors, Staff nurses, lab technicians, pharmacists, ambulance drivers and other health care providers
Tertiary care hospitals and medical colleges	Airborne infection control desk(cough corner) Hand washing Red channeling of suspected nipah patients Isolation Trainings Mock drills Infection prevention and control practices	Patients with respiratory symptoms, Doctors, Staff nurses, lab technicians, pharmacists, students trainees, ambulance drivers and other health care providers

3. Strengthening reporting and surveillance

Level	What	By whom	To whom	Action
Individual/Community	Unusual cases or clustering of similar cases	General public	Field staff, ASHA worker	Verification and preliminary report(FIR) by Medical officer to IDSP immediately
Hospitals	Suspected/ confirmed Nipah case	Doctor	DMO DSO Regional PEID Cell	1.Report to DHS, State IDSP, State PEID cell 2.Contact tracing 3.RRT
Laboratory	Sample collection, packing, transportation	Doctor/laboratory technician	DSO	Transport of specimen to NIV

4. Inter-sectoral co-ordination

Sector	Airborne infection control	Screening	Health education	Surveillance
Health	✓	✓	✓	✓
Animal husbandry			✓	✓
Forest and Wild life department			✓	✓
Foreign affairs		✓	✓	✓
Environment			✓	
Education			✓	
Food safety			✓	
Food and agriculture			✓	

Kerala Nipah Virus Mock Drill (Functional Exercise)

Background

Post outbreak of NIPAH in June 2019, it was discussed to ensure preparedness for any such future outbreak. The resource group discussed various aspects and drafted an elaborate mock drill protocol.

It is worth noting that Kerala Health has taken it very seriously and included all necessary PPE in their procurement plan in September 2019, placed orders, continued discussions and later drafted mock drill plan.

Why Simulation Exercises

Simulation exercises are tools used to assess and enhance preparedness of the system to face public health threats.

There are five types of simulation exercises:

1. Table-top exercises
2. Mock drills
3. Functional exercises
4. Field exercises
5. Full scale exercises

This document explains the organisation and conduct *of a functional exercise using a NIPAH virus patient to assess preparedness of health care facilities, public health machinery and laboratory network.*

EXERCISE NAME: Kerala Nipah virus Drill

DATE : A fixed day will be decided to do drill annually

TYPE OF EXERCISE: Functional exercise

LOCATION: Selected health care institutions in Kerala- Primary health centres, Taluk Hospitals, General Hospitals, Medical College Hospitals

PRE-REQUISITES:

- Identify the human resource(HR) to be involved in the functional exercise (hospital superintendents, RMOs, doctors, head nurses, staff nurses, link nurses/infection control nurses, house keeping units, nursing assistants, lab technicians, store superintendents/pharmacists, grade 1 and 2 attendants, security staff, lift operators, ambulance drivers, ambulance technicians)
- Training of HR for disaster response

- Procurement of logistics (PPEs, drugs, disinfectants)
- Infrastructure upgradation (e.g: identify/set up isolation rooms in the casualty/OPD, red channels, isolation ICU)
- Designated laboratory network for testing highly infectious samples
- Case definitions, Risk stratification (checklists)

ASSUMPTIONS:

The following are the assumptions to ensure that the exercise is as realistic as possible. Events taking place during the exercise are intended to progress in a logical and realistic manner and all exercise objectives will be achieved throughout the course of exercise.

- Exercise players/participants know well their roles and responsibility during the mock drill and they should act
- in accordance with existing plans, policies and procedures.
- Real-world response actions will take priority over exercise actions.
- The exercise controller (patient-actor) will present him or herself in a manner consistent with symptoms of NIPAH virus and relevant travel history.
- Symptoms described by the controller may require some medical evaluation for triage purposes, but will not require other invasive procedures or medication administration.

PURPOSES:

- 1) To assess the ability of Health care institutions to promptly and safely identify and isolate a potential patient with NIPAH virus infection
- 2) To assess the ability of health machinery of Kerala to initiate and implement public health measures for identification and containment of a possible outbreak
- 3) To assess the health system preparedness for timely and safe collection and transport of NIPAH virus specimens to a designated laboratory

SCOPE:

Duration: The drill is an un-announced exercise planned for a day. (It can be appropriately worked out maximum 2 hours at the hospital facility and 3 hours for the field activities)

Health facility:

1. Primary health centre/CHC/ Taluk Hospital
Beginning point: Exercise begins when the patient-actor enters

the out-patient department (Eg: household contacts of positive NIPAH virus infection turns symptomatic)

End point: District health authorities are notified and patient is shifted safely to an ambulance for transfer to a designated NIPAH treatment facility.

Community level action to be taken by primary health care centre

Beginning point: Received notification from health facility about suspected NIPAH virus case.

End point: Initiation of contact tracing for hospital and community contacts, and risk stratification.

2. Designated NIPAH treatment centre

Beginning point: Receiving information regarding the arrival of suspected NIPAH virus infection

End point: Admission of patient with suspected NIPAH virus infection in isolation ward and arrangements for sample collection.

Laboratory preparedness at the designated NIPAH treatment facility

Beginning point: Clinician orders lab investigations

End point: Safe transportation of samples to designated diagnostic facility for NIPAH virus

The sequence of events can be represented by the following flow diagram:

OBJECTIVES:

I. Health care facility

1. Determine the time it takes for the facility to identify the potential NIPAH virus disease and initiate mitigation measures in the OPD/casualty area (mask, shifting to isolation, inform trained ambulance team if needed)
2. Identify the time taken for the patient to be transferred to an isolation room.
3. Assess staff adherence to key infection control measures.
4. Determine facility capability to make necessary communications within PHC, trained ambulance team, designated NIPAH treatment centre and district/local health authorities.
5. Determine the capability of the hospital staff and ambulance team to safely shift the patient into the ambulance for transport to designated NIPAH treatment centre, if needed.

II. Health services (Public health aspect)

1. To test the efficacy of communication system within the health system to allow smooth flow of information throughout the chain of command within the health services
 - DMO Regional/State PEID Cell Setting up a team for epidemiological investigation
 - DMO Local health authorities(MO) Community health workerscommunity
 - DMOHealth facility in which patient is admitted(Public/Private)
1. To test the ability of the epidemiological investigation team to effectively initiate the process of tracing contacts based on existing case definitions and risk stratification of contacts
2. To assess the preparedness of system to effectively handle the sensitive health information

III. Laboratory network (Collection and transport of NIPAH virus specimens to designated lab)

1. To assess the preparedness of clinical and para-clinical staff to safely collect required samples for testing.
2. To assess the ability of the system to safely transport the collected samples to a designated laboratory.
3. Adherence of clinical and para-clinical staff to Infection Control Precautions throughout the process of collection and transport of specimens.

SCENARIOS

Patient (or cluster of patients) presenting with symptoms consistent with NIPAH virus, that will require isolation, shifting to a higher centre and notification of district health authorities, initiation of contact tracing and collection and transport of specimens to a designated laboratory.

Scenario 1:

Anju, 23 years presents to a PHC OPD/casualty in village X, with fever of 2 days duration, dry cough. She has developed dyspnoea, over last one day. She is a medical student studying in Wuhan Medical University in China. One week back she returned from china where there was epidemic of NIPAH virus infection along with 3 friends.

Scenario 2

Savithri, 50 years presents to medical college casualty with fever and

dry cough and dyspnoea of 2 days duration, her 25 year old son Sabu was admitted the previous day in an ICU with fever of one week, cough and breathing difficulty. He was suspected to have a NIPAH virus infection. She had cleaned his sputum and helped take him to the hospital without using appropriate protective measures.

Scenario 3:

Chacko, 23 an intern in medical college, presents to the medical casualty of a private tertiary care hospital with fever, dry cough, of 1 day duration. One week back he had received a patient, in the medical college ICU and had taken a detailed history from him. During the time, the patient was coughing and Chacko was not wearing a mask. Sabu was subsequently diagnosed to have NIPAH virus.

Scenario 4:

Robert 29, presents to OPD with high-grade fever and cough of 2 days duration. He recently returned from Singapore.

PARTICIPANTS

The following are the categories of participants involved in the exercise:

1. Exercise director:

The person who provides strategic oversight and direction for the planning, conduct and evaluation of an exercise. The exercise director is responsible for approving the exercise's purpose, objectives and supporting documentation, including the concept note, exercise plan and exercise instructions.

2. Exercise controller/lead facilitator:

A single person who supervises the overall conduct of the exercise, ensuring that it proceeds as planned and that its objectives are reached. The exercise controller is required for drill, functional and full-scale exercises. The exercise director appoints the exercise controller.

3. Patient-actor/s:

The mystery NIPAH virus patient appointed to present in the OPD with history and symptoms consistent with a pre-written scenario. The patient-actor reserves the right to terminate the exercise at any point if he/she has safety concerns or due to real world events that might interfere with the exercise. He will assist in the evaluation wherever practical and will do so in a manner that maintains anonymity of the drill.

4. Evaluator:

The evaluator's job is to evaluate the drill based on the exercise objectives and evaluation guidelines. Evaluator co-ordinates with the trusted agent and is present at the facility throughout the exercise. He keeps the patient actor in view as far as possible without interfering in the drill process. Evaluator collects data about the exercise and exercise objectives and drafts an After – Action Report for feedback to the facility within one week of the drill.

5. Trusted Agent:

Trusted agent is a staff of the facility who serves as a point of contact from the facility. Trusted agents are also placed in the offices of the health department and field. He will receive information regarding the date and time of the drill. In turn, the trusted agent provides information to the drill organisers about any unique considerations that should. Trusted agent also reserves the right to terminate the drill if it seems appropriate at any point in time. Trusted agents from the field intimate the evaluator on the time stamps of activities at field level via text message.

6. Players:

- *Health facility:* Players are the front-line staff of the facility on duty in the OPD at the time of the exercise. They are responsible for identification, isolation, medical care (including sample collection) and reporting of the NIPAH virus case. Players will be evaluated based on the objectives, by the evaluator.
- *Health services:* Administrators (top down from DMO), Administrative and field staff of concerned PHCs, PEID cell team including epidemiologists

ROLES AND RESPONSIBILITIES OF EXERCISE PARTICIPANTS IN DESIGNATED NIPAH TREATMENT CENTRE

Superintendent

- a) Over all Co-ordination of the operation
- b) Checks with all Operational Chiefs
- c) Give necessary instructions to all operational Chiefs & collect present status of the operation
- d) Know about the number of patients brought to the hospital.
- e) Collect all data's about the patients & solve all queries.

- f) Communicate with the neighbouring hospitals, if needed

PEID cell coordinators of Medical Colleges

- a) Know about the number of patients brought to the hospital & Collect all data about the patients
- b) Communicates with the Superintendent.
- c) Co-ordinates with the Superintendent regarding the requirements of treating officers (OT/ CSSD/Bed availability in ICU and ward)

Operation Chief Clinical- HOD , Infectious Disease

- a) Over all in charge of treatment area
- b) Know about the number of patients brought to the hospital & Collect all data's about the patients
- c) Communicates with the Superintendent.
- d) Co-ordinates with treatment officers in treating the patients
- e) Co-ordinates with the Operation Administrative Chief regarding the requirements of treating officers.
- f) Communicate with the relatives regarding the victim's status and plan of care

Treating physicians

- a) Give preliminary care to patients irrespective of the specialty they are
- b) Give necessary information regarding the condition to Clinical Chief
- c) Give advice regarding further plan of care of the patient you are seeing
- d) Write brief note about the patient
- e) Write the plan of care on the case sheet immediately after seeing the patient

Nursing superintendent (Officer)

- a) Co-ordinates with the Operation Chief Clinical regarding the further care of the patients.
- b) Co -ordinates with the Head Nurses regarding mobilization of staff from the floor.
- c) Ensure the bed availability of the floor/ ICU.
- d) Management of logistics.
- e) Coordinate house keeping activities.

Head Nurse/ Staff Nurse in Charge

- a) Make sure that the rooms are ready as soon as possible to receive the patients
- b) Management of logistics (PPE, hand rub etc) when requested by the concern departments.

- c) Help the special NIPAH OP staff whenever requested
- d) Discharge the patients immediately in consultation with consultants

Nursing Staff (NIPAH OP/Ward)

- a) Carry out the orders of the treating physician
- b) Document about the treatment given case sheet / record vitals
- c) Co-ordinate regarding the disposition of patients who was seen by the treating physician

NIPAH OP (Reception) in charge

- a) Collect the personal details of the patients
- b) Register the patients with UHID number.
- c) Preliminary assessment and history taking
- d) Directing the patients to treating physician
- e) Provide IEC regarding NIPAH virus infection to the care taker
- f) Emotional Support to the patient and family

Radiology

- b) Call the radiologist and inform

Biomedical Engineering

- a) Arrange necessary equipment to the treatment area.
- b) Mobilize equipment from floor if needed. (Portable X Ray, Ventilators)
- c) Help in arranging treatment area.

Housekeeping

- a) House Keeping in charge should see that sufficient staff is present to maintain the cleanliness of the treatment area
- b) Waste disposal of the treatment area is carried out frequently to avoid over flow spillage
- c) Help the staff whenever they request

Chief Security

- a) Arrange Vehicle and driver on standby to collect staff, volunteers, blood, suppliers, or transfer patients to other hospitals
- b) Keep lifts working
- c) Check security guards are in their correct positions

ROLES AND RESPONSIBILITIES OF EXERCISE PARTICIPANTS IN PHC/CHC/TALUK HOSPITALS

Medical officer in charge

- a) Notify District health authority regarding the case of NIPAH virus infection.
- b) Arrange designated ambulance service to transport the patients to

designated NIPAH treatment centre.

- c) Take relevant history from the patient.

Staff nurse

- a) Take detailed history from the suspected NIPAH virus including phone numbers.
- b) Arrange a temporary isolation facility till the ambulance arrives.
- c) Shift the patient to ambulance and give proper instructions

Health supervisor/Health Inspector/Junior Health Inspector

- a) Collect details from staff nurse and initiate contact tracing and risk stratification
- b) Provide IEC materials

EXERCISE CONDUCT

Healthcare facility: The exercise evaluator will make initial contact with the trusted agent once on-site at the facility. The trusted agent will accompany the evaluator to the OPD/emergency department where they will remain for the duration of the exercise. In order to avoid undue suspicion, the exercise evaluator may assume the role of a vendor, consultant or colleague of the trusted agent that is viewing the emergency department for reasons unrelated to the drill. Once in the emergency department, the evaluator will instruct the exercise controller via cellphone to enter the emergency department and begin the drill.

The patient-actor will enter the facility's emergency department upon notification from the evaluator that it is appropriate to do so. The patient-actor will play the role of the patient presenting with symptoms consistent with any of the given exercise scenarios. The patient-actor will collect any data possible during the course of exercise play; it is recommended to take notes and mark time stamps on a mobile device, however, it is acknowledged that taking notes may not be feasible given the unannounced nature of the drill. If possible, there should be a plan for the controller to communicate key time stamps to the evaluator as they occur (e.g. via text) whenever possible.

In the health care facilities, the trusted agent will not be expected to collect data other than any qualitative information that may be captured during the hot wash.

Field activities: Key time stamps are also communicated to the evaluator by trusted agents at each point of communication in the health department, PEID Cell and field via text message.

General rules that govern exercise play:

- Real-world emergency actions take priority over exercise actions.
- Exercise participants will comply with real-world response procedures, unless otherwise directed by the exercise controller.
- Although these drills are unannounced, a trusted agent at each facility will coordinate activities with the exercise controller to ensure that all applicable safety and security provisions are followed.
 - The trusted agent will retain the right to terminate the exercise if at any point they feel it is appropriate.
- At no point should the controller allow facility staff to perform any invasive procedures or administer any medications.

The exercise controller may terminate the drill at any point that he or she feels it is appropriate given the actions being taken by facility staff, these may include (but shall not be limited to):

 - Notification to local media outlets of a possible communicable disease
 - Administering medications based on the controller's reported symptoms
 - Performing invasive procedures, such as giving IV fluids, based on the controller's reported symptoms
 - Evacuation or movement of patients in portions of the emergency department or other actions that may otherwise compromise the care of other patients in the emergency department

The exercise is followed by a de-briefing activity by the drill team involving all participants

Example:

ONCE THE PATIENT ARRIVES IN DESIGNATED NIPAH TREATMENT CENTRE

Person in charge of NIPAH OP after wearing PPE must take detailed history from the patient & make arrangements for consultation with treating physician.

Consider admitting the patient in accordance with the opinion of treating physician.

Arrange a staff with PPE to accompany the patient.

Clear the way to admission room and shift the patient to alert room already arranged for admission (CCU & Deluxe pay ward).

AFTER ADMISSION

- Examine the patient in detail after taking all the necessary precautions (PPE).
- Instruct all the staff involved in dealing with patient to follow necessary infection control practices strictly (especially PPE, Hand hygiene).
- In case of investigations/scanning/X-ray, inform the Labs/ Centre before sending samples for taking precautions.
- Instruct them to wear PPE during investigation.



DURING SAMPLE COLLECTION

Sample to be collected as early as possible, in an isolated room with all biosafety precautions.

Samples should be sent along with the Performa obtained from testing laboratory containing the detailed history of patient. Sent to the concerned lab after triple layer packing.

During sample collection

Wear complete disposable PPE.

Follow strict hand hygiene practices.

Inform security officer to arrange an ambulance for sending the sample.



WASTE MANAGEMENT

Discard all waste except needles in labelled yellow covers.

Needles in white containers (as directed by IMAGE).

Hose keeping wing should ensure the cleanliness of treatment area.

DEBRIEFING/ HOTWASH QUESTIONS:

What actions did you take? Who, if anyone, did you notify? What would your next steps have been? Is there anything you would have done differently, and why? How could this drill be improved? Did you know, or suspect, that this was a drill? Did you find this drill valuable?

EVALUATION

Evaluation of these drills will be performed by both the exercise evaluator and the patient-actor. In doing so, data collected during the course of exercise play will be as complete as possible even though the evaluator and actor may become separated throughout the course of the drill.

The evaluator will collect all data possible in the Exercise Evaluation Guide (EEG); however, it is expected that this may not be possible should the patient-actor be moved out of view by clinical staff for further evaluation and/or isolation. The patient-actor should assist the evaluator in filling the evaluation guide following the completion of the drill, for incorporation into the After Action Report

KERALA NIPAH VIRUS DRILL - EXERCISE EVALUATION GUIDE

Health care centre:

Controller:		Date:	
Evaluator:		Scenario:	
Patient-actor/s:		Start Time:	
Trusted Agent:		End time	

Key measures	Time stamp
Time patient entered the Special NIPAH OPD.:	
Time patient received by the staff in charge of NIPAH OP:	
Time brought to the treating physician:	
Time patient dons mask (or other source control measure is initiated):	
Who gave the patient a mask? ☐ By-stander? ☐ Attender ☐ Nurse ☐ Physician ☐ Other:	
Was this the first clinical staff member the patient came into contact with? ☐ Yes ☐ No ☐ Unsure ☐ Not applicable (patient not given amask)	
If other initial source control measures were taken besides masking, please specify:.....	
Time the patient is moved to isolation room:	
Time facility's Infection Control is notified:	
Time ambulance team is called (if needed): (For PHC/CHC/Taluk Hospitals only)	
Time Health department is notified:	
Time for PEID cell to be notified:	
Time for local PHC and field staff to be notified:	
Time of formation of an epidemiological investigation team:	

Risk Screening Questions			
Was the patient asked if they had a fever ?	.	☐	☐
Was the patient asked for history of dry cough			
Was the patient asked about the presence of dyspnoea?		☐	☐
If the patient reported a fever, was he asked if someone close to them had a similar illness/admitted else where/ died?		☐	☐
If the patient reported fever, travel to NIPAH virus affected area/ contact with suspected NIPAH virus case		☐	☐
Infection Control Questions			
Are masks visible and available to patients in the NIPAH OP?		☐	☐
Are hand hygiene supplies visible and available in the patient NIPAH OP?		☐	☐
Was the suspected patient given a mask and appropriate instruction?		☐	☐
Was hand hygiene performed by all staff who came in contact with patient?		☐	☐
Was the patient instructed to perform hand hygiene after coughing or after coming in contact with respiratory secretions ?		☐	☐
Were other staff notified of a possible suspect patient?		☐	☐
Was Infection Control notified?		☐	☐
Isolation questions			
Is the designated isolation room available?		☐	☐
Was the patient placed in Isolation Room ?		☐	☐
Was appropriate Infection Control signage posted for the isolation room?		☐	☐
Did all staff entering the isolation room don the correct PPE (including mask, gloves and gown if indicated)?		☐	☐
Were PPE supplies readily available near the isolation room entrance?		☐	☐
Did the provider wash/sanitize hands after patient encounter?		☐	☐
Sample collection and transport questions			
		☐	☐
Was adequate equipment available for collection and transport of specimens?		☐	☐
Was a laboratory/laboratories designated for NIPAH virus diagnosis?			
Was the institution aware about the designated laboratory facility/facilities for NIPAH virus diagnosis?		☐	☐
Was infection control precautions followed while collection, labeling and transport of samples?		☐	☐
Were the samples labelled appropriately about the biohazardous nature of specimen?		☐	☐
Was the designated laboratory/laboratories informed via phone about the possible NIPAH virus case?			
Field activities questions	Y	N	NA
Was there any delay in communicating the information down the chain of communication up to the field staff?			
Was there any confusion regarding individual roles and responsibilities?			
Was the case definitions and checklists for classifying the contacts according to risk readily available as soft copies/online?			
Was the epidemiological investigation team prompt in initiating contact surveillance?			
Was a media spokesperson identified?			

TARGET TIMES:

Time taken for the following should be calculated by the evaluator from the time stamps collected. This should be compared with a set target time:

1. Patient arrival at health facility other than designated NIPAH treatment centre Designated NIPAH treatment centre
2. Patient arrival in NIPAH OPD patient provided mask
3. Arrival of the patient to special NIPAH OP Treating physician's consultation
4. Physician's consultation patient shifted to isolation room
5. Diagnosis of probable NIPAH virus initiation of contact tracing
6. Diagnosis of probable NIPAH virus collection and transportation of samples

AFTER-ACTION REPORT (AAR)

Within 2 weeks, the drill team has to submit an AAR to the health facility, health department and field staff regarding the success of the procedures, gaps identified and corrective measures to be taken. Corrective measures to be taken in terms of HR, training, equipment, infrastructure and policy should be identified and communicated through the AAR. This action plan should be disseminated among all participants of the drill and should lead to meaningful discussions and actions on further improvement.

References:

1. WHO Simulation Exercise Manual
<http://www.who.int/iris/bitstream/10665/254741/1/WHO-WHE-CPI-2017.10-eng.pdf?ua=1>
2. NYC Mystery Patient Drill
<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&uact=8&ved=2ahUKEwj017f1943nAhXJwTgGHao0BLUQFjABegQICxAE&url=https%3A%2F%2Fwww1.nyc.gov%2Fassets%2Fdoh%2Fdownloads%2Fpdf%2Fem%2Fpatient-drill-explan.pdf&usg=AOvVaw0tnnY5f2-wSzvYtIteONbM>
3. No-Notice Mystery Patient Drills to Assess Emergency Preparedness for Infectious Diseases at Community Health Centers in New York City, 2015–2016 Mohsin Ali and Marsha D. Williams
<https://dx.doi.org/10.1007%2Fs10900-018-00595-5>

Acknowledgement

The Health department has published the Standard Operating Procedure to tackle NIPAH outbreak. A multidisciplinary resource group was constituted involving senior faculties from Directorate of Medical Education and field officers from Directorate of Health Services.

These guidelines could be drafted with wholehearted efforts of all the doctors of the resource group and others from the PEID Cells and the doctors from the field. We earnestly appreciate their contribution.

Kerala Health

Resource Group

Sl No	Name	Designation
1.	Dr T K Jayakumar	Superintendent MCH Kottayam
2.	Dr Indu P S	Professor & HoD Community Medicine, MCH Thiruvananthapuram
3.	Dr Chandni	Professor, Emergency Medicine, MCH Kozhikode
4.	Dr Aravind	Asst Professor, Deptt of Infectious Diseases MCH Thiruvananthapuram
5.	Dr Binu Areekkal	Associate Professor, Community Medicine, MCH Thrissur
6.	Dr Meenakshy	Addl Director Health Services
7.	Dr Mathew	DPM Ernakulam
8.	Dr Naveen	DPM Kozhikode
9.	Dr Dileep Kumar	GM KMSCL
10.	Dr Dahar	MO, Noolpuzha FHC, Wayanadu

Doctors who participated / contributed in the Nipah related documents preparation

1. Dr Suma Krishnasastry Professor , Internal Medicine, MCH Alappuzha
2. Dr Chandni Professor, Emergency Medicine, MCH Kozhikode
3. Dr Sorna P N, Junior Resident, Community Medicine, GMC, Trivandrum
4. Dr Malathi M, Junior Resident, Community Medicine, GMC, Trivandrum
5. Dr Aparna Mohan , Junior Resident, Community Medicine, GMC, Trivandrum
6. Dr Anjana NK, Junior Resident, Community Medicine, GMC, Trivandrum
7. Dr Punrnami AP, Junior Resident, Community Medicine, GMC, Trivandrum
8. Dr Mariyam Rajee Alex, Senior Resident, Community Medicine, GMC, Trivandrum

9. Dr Meenu Suresh, Senior Resident, Community Medicine, GMC, Trivandrum
10. Dr Aravind.R, HOD, Infectious Diseases, GMC, Trivandrum
11. Dr Tony Lawrence, Assistant Professor, Community Medicine, GMC, Trivandrum
12. Ms Deepa.V.N , Infection Control Nurse, PEID Cell
13. Dr Sahira, Assistant Professor, Microbiology, GMC, Trivandrum
14. Dr Sarada Devi, Professor and head, Microbiology, GMC, Trivandrum
15. Dr Harikrishnan , Junior Resident, Community Medicine, GMC, Trivandrum
16. Dr Chintha.S, Assistant Professor, Community Medicine, GMC, Trivandrum
17. Dr Anuja.M, Associate Professor, Health Education
18. Dr Indu.P.S, Professor and head, Community Medicine, GMC, Trivandrum
19. Dr Meenakshi V, Additional DHS(public health)
20. Dr Manjula. VD, Professor and head, Community Medicine, GMC, Eranakulam
21. Dr Amar Fetle, State Nodal Officer
22. Dr Tarun Bhatnagar, Epidemiologist, ICMR



**Department Of Health And Family Welfare
Government Of Kerala**

Annexe II, Secretariat
Thiruvananthapuram
Kerala-695001

Kerala HEALTH



GOVERNMENT OF KERALA

Abstract

Health & Family Welfare Department - Technical Guidelines on Prevention, Diagnosis and Treatment of Amoebic Meningoencephalitis in Kerala - Orders issued.

HEALTH & FAMILY WELFARE (F) DEPARTMENT

G.O.(Rt)No.1760/2024/H&FWD Dated,Thiruvananthapuram, 20-07-2024

Read Proposal from the Chairperson, State Medical Board

ORDER

In the context of reporting Amoebic Meningoencephalitis cases in the State, for ensuring effective control and management of the disease, Government are pleased to issue the "*Technical Guidelines on Prevention, Diagnosis and Treatment of Amoebic Meningoencephalitis in Kerala*" as annexed to this order.

(By order of the Governor)

SHIJA C G

JOINT SECRETARY

To:

The State Mission Director - National Health Mission,

Thiruvananthapuram.

The Director of Health Services, Thiruvananthapuram.

The Director of Medical Education, Thiruvananthapuram.

The Chairperson, State Medical Board

All District Medical Officers (Health)

Principal Accountant General (A&E/Audit) Kerala.

Information & Public Relations (Web & New Media) Department

Stock File/ Office Copy to file no.F2/219/2024-HEALTH

Forwarded /By order

Signed by

Vilasini K V

Date: 20-07-2024 18:16:03

Section Officer

TECHNICAL GUIDELINES ON PREVENTION, DIAGNOSIS AND TREATMENT OF AMOEBIC MENINGOENCEPHALITIS IN KERALA

Amoebic encephalitis is a rare but lethal central nervous system infection caused by free-living amoebae found in freshwater, lakes, and rivers. There are two types of amoebic encephalitis, namely primary amoebic meningoencephalitis (PAM) and granulomatous amoebic encephalitis (GAE). Primary amoebic meningoencephalitis (PAM) is a disease caused usually by infection with *Naegleria fowleri*, a microscopic amoeba commonly called a "brain-eating amoeba." This infection destroys brain tissue, causing severe brain swelling and death in most cases. PAM is rare and usually occurs in otherwise healthy children, teens and young adults. The initial symptoms of PAM are indistinguishable from bacterial meningitis, while the symptoms of GAE can mimic a brain abscess, encephalitis, or meningitis. These infections are almost uniformly fatal with only few reported survivors globally.

Kerala Scenario

Sporadic cases of PAM have been reported from many parts of Kerala in the last decade. As of July 7, 2024, over the last 2 months, five cases of PAM have been reported from North Kerala. Clinical features were suggestive of PAM. The cases over the last 2 months have been reported in children aged 5,13,12, 13 and 15 years respectively with a male-to-female ratio of 3:2 [n=5].

Introduction

Free-living amoebae are protozoan environmental parasites, found mainly in freshwater, ponds, lakes, and rivers. There are four main genera of amoebae implicated in human disease, namely *Naegleria* (only *Naegleria fowleri*), *Acanthamoeba* (several species), *Sappinia* (only *S. pedata*), and *Balamuthia* (only *Balamuthia mandrillaris*). Rarely other free-living amoebae (FLA) such as *Vermamoeba [hartmanella] vermiformis* have also been implicated in human disease. The amoebae exhibit CNS tropism leading to meningoencephalitis. *Acanthamoeba* can also cause keratitis and disseminated infections in Immunocompromised.

Two distinct clinical syndromes are reported with free-living amoeba infections.

- Primary amoebic meningoencephalitis (PAM)
- Granulomatous amoebic encephalitis (GAE).

Naegleria fowleri is the causal agent of primary amoebic meningoencephalitis (PAM), which is an acute, fulminant, and rapidly fatal infection of the central nervous system (CNS). PAM develops following several days of exposure to the contaminated water source and typically causes death within 1-2 weeks of infection. Very few individuals survive the infection, because of its rapid onset and delayed diagnosis. Only 11 survivors of confirmed *N fowleri* PAM have been reported in the literature.

Naegleria species are ubiquitous in soil and fresh or brackish water (lakes, rivers, ponds). In general, they are sensitive to environmental conditions such as aridity and pH extremes and cannot survive in seawater. In humans, they are found in the throat and nasal cavity. *N fowleri* is heat-tolerant and can survive temperatures up to 45.8°C, pre-adapting the species to mammalian body temperature. Hence, an incubation temperature of 45°C is routinely used to isolate *N fowleri* from water samples, while suppressing the growth of other amoebae in the samples. As it grows best at elevated temperatures, *N fowleri* has been isolated from warm-water bodies, including man-made lakes and ponds, hot springs, and thermally polluted streams and rivers. It feeds on bacteria in the water bodies for survival. *N fowleri* is not found in saltwater sources such as seawater. Most *N fowleri* infections occur in the summer months.

Impact of Global Warming

The free-living amoeba with the most evidence of the effects of climate change is *N. fowleri*. *N. fowleri* is thermophilic and one of its food sources is cyanobacteria, which flourishes in warmer waters. Climate change raising the water temperature and the heat driving more people to recreational water use is likely to increase the encounters with this pathogen. Furthermore, warming temperatures may be expanding the geographical range of *Naegleria* species. Many reported cases of PAM occurred in the weeks after an increase in air temperature, indicating a potential relation to climate change.

Lifecycle of *N.fowleri*

The life cycle of *N. fowleri* consists of 3 stages: trophozoite, a temporary flagellar stage known as amebo-flagellate, and cyst. The active replicating form is a trophozoite that can reproduce asexually. Trophozoite is the vegetative or feeding stage of the amoeba and is the infective form. In humans, this form is found in CSF or in tissue. Cysts are usually absent in clinical specimens, as the infection is so rapid and fatal that the patient typically dies before the trophozoites encyst. The trophozoite can transform into a flagellate stage, in which state it can survive without nutrition. This is also the stage in which the amoeba is distributed through water bodies. In harsher climates, the flagellated form can undergo encystation into a double-walled cyst and withstand

unfavourable conditions. This enables the *N. fowleri* to survive cold temperatures, and nutritively hostile conditions. (Figure 1)



Figure-1: Shows the life cycle and infection acquisition of *Naegleria fowleri* (A). The organism lives in the form of a cyst, flagellate or trophozoite state. Freshwater lakes and ponds (B) in summers at high temperatures ~40°C favours the trophozoite forms of *N. fowleri* that can enter the nose during swimming (C), ablution (D) or the water sports of different types (E).

Pathophysiology

PAM can occur in previously healthy young individuals exposed to warm, especially stagnant, fresh water. The portal of entry by the amoebae is through the olfactory mucosa and the cribriform plate. The oral consumption of water contaminated with *N. fowleri* is not associated with symptomatic disease.

The pathophysiology is thought to be due to an amplified host immune response causing an exaggerated inflammatory reaction, necrotizing encephalitis and subsequent parenchymal damage. It is thought that *N. fowleri* causes an acute inflammatory cytokine response, whereas *Acanthamoeba* and *Balamuthia* spp. cause a type IV hypersensitivity reaction. These inflammatory responses contribute to neuronal damage and subsequent irreversible brain damage.

Etiology

Primary meningoencephalitis

N fowleri is ubiquitous in soil and is also found in warm freshwater, particularly if the water is stagnant. Exposure to this amoeba is so common that studies have shown that Children younger than 2 years frequently carry the organism asymptotically in their nose and throat, especially in warmer months and climates without getting infected. Infection with this pathogen occurs in both immunocompromised and immunocompetent individuals.

PAM is an exceptionally uncommon occurrence resulting from CNS invasion of the host by *N fowleri*. During a period of a few days to 2 weeks after inoculating a patient who had been swimming, diving, bathing, or playing in warm, usually stagnant, freshwater, the amoebae migrate through the cribriform plate, along the fila olfactoria and blood vessels, and into the anterior cerebral fossae, where they cause extensive inflammation, necrosis, and hemorrhage in the brain parenchyma and meninges.

Case reports have detailed rare infections following ritual ablution with tap water instilled into the nostrils. Similarly, sinus irrigation with contaminated tap (or other) water using neti pots (or similar devices) has been implicated as the mode of inoculation resulting in PAM.

Granulomatous amebic encephalitis

In contrast to PAM, GAE results from one of the following two pathways. With acanthamebic keratoconjunctivitis, amoebae may spread directly from the cornea to the CNS, though this is uncommon. More typically, GAE results from hematogenous seeding of the CNS following primary inoculation of the lungs or skin by *B mandrillaris*, *Acanthamoeba*, or *Sappinia* species. Once in the CNS, the pathogen results in focal granuloma and abscess formation. GAE more commonly occurs in immunocompromised hosts; however, GAE may also affect otherwise healthy hosts.

Table 1. Probable Water Exposures-Activity and Water Source-for Reported Cases of Primary Amoebic Meningoencephalitis

Exposure and Category	n (%)
Water activity (N = 247)	
Swimming/diving	143 (58)
Bathing ^a	40 (16)
Water sports (eg, waterskiing, wakeboarding, jet skiing)	24 (10)
Nasal irrigation	22 (9)
Splashing	12 (5)
Water festival	2 (1)
Other	4 (2)
Water source (N = 265)	
Lake/pond/reservoir	119 (45)
Swimming pool ^b	34 (13)
Tap water ^c	32 (12)
Canal/ditch/puddle	32 (12)
River/stream	21 (8)
Geothermal water	20 (8)
Water tank/cistern	5 (2)
Aquatic sports venue	2 (1)

[a.Dependent on the setting, the term “bathing” may be used to refer to cleaning oneself or swimming. It was not possible to distinguish these definitions from case reports.

b.Detailed information regarding the operation, management, and condition of the pool at the time of the case-patient exposure was not reported for most cases.

c.Tap water includes water obtained through public water systems (n = 24), wells (n = 6), or boreholes (n = 2).]

In addition to swimming or diving in water bodies contaminated with *N. fowleri*, the use of neti pots for the treatment of sinusitis has been implicated in causing *N. fowleri* infection. The use of nasal plugs and nose clips completely eliminates the risk of infection.

Epidemiology

Although rare, cases of PAM and GAE have been reported worldwide, reflecting the ubiquity of the organisms. The first case of PAM was described by Fowler and Carter in Australia in 1965 followed by the first case described in the United States in 1966. PAM is more common in warmer regions and in the warmer months of spring and summer. There is no seasonal variation with GAE. The risk for infection has been estimated at 1 case per 2.6 million exposures to *N fowleri*.

Sex- and age-related demographics

The male-to-female ratio of PAM is 2:1 overall. PAM has been reported in infants as young as 4 months and is most commonly observed in the first 3 decades of life, with one study finding the median age of infection was 11 years (range: 4-56 years). The male-to-female ratio of GAE is 5:1 worldwide and can be seen at any age.

Clinical presentation and treatment

The diagnosis of PAM carries a high mortality rate of greater than 97%. The clinical presentation of PAM is often indistinguishable from bacterial meningitis with headache, fever, nausea, and vomiting being the most common presenting signs and symptoms. By the time other more common causes of meningitis are ruled out and the diagnosis of PAM is considered, it is often too late to save the patient from the cerebral edema that quickly develops and causes death. Studies show a median incubation period of 5 days and a median time from onset of symptoms to death of five days. Most patients present to medical care with signs or symptoms indicative of central nervous system involvement. Analysis of cerebrospinal fluid (CSF) usually reveals a high opening pressure, a predominantly neutrophilic pleocytosis, the presence of RBC, elevated protein concentration, and low glucose levels.

Table 2. Initial Cerebrospinal Fluid Laboratory Findings on Admission for Reported Cases of Primary Amebic Meningoencephalitis (N = 237) by Classification

Test (Reference Value)	Total (N = 237)		Confirmed (n = 118)			Probable (n = 80)			Suspect (n = 39)		
	n	Median (Range)	n	Median (Range)	P Value	n	Median (Range)	P Value ^a	n	Median (Range)	P Value ^b
Opening pressure (100–200 mm H ₂ O)	31	290 (36–570)	11	380 (36–530)	Ref	14	255 (138–570)	.261	6	215 (65–500)	.312
Red blood cell count (0 cells/ μ L, CSF)	124	212 (0–30 750)	87	212 (0–30 750)	Ref	29	350 (0–24 600)	.392	8	756 (0–2600)	.545
White blood cell count (0–5 cells/ μ L)	232	1238 (0–30 000)	117	1830 (10–29 000)	Ref	78	1510 (7–30 000)	.296	37	415 (0–22 000)	<.001
% Neutrophils (2% $\pm$ 5%)	181	82 (0–100)	97	80 (12–100)	Ref	64	90 (15–100)	.002	20	73 (0–100)	.104
% lymphocytes (62% $\pm$ 34%)	128	20 (2–100)	72	20 (2–90)	Ref	38	15 (2–85)	.691	18	65 (5–100)	<.001
Protein (15–60 mg/dL)	215	326 (20–1374)	109	326 (24–1342)	Ref	70	361 (20–1374)	.978	36	115 (20–731)	<.001
Glucose (40–80 mg/dL)	208	29 (0–223)	106	29 (0–180)	Ref	69	22 (0–223)	.401	33	42 (0–185)	.035

Only 27% of U.S. cases were diagnosed before death. These findings indicate that the diagnosis is often considered too late or not at all in patients with meningitis.

Characteristics of PAM are as follows:

- PAM commonly affects children and young adults who have previously been healthy[immunocompetent].
- This disease occurs more often during the warmer months of the year and in warmer climates.
- Patients with PAM typically have a history of swimming, diving, bathing, or playing in warm, generally stagnant, freshwater during the previous 1-9 days.
- Rarely, patients with PAM may experience disordered smell or taste.
- Most often, the symptoms of PAM are indistinguishable from those of acute bacterial meningitis.
- The acute onset of PAM occurs over a period of hours to 1-2 days.
- The neuro-olfactory route provides *N.fowleri* quick access to the brain and results in impaired adaptive immune response, causing a very rapid disease course.

- *N.fowleri* evokes a pro-inflammatory immune response with extensive brain-tissue damage whereas *Acanthamoeba* evokes a mixed immune response.

Granulomatous amebic encephalitis

The characteristics of GAE include the following:

- It affects individuals of all ages, although those at the extremes of age may be more susceptible
- Persons with debility or immunocompromise may be more susceptible to GAE.
- There is no seasonal variation because the causative pathogens are ubiquitous.
- Individuals with GAE may have keratoconjunctivitis or a skin ulcer or lesion preceding neurologic symptoms.
- A subacute or chronic presentation lasting days or weeks.

Clinical Stages of PAM

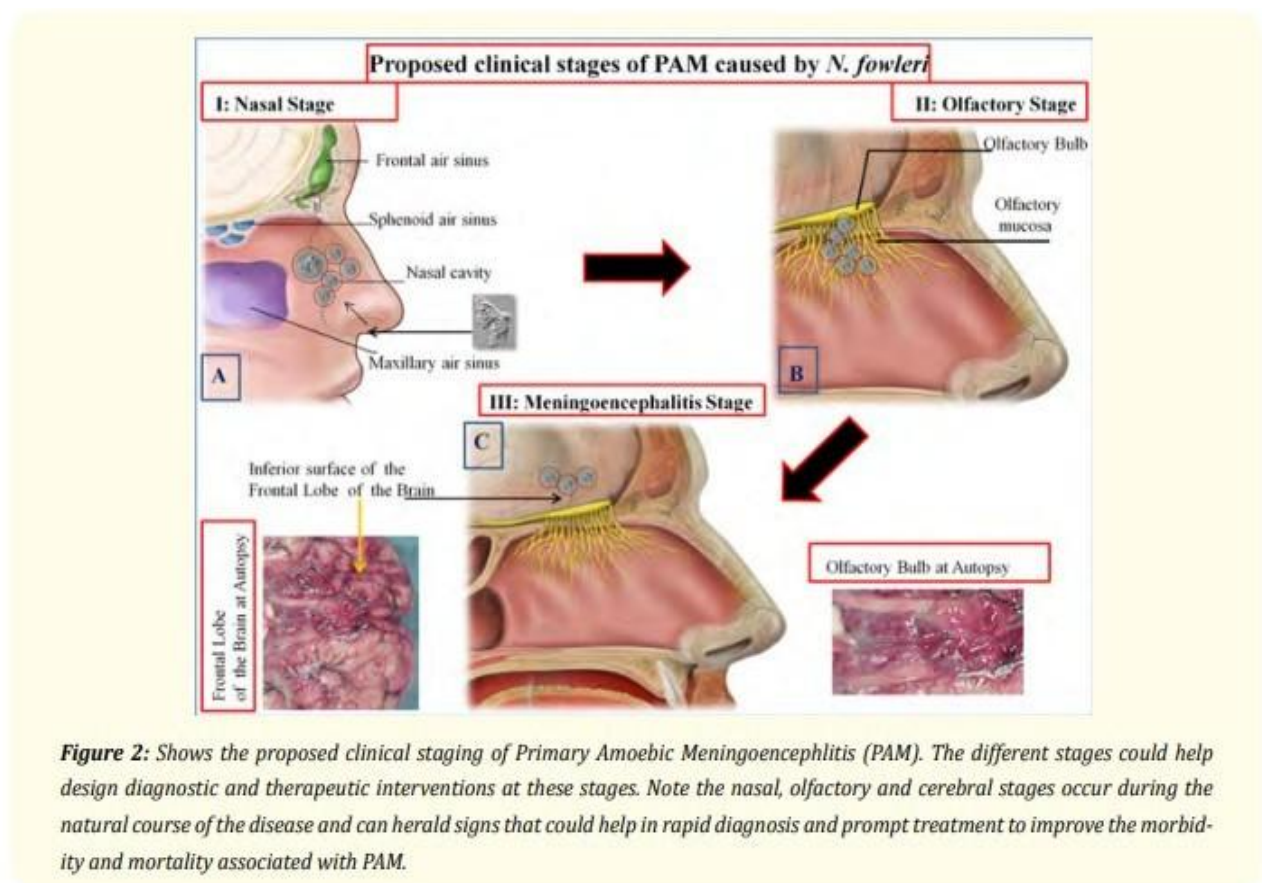
Patients with PAM are mostly admitted in a pre-coma state, and no staging system currently exists to classify the disease. Almost all the survivors of PAM in the past 60 years were diagnosed and treated at a pre-cerebral stage. This shows that early diagnosis of PAM and timely initiation of an antimicrobial cocktail might be lifesaving. To facilitate early diagnosis and timely initiation of treatment to utilize the therapeutic window of opportunity, clinical staging has been proposed by researchers from Aga Khan University Medical College [Fig 2]

Clinical Stage I: Nasal Stage (Pre-Cerebral Stage)

N. fowleri gains entry into the human host via the nose and follows the nasal passage. The introduction of water deep into the nasal orifice causes the protist to encounter the nasal mucosa, leading possibly to infection.

Clinical Stage II: Olfactory stage

In certain cases, *N. fowleri* proceeds from nasal mucosa to olfactory mucosa and bulb. The involvement of the olfactory mucosa and olfactory bulb is a transient stage before the involvement of the brain. This stage is heralded by changes in the olfactory perception (parosmia). Rojas-Hernandez, *et al.* have experimentally used immunohistochemistry in mice infected with *N. fowleri* to characterize the process by which the protist gains entry to the nasal mucosa. It reaches and crosses the cribriform plate, a sieve-like structure that supports the olfactory bulb and contains conduits between the anterior cranial fossa and the nasal passage. The protist reaches the olfactory bulb and begins to replicate. This induces an inflammatory response in patients that together with cytotoxic activity from the amoeba, results in necrosis, focal hemorrhages and exudates formation. Figure 2: Shows the proposed clinical staging of Primary Amoebic Meningoencephalitis (PAM).



Clinical Stage III: Meningoencephalitic stage

N. fowleri causes neuronal injury, both through direct cell damage, and by the release of cytotoxic proteins. Cellular debris and these proteins lead to an inflammatory response involving cytokine release, which mediates further

tissue damage. The final stage in the pathogenesis of *N. fowleri* infection is rapidly progressing meningo-encephalitis. The patient presents in this stage after 1 to 2 days from the olfactory stage described above. Herniation and cerebral edema occur due to a severe inflammatory response.

Diagnosis

Clinicians should have a high index of suspicion for PAM in the setting of acute meningoencephalitis with negative results for bacteria and common viruses, which should prompt the search for amoebae in the CSF. A history of exposure increases the likelihood of PAM, but it is not always obtained. In the current Kerala context, any person with an epidemiological link should be immediately suspected of having PAM.

The diagnosis of PAM is generally established via observation of motile trophozoites on examination of a CSF wet mount preparation immediately after obtaining the sample. A phase-contrast microscope is useful to optimize visualization of the amoeba. Trophozoites tend to lose motility and may resemble leukocytes. Giemsa or trichrome stains help in identifying morphologic features of the trophozoites: 10 to 25 microns in size with a single nucleus and a centrally located nucleolus with no peripheral chromatin.

A polymerase chain reaction (PCR) from the CSF facilitates rapid detection; it can identify the deoxyribonucleic acid (DNA) of *N. fowleri* and other free-living amoeba. *N. fowleri* can also be isolated in non-nutrient agar supplemented with enteric bacteria such as *E.coli* or *Klebsiella*. Serology is not useful for diagnosis.

The Centers for Disease Control and Prevention recommends microscopic examination of fresh, unfrozen, non refrigerated cerebrospinal fluid (CSF) for presumptive diagnosis. If amoebae are identified, the diagnosis should be confirmed through PCR.

Imaging findings on computed tomography (CT) and magnetic resonance imaging (MRI) are nonspecific. Brain edema, basilar meningeal enhancement, hydrocephalus, and areas of cerebral infarction have been described. Lesions in the brain tend to be located in the orbitofrontal and temporal lobes, base of the brain, cerebellum, and upper spinal cord. A purulent exudative inflammation

along the leptomeninges and extensive necrosis and hemorrhage of the parenchyma are characteristic pathological findings. Brain tissue can be examined for trophozoites, and brain sections can be stained with immunofluorescent anti-*N. Fowleri* antibodies

Differential diagnosis —

PAM must be distinguished from acute bacterial meningitis. The clinical manifestations and CSF findings of these two entities are similar. Epidemiological exposure may be useful in differentiating the two conditions. Usually, patients with PAM receive treatment for bacterial meningitis before the definitive diagnosis is established.

Treatment—

The optimal approach to treatment of PAM due to *N. fowleri* is uncertain; no studies evaluating the efficacy of single-drug or combination-drug regimens have been performed. The rarity of the disease, delay in diagnosis, fulminant clinical course, and the difficulties in making a rapid diagnosis have hampered the evaluation of drug regimens. In theory, the best drug regimen should include an amebicidal drug (or a combination of drugs) with good in vitro activity that is capable of crossing the blood-brain barrier.

Based on articles published following well-documented survivors as well as extrapolation from experience with treatment of infection due to *Acanthamoeba* and *Balamuthia* infection, the following combination of drugs (in addition to steroids to control cerebral edema) is expected to have maximum clinical efficacy.

- Conventional amphotericin B (1.5 mg/kg/day intravenously [IV] +/- intrathecally)
- Rifampin (rifampicin; 10 mg/kg/day orally in three divided doses or every 24 hours)
- Fluconazole (10 mg/kg/day IV or orally)

- Miltefosine (<45 kg: 50 mg orally twice daily; ≥45 kg: 50 mg orally three times daily)

- Azithromycin (500 mg IV or orally)

The optimal duration of therapy is uncertain; reports range from 9 to 30 days.

Amphotericin B deoxycholate demonstrates the most favorable in vitro activity (with minimum inhibitory concentrations [MICs] in the range of 0.018 to 1 mcg/mL) and is considered the drug of choice. Administration of amphotericin B is warranted as soon as the diagnosis is considered. Liposomal amphotericin B is less effective in animal models and has higher MICs than the conventional preparation. *Acanthamoeba* is not susceptible to Amphotericin B in in vitro studies.

Other active drugs in vitro include the azoles (fluconazole, voriconazole, ketoconazole, posaconazole, and itraconazole), rifampicin, miltefosine, and azithromycin. The in vitro activity of rifampicin is uncertain. Variations in virulence factors and sensitivity to antimicrobials have been postulated to explain clinical outcomes.

Approximately 11 survivors of PAM are reported in the literature. In most of these cases, an early diagnosis was made, and treatment with amphotericin B was initiated promptly; the most frequently used regimen was amphotericin B plus rifampicin (10 mg/kg/day). The synergy of amphotericin B with azoles (fluconazole 10 mg/kg/day) and rifampin has also been described. In one case, intrathecal administration of amphotericin B and miconazole was used. Another report documents five survivors in the United States. It is difficult to recommend a particular regimen but neuroprotective measures, reducing intracranial pressure, and hypothermia have been tried.

The use of miltefosine for the treatment of PAM has been extrapolated from favorable clinical experience with its use in the treatment of *Balamuthia mandrillaris* and *Acanthamoeba* spp infections.

Azithromycin has both animal and in vitro efficacy against *N. fowleri* and appears to be synergistic when administered with amphotericin B . Posaconazole has been found to inhibit the growth of *N. fowleri* in vitro within 12 hours, and experimental murine infection has been cured with posaconazole, suggesting that in the future this drug may replace fluconazole as the azole of choice; further study is needed to confirm these findings.

Table 3: Treatment of Confirmed Survivors of Primary Amebic Meningoencephalitis (n = 7)

Ref.	Country of Exposure	Year	Age (y)	Sex	Amphotericin B Route, Duration, days	Azole Route, Duration, days ^a	Azithromycin Route, Duration, days	Miltefosine Route, Duration, days	Rifampin Route, Duration, days	Dexamethasone Route, Duration, days	Symptom Onset to Start of Treatment, days
[19]	Australia	1971	14	M	IV (Unk.) ^b IT (Unk.) ^b	...	...	...	...	...	Unk.
[20]	United States	1978	9	F	IV (9) IT (10)	IV (9) IT (9)	...	...	PO (9)	IV (Unk.) ^b	3
[21]	Mexico	2003	10	M	IV (14)	IV/PO (30) ^c	...	...	PO (30)	IV (Unk.) ^b	0
[22]	United States	2013	12	F	IV (26) IT (10)	IV (26)	IV (26)	PO (26)	IV (26)	IV (4)	2
[23]	United States	2013	8	M	IV (19) IT (5)	IV (19)	PO (19)	PO (19)	PO (19)	IV (29)	5
[24]	Pakistan	2015	25	M	IV (Unk.) ^b IT (Unk.) ^b	Unk. ^d (Unk.) ^b	Unk. ^d (Unk.) ^b	PO (Unk.) ^b	IV (Unk.) ^b	...	3
N/A ^e	United States	2016	16	M	IV (14) IT (10)	IV (28)	IV (28)	PO (28)	IV/PO (28) ^c	IV (4)	2

Abbreviations: IT, intrathecal; IV, intravenous; N/A, not applicable; PO, oral; Unk., unknown.

^aThis included miconazole (n = 1 patient) and fluconazole (n = 5 patients).

^bDuration of treatment unknown.

^cCombination of intravenous and oral administration; specific duration of each route unknown.

^dRoute of administration unknown.

Table 4: Recommended Multidrug Regimen in Patients with PAM

Recommended treatment for PAM caused by <i>Naegleria fowleri</i> infection					
A combination of medications is recommended for treatment of <i>Naegleria fowleri</i> infections. These drugs have been used in PAM survivors. Many have been found to have antiamebic activity against <i>Naegleria fowleri</i> in the laboratory.					
Drug	Dose	Route	Maximum Dose	Duration	Comments
Amphotericin B*	1.5 mg/kg/day in 2 divided doses, THEN	IV	1.5 mg/kg/day	3 days	
	1 mg/kg/day once daily	IV		11 days	14-day course
Amphotericin B	1.5 mg once daily, THEN	Intrathecal	1.5 mg/day	2 days	
	1 mg/day every other day	Intrathecal		8 days	10-day course
Azithromycin	10 mg/kg/day once daily	IV/PO	500 mg/day	28 days	
Fluconazole	10 mg/kg/day once daily	IV/PO	600 mg/day	28 days	
Rifampin	10 mg/kg/day once daily	IV/PO	600 mg/day	28 days	
Miltefosine**	Weight<45 kg 50 mg BID Weight>45kg 50 mg TID	PO	2.5 mg/kg/day	28 days	50 mg tablets
Dexamethasone	0.6 mg/kg/day in 4 divided doses	IV	0.6 mg/kg/day	4 days	
*Conventional amphotericin (AMB) is preferred. When AMB was compared with liposomal AMB against <i>Naegleria fowleri</i> , the minimum inhibitory concentration (MIC) for AMB was 0.1 µg/mL, while that of liposomal AMB was 10x higher at 1 µg/mL. Liposomal AMB was found to be less effective in the mouse model and in in vitro testing than the more toxic form of AMB. AMB methyl ester was also found to be less effective in the mouse model. Because the prognosis of <i>Naegleria fowleri</i> infection is extremely poor, consider aggressive treatment.					

Miltefosine is mildly nephrotoxic and the dosing may need to be adjusted for patients with impaired kidney function. However, few data are available

about the effective dose for amebic infection. The risk of nephrotoxicity should be balanced with the risk for death from PAM.

Acanthamoeba meningoencephalitis - a combination of Sulfadiazine + Pyrimethamine + Fluconazole + surgical resection of CNS lesion ± rifampicin. Intravenous/oral cotrimoxazole and flucytosine also may be tried.

Balamuthia mandrillaris

- Two cases: Flucytosine + Pentamidine + Fluconazole + Sulfadiazine + Azithromycin or Clarithromycin + surgical resection of CNS lesion
- One case: Pentamidine + Fluconazole + Sulfadiazine + Clarithromycin

***Sappinia diploidea* (1 case)**

- Azithromycin + Pentamidine + Itraconazole + flucytosine + surgical resection of CNS lesion

Supportive treatment

Along with antimicrobial combination therapy, supportive therapy aimed at reducing intracranial pressure is equally important. In the survivors, along with antimicrobials, aggressive treatment for cerebral edema and the resulting elevated intracranial pressure with dexamethasone, CSF drainage via an external ventricular drain, hyperosmolar therapy with mannitol and 3% saline, moderate hyperventilation (goal PaCO₂ 30-35 mm Hg), and induced hypothermia (32–34°C) etc were administered. Consider the use of induced pentobarbital coma. The intracranial pressure goal is <20 mm Hg. Place nasogastric tube for miltefosine administration.

Raised ICP (suspect in altered sensorium, anisocoria, lateral rectus palsy, decorticate or decerebrate posturing, abnormal breathing pattern, hypertension etc.)

- Keep head in mid position and head end elevation 15-30 ° to facilitate venous drainage.
- 3% saline 5ml/kg (especially if BP is low) or mannitol 2.5 to 5 ml per kg
- IF GCS <8 Intubate with Rapid Sequence Intubation raised ICP protocol

- Maintain euthermia/hypothermia [32-34°C], euglycemia, and normal Blood pressure.
- Avoid hypoxia and Hypercarbia.
- Adequate sedo-analgesia.

In case patient deteriorates: GCS < 8, features of raised ICP, Rapid fall in GCS, Intractable seizures

To consider necrotizing encephalitis with cytokine storm

May start pulse methylprednisolone 30mg/kg for 3 days*

Duration and dose of immunomodulators should be decided by institutional medical board

*Steroids/immunomodulators should be initiated after expert opinion from institutional medical board comprising of Paediatrician/Physician and Neurologist.

Prevention of amoebic meningoencephalitis

Measures to prevent primary amoebic meningoencephalitis include the following:

- Avoidance of diving and jumping into stagnant freshwater.
- Consider using nose plugs for unavoidable exposures or pinching your nose shut when diving or swimming in freshwater.
- Keep your head above water when swimming in freshwater, hot springs, and other untreated thermal bodies of water.
- When participating in water-related activities, avoid digging, or stirring up the sediment.
- Use boiled, filtered, or sterile water for nasal or sinus irrigation, not tap water.
- Wading pools should be emptied each day
- Swimming pools/water theme parks and spas should be kept clean, chlorinated and maintained correctly
- keep sprinklers and hoses away from noses.
- Flush still water from hoses before letting children play with them

If you are using unchlorinated water:

- Don't let water go up your nose when showering or washing your face
- Watch children playing with hoses or sprinklers
- Teach children not to squirt water up their nose

Recommended SOP

- A history of nasal exposure to fresh water in the 14 days before symptom onset should be asked of any patient who presents with symptoms of acute meningitis.
- For patients with meningitis who have a history of recent nasal exposure to fresh water, the CSF specimen should undergo rapid testing for *N. fowleri/FLA*. Microbiologist should be immediately alerted about the clinical suspicion before sending CSF sample.
- In patients with clinical and CSF pictures suggestive of bacterial meningitis who are not responding to antibiotics or are rapidly deteriorating, consider PAM even in the absence of exposure to fresh water.
- CSF wet mount examination is to be done on all turbid/opalescent CSF samples.
- All cases diagnosed as PAM through CSF microscopy should be immediately initiated on the recommended multi-drug regimen and supportive therapy aimed at lowering intracranial pressure.
- All cases diagnosed by CSF microscopy should be immediately informed to DSO and the CSF sample should be sent to the reference lab for PCR and genomic sequencing [if needed].
- All cases of PAM should be treated by a multi-disciplinary team [Institutional Medical Board] comprising Physicians/ Paediatricians, intensivists, ID specialists, Neurologists and Microbiologists.
- Decisions on the use of intrathecal amphotericin B, immunomodulators, therapeutic hypothermia, pentobarbital protocol etc should be taken by the Institutional Medical Board.

Annexure A

Wet mount of CSF:

A wet-mount of the CSF should be examined immediately after collection under a microscope (preferably equipped with phase-contrast optics) for the presence of motile *Naegleria fowleri* /other *FLA* trophozoites.

1. Store CSF at room temperature (~25°C) until examination. Do not refrigerate or freeze.
2. Gently agitate the CSF container to dislodge amoebae adhered to the container.
3. Apply a drop onto a microscope slide.
4. Observe cells for amoeboid movement(directional movements by means of blunt/bulbous pseudopodia) .

Wright stain - Apply a sample of the centrifuged CSF pellet (cytospin) to a slide and prepare a Wright stain using standard protocols. Look for the *N. fowleri*/FLA trophozoite, which can be differentiated from leukocytes by the nucleus that has a large, centrally-placed nucleolus.

References.

1. Clinical Care of *Naegleria fowleri* Infection, CDC USA.
2. Primary Amoebic Meningoencephalitis (PAM) Clinical Practice Guideline Johns Hopkins All Children's Hospital
3. Cope JR, Ali IK. Primary Amebic Encephalitis: What have we learned in the last 5 years? *Curr Infect Dis Rep* 2016;18:31.
4. Capewell LG, et al. Diagnosis, clinical course, and treatment of primary amoebic encephalitis in the United States, 1937-2013. *J Ped Infec Dis Soc* 2014;1-8.
5. Abdul Mannan Baig and Armaghan-e-Rehman. "Can Clinical Staging of Primary Amoebic Meningoencephalitis be of any Therapeutic Benefit?". *EC Microbiology* 5.3 (2017): 101-108.
6. Epidemiology and Clinical Characteristics of Primary Amebic Meningoencephalitis Caused by *Naegleria fowleri*: A Global Review Radhika Gharpure, John Bliton, Alexandra Goodman, Ibne Karim M. Ali, Jonathan Yoder, and Jennifer R. Cope: *Clinical Infectious Diseases* · May 2020



GOVERNMENT OF KERALA

Abstract

Health & Family Welfare Department - Action Plan to optimize the Prevention, Diagnosis, and Treatment of Amoebic Meningoencephalitis in Kerala - Revised - Orders issued.

HEALTH & FAMILY WELFARE (F) DEPARTMENT

G.O.(Rt)No.2617/2024/H&FWD Dated,Thiruvananthapuram, 02-11-2024

- Read:-
- 1 . Technical Workshop on Amoebic Meningoencephalitis conducted on 27.08.2024.
 2. E- mail message dated 09.09.2024 and 10.09.2024 from Dr. Aravind R, Member, State Medical Board.
 3. E- mail message dated 21.10.24 from the Chairperson, State Medical Board.

ORDER

In the context of reporting an apparent increase in the number of cases of Amoebic Meningoencephalitis in Kerala, in order to ensure effective control and management of disease with focus on technical aspects of diagnosis, prevention and treatment, Government are pleased to issue the revised *"One Health based Multi-Pronged Action Plan to optimize the Prevention, Diagnosis and Treatment of Amoebic Meningoencephalitis in Kerala"*, as annexed to this order.

(By order of the Governor)

Dr. Rajan Namdev Khobragade I A S
ADDITIONAL CHIEF SECRETARY

To:

The State Mission Director - National Health Mission,
Thiruvananthapuram.

The Director of Health Services, Thiruvananthapuram.

The Director of Medical Education, Thiruvananthapuram.

The Chairperson, State Medical Board.

All District Medical Officers (Health .

Principal Accountant General (A&E/Audit) Kerala.

Information & Public Relations (Web & New Media) Department.

Stock File/ Office Copy to file no.F2/270/2024-HEALTH.

Forwarded /By order

Section Officer

ONE HEALTH BASED MULTI-PRONGED ACTION PLAN TO OPTIMIZE THE PREVENTION, DIAGNOSIS AND TREATMENT OF AMOEBIC MENINGOENCEPHALITIS IN KERALA

Background

Amoebic encephalitis is a rare but lethal central nervous system infection caused by free-living amoebae found in freshwater, lakes, and rivers. There are two types of amoebic encephalitis, namely primary amoebic meningoencephalitis (PAM) and granulomatous amoebic encephalitis (GAE). Primary amoebic meningoencephalitis (PAM) is a disease caused usually by infection with *Naegleria fowleri*, a microscopic amoeba commonly called a "brain-eating amoeba." This infection destroys brain tissue, causing severe brain swelling and death in most cases.

Naegleria fowleri is a free-living protozoan that resides in soil and freshwater. Human intranasal amoebae exposure through water or potentially dust particles can culminate in primary amoebic meningoencephalitis, which generally causes death. While many questions remain regarding pathogenesis, the microbial ecology of *N. fowleri* and the environmental abiotic and biotic factors that affect the distribution and abundance of *N. fowleri* is even less understood. Although the impacts of some abiotic factors remain poorly investigated or inconclusive, *N. fowleri* appears to have a wide pH range, low salinity tolerance and thermophilic preference. From what is known about biotic factors, the amoebae preferentially feed upon bacteria and are preyed upon by other free-living amoebae. Additional laboratory and environmental studies are needed to fill in knowledge gaps, which are crucial for surveillance and management of *N. fowleri* in freshwaters. As surface water temperatures increase with climate change, it is likely that this amoeba will pose a greater threat to human health, suggesting that identifying its abiotic and biotic preferences is critical to mitigating this risk. This underlines the importance of having a "One Health" approach to understand the threat potential and mitigation strategies to be adopted to prevent occurrence of PAM in Kerala.

The apparent increase in number of cases of amoebic meningoencephalitis in Kerala needs to be studied in depth and hence a technical workshop was conducted on 27/8/2024 where all the technical aspects with regard to diagnosis, prevention and treatment of amoebic meningoencephalitis were discussed in detail. The biotic and abiotic factors which influence the growth of amoeba were discussed in detail and based on inputs from experts from State pollution control board and Department of Environmental sciences Kerala University, this action plan has been drafted.

The Kerala Scenario

Sporadic cases of PAM have been reported from many parts of Kerala in the last decade. However in 2024, 19 cases of amoebic meningoencephalitis have been reported from Kerala in the last four months.

Year	No of Cases	No of Deaths	District	Diagnosis
2016	1	1	Alappuzha	Naeglaria Fowleri
2019	1	1	Malappuram	Naeglaria Fowleri
2020	2	2	Malapuram	Naeglaria Fowleri
2022	1	1	Thrishur	Naeglaria Fowleri
2023	2	2	Kasaragode	Acanthamoeba
			Alappuzha	Naeglaria Fowleri /? Vermamoeba Vermicularis
2024	19	5	Malappuram - 1 Thrishur - 1 Kannur - 2 Kozhikode - 3 Palakkad - 1 Trivandrum - 11	Naeglaria Fowleri Vermamoeba Acanthamoeba



The graph displays the daily count of COVID-19 cases in the Netherlands from May 2024 to August 2024. The x-axis represents time, with major ticks for 05/2024, 01/06/2024, 01/07/2024, and 01/08/2024. The y-axis represents the number of cases, ranging from 0 to 3. The data shows a period of low activity from May through mid-July, followed by a sharp increase in late July, peaking at 3 cases. This is followed by a decline and then a resurgence in late August, reaching 2 cases.

Date (approx.)	Number of Cases
May 15, 2024	1
May 25, 2024	1
June 5, 2024	1
July 5, 2024	1
July 10, 2024	1
July 15, 2024	1
July 25, 2024	1
July 30, 2024	1
August 1, 2024	1
August 5, 2024	2
August 10, 2024	3
August 15, 2024	1
August 20, 2024	1
August 25, 2024	1
August 30, 2024	2

Impact of Global Warming

The free-living amoeba with the most evidence of the effects of climate change is *N. fowleri*. *N. fowleri* is thermophilic and one of its food sources is cyanobacteria, which flourishes in warmer waters. Climate change raising the water temperature and the heat driving more people to recreational water use are likely to increase encounters with this pathogen. Furthermore, warming temperatures may be expanding the geographical range of *Naegleria* species. Many reported cases of PAM occurred in the weeks after an increase in air temperature, indicating a potential relation to climate change.

Hence every year before the onset of summer [ie by February] public education campaigns must be launched focusing on preventive methods to be adopted to avoid getting infected with *Naegleria*. LSGDs must actively engage in IEC campaigns and through them aim must be to bring in behaviour change among people who routinely use freshwater bodies like ponds.

Components of Multi-pronged Action Plan



1. PUBLIC AWARENESS CAMPAIGNS

- Main stakeholders Department of Health, LSGDs, Education department, department of irrigation, Water authority and Tourism.
- Timing of the campaign—year round campaign which should intensify from just before onset of summer [ie. January].
- Target group-Students, who are likely to come in contact with natural or artificial water sources for bathing, swimming, occupational or recreational activities.
- Materials-For IEC to be adopted and customized from Kerala State Technical guidelines on treatment and prevention of Amoebic meningoencephalitis.
- Each LSGD can identify the high risk groups ie people who regularly come into contact with fresh water bodies like ponds, and conduct focused IEC [Information, education, communication] sessions with them.
- Focussed IEC also should be given to those who work in water theme parks, swimming pools etc
- LSGDs should display billboards with IEC material should be displayed near waterbodies which have been epidemiologically linked to diagnosed cases of Naegleria fowleri infection or from where N. fowleri have been isolated during surveillance.
- All LSG institutions should ensure that the waterbodies in their jurisdiction are not contaminated by solid and liquid wastes.
- Cleaning of waterbodies where people swim, or bath should be a priority in pre-monsoon activities conducted by the local FHC and LSG institution
- The campaign should focus on children and people at occupational risk [like cattle rearers who may contact waterbodies to bath them, those who collect river sands, mussels etc)
- LSG institutions and FHCs should ensure the chlorination of swimming pools in resorts, hotels, schools and other recreational places like water theme parks.

2. ENHANCING DIAGNOSTIC CAPACITY

- IAV, Thonnakkal will be the designated apex centre in the state for molecular and genomic diagnosis of Amoebic meningoencephalitis. For this purpose IAV will get equipped to perform real-time PCR to diagnose free living amoeba infections of consequence to humans ie Naegleria, acanthamoeba, balamuthia, sappinia and vermamoeba vermiformis. Genomic sequencing of the diagnosed isolates also will be carried out at IAV.
- A division of Medical Parasitology will be established in the Departments of Microbiology at GMC Thiruvananthapuram and GMC Kozhikode, Microbiology departments at these two institutes will be equipped with state of art equipments needed for the microscopic and molecular diagnosis of amoebic meningoencephalitis.
- Molecular diagnostic facility to diagnose free living amoeba infections will be established at State public health laboratory also.
- A short primer video on the morphological and molecular diagnosis of amoebic meningoencephalitis will be made and through the State training site, it will be disseminated to all Microbiologists in Kerala.

3. ACTIVE CASE SURVEILLANCE

The key to optimizing the treatment outcomes in PAM and GAE is in making an early diagnosis and initiating the treatment protocol at the earliest. For this the following points have to be meticulously followed

- A history of nasal exposure to fresh water in the 14 days before symptom onset should be asked of any patient who presents with symptoms of acute meningitis.
- For patients with meningitis who have a history of recent nasal exposure to fresh water, the CSF specimen should undergo rapid testing for *N. fowleri*/FLA. Microbiologist should be immediately alerted about the clinical suspicion prior to sending CSF sample.
- In patients with clinical and CSF picture suggestive of bacterial meningitis who are not responding to antibiotics or are rapidly deteriorating consider PAM even in the absence of exposure to fresh water.
- CSF wet mount examination to be done on all turbid/opalescent CSF samples.
- All cases diagnosed as PAM through CSF microscopy should be immediately initiated on the recommended multi-drug regimen and supportive therapy aimed at lowering intracranial pressure.
- All cases diagnosed by CSF microscopy should be immediately informed to DSO and the CSF sample should be sent for PCR and genomic sequencing [if needed].
- A history of a definite exposure to fresh water could not be ascertained in certain cases of PAM/GAE and hence it will be better to request for a CSF wet mount examination for all cases of suspected meningitis/meningoencephalitis especially if an alternate diagnosis could not be made. And hence in all suspected cases of meningitis/meningoencephalitis, CSF Wet mount should be sought and performed.

4. ENVIRONMENTAL SURVEILLANCE AND HOT SPOT MAPPING

Action Plan on Environmental factors affecting distribution and abundance of free-living amoebas (FLAs) has been prepared by Kerala State Pollution Control Board and Department of Environmental Sciences, University of Kerala

Objectives are to

- Regularly monitor water quality (pH, temperature, TDS, turbidity, DO, BOD, salinity, ammoniacal nitrogen, nitrate, phosphate, iron, total coliform, faecal coliform, faecal streptococci and abundance of free-living amoeba (FLAs) in stagnant water bodies of affected zones in Kerala.
- Establish the relation between land use/ temperature/ eutrophication/organic matter/coliform/ nutrient contamination with abundance of FLAs.

- Assess the concentration of iron and correlate with the presence of FLAs in polluted surface water
- Examine the presence of *Naegleria fowleri* and *Acanthamoeba* sp. in the surface waterbodies and ground water of affected areas by culture dependent methods and molecular tools.
- Develop standards for FLAs in surface water
- Land use of the affected areas
- Identification of source of pollution in the affected areas by conducting sanitation survey using mobile application namely Envisan and development of action plan for abatement of pollution
- Suggestion on the mechanism to be adopted for cleaning of different type of waterbodies

Work plan

Surveillance of surface water bodies of affected area and sanitation survey of affected areas using mobile app for arriving at action plan for abatement of pollution

5. OPTIMIZING TREATMENT AND ENSURING DRUG AVAILABILITY

- Cornerstone of combination treatment of PAM and GAE is Miltefosine. Steps have been made to ensure continuous availability of Miltefosine--KMSCL.
- An online training module on treatment of Amoebic meningoencephalitis will be made available on State Training site.

6. RESEARCH AND COLLABORATIONS

- Collaborations will be established with Division of Medical Parasitology, PGIMER Chandigarh and AVM Institute Pondicherry.
- Abiotic and biotic factors influencing growth of free living amoeba will be studied in collaboration with State pollution control board and department of environmental engineering, Kerala University.
- Possibilities for Collaboration with Indian Institute of science/other agencies will be explored for Genomic sequencing of amoeba isolates.
- A case control study will be undertaken with help of NIE-ICMR to identify the risk factors responsible for acquisition of amoebic meningoencephalitis.

- Epidemiologic profile and Natural history of all the reported cases of Amoebic meningoencephalitis in Kerala in 2024 should be published as a research article.

Annexure I

PREVENTION

Measures to prevent amebic meningoencephalitis include the following:

- Avoidance of diving and jumping into stagnant freshwater.
- Consider using nose plugs for unavoidable exposures or pinching your nose shut when diving or swimming in freshwater.
- Keep your head above water when swimming in freshwater, hot springs, and other untreated thermal bodies of water.
- When participating in water-related activities, avoid digging, or stirring up, the sediment.
- Use boiled, filtered, or sterile water for nasal or sinus irrigation, not tap water.
- Wading pools should be emptied each day
- Swimming pools/water theme parks and spas should be kept clean, chlorinated and maintained correctly
- Keep sprinklers and hoses away from noses.
- Flush still water from hoses before letting children play with them
- Nasal irrigation should only be carried out with water that is sterile, distilled, filtered (using a filter with an absolute pore size of $\leq 1 \mu\text{m}$) or previously boiled and left to cool. Neti pots or other devices that are used in the practice of nasal irrigation should be rinsed after each use using sterile, distilled, filtered, or boiled water or put in the dishwasher if dishwasher safe.
- Ensure that natural waterbodies are free of organic pollutants like sewage [coliform count may be used as a surrogate marker]

If you are using unchlorinated water:

- Don't let water go up your nose when showering or washing your face
- Watch children playing with hoses or sprinklers
- Teach children not to squirt water up their nos

Public water supplies are chlorinated with levels high enough to protect against *N. fowleri*. Nevertheless, *N. fowleri* has been periodically identified in some water supply systems where chlorine levels have fallen below the required level. Therefore, there is a very small risk that if domestic water is allowed to warm or stagnate and chlorine levels fall (ie. a hose left in the sun or overland pipes) it can become a breeding ground for *N. fowleri*. If this water is then used in swimming pools or for washing out the nose, it carries with it the potential for infection.

Annexure 2

Protocol for drinking water supply systems.

The Australian Drinking Water Guidelines, published by the National Health and Medical Research Council as “Australian Drinking Water Guidelines 2011 - Version 3.5 Updated August 2018”, provides an authoritative reference on what defines safe, good quality water, how it can be achieved and how it can be assured.

The Guidelines state: “Two groups of free-living amoebae, *Naegleria* and *Acanthamoeba*, have been responsible for human infections in Australia. Infection is opportunistic and generally results from contact during recreational bathing, or domestic uses of water other than drinking. Public water supplies can contaminate swimming pools. The occurrence of these organisms is unrelated to faecal contamination and their ecology in aquatic environments is more complex than that of enteric protozoa.”

“Cerebral infection by *Naegleria fowleri* is strictly waterborne and although rare is usually fatal. Since these amoebae are able to colonise piped water supplies, disinfection at the water source may not adequately control them unless the disinfectant pervades the whole distribution system.”

“*Acanthamoeba* species cause both cerebral and corneal disease. An environmental source of infection has rarely been identified with certainty.”

As free-living environmental organisms, *Naegleria* are not associated with faecal contamination of water and can be detected in the absence of *Escherichia coli*. Whilst only *Naegleria fowleri* has caused amoebic meningitis, other species of thermophilic *Naegleria* may indicate the potential presence of *Naegleria fowleri*. Detection of any thermophilic *Naegleria* (also known as *Naegleria* tolerant to 42° C) in drinking water should therefore initiate corrective actions while speciation is undertaken to determine if *Naegleria fowleri* is present. A detection of thermophilic *Naegleria* in treated water may indicate that preventive measures and barriers have failed. *Naegleria* are most likely to enter a water supply system at the source or at breaks in the

distribution system, such as open reservoirs and tanks. Under favourable conditions, such as warm air and water temperatures, low water usage, stagnant water in pipes, inadequate chlorination and ample food source, they can proliferate in pipework and tanks. Under unfavourable conditions, *Naegleria* can encyst and when in this state are more resistant to disinfection, readily surviving in tank sediments and pipe biofilm. Unless chlorine residual is continuous and adequate, decystation to the active trophozoite form will remain a threat.

Protocol for drinking water providers

Naegleria entering a distribution system during a barrier breach colonise the distribution system and may re-appear in the system when adequate residual is not maintained. Biofilms that form on the internal surfaces of water supply distribution system provides a bacterial food source and protection from environmental stresses, including chlorination. Biofilms can slough off or migrate into the drinking water from these biofilms reservoirs and make their way into the reticulation system. Managing and monitoring bores and other raw water sources and maintaining adequate, permanent disinfection throughout the treatment, storage and reticulation system are thus critical to managing thermophilic *Naegleria* risk in drinking water supply systems. **Maintaining a free chlorine or chloramine residual at 0.5 milligrams per litre or higher will usually control *Naegleria fowleri*, provided the disinfectant residual persists throughout the water supply system at all times, the turbidity is low and biofilms are well managed.** In some circumstances 0.4 milligrams per litre of free chlorine residual is acceptable in the distribution system without being in breach of requirements, provided control of thermophilic *Naegleria* is maintained at all times. **Investigations carried out in Western Australia have shown that while 0.4 to 0.5 milligrams per litre of free chlorine was able to control the occurrence of *Naegleria fowleri* in the water stream in most circumstances, it was insufficient to eradicate the protozoan from biofilms coating the interior surface of some drinking water pipes. The research established that, for these circumstances, a constant free chlorine concentration greater than 1.0 milligram per litre is able to deactivate *Naegleria fowleri* from the bulk water and biofilm. Following a thermophilic *Naegleria* detection, drinking water providers must aim for a free chlorine residual of at least 1 milligram per litre to re-establish control throughout the distribution system.** Drinking water providers are reminded that in most circumstances and water temperatures, disinfection of drinking water supplies by ozonation or ultra violet irradiation only (that is, without a later step involving chlorination or chloramination) is unable to reliably control amoeba or biofilms throughout larger distribution systems, but may be effective in well-designed small distribution systems with cooler water.

Monitoring requirements

Routine monitoring of drinking water supplies for thermophilic amoebae (the most significant of which is *Naegleria fowleri*) is required during the months of the year when water temperatures within the distribution system are likely to exceed 20° Celsius.

Drinking water providers must establish and monitor temperature profiles of water within the distribution system to determine the months of the year when the water temperature is likely to exceed 20° Celsius. While amoebae may be detected below 20° Celsius, they are expected to

encyst and to reduce to low numbers. Cysts are not believed to be infective, as they have not been recovered from brain tissue or cerebrospinal fluid. Sampling of water below 20° Celsius is optional. Samples should be collected from the distribution system for thermophilic amoeba analysis at the same frequency and place as bacteriological samples, upstream of any end-of-line fitting in place that either filters or chills the water, or makes ice. This is because samples obtained from point-of-use filtered or chilled locations may underestimate the true risk, as they are not representative of the bulk distributed water received at fixtures such as shower heads or garden hoses where water may enter the nasal passage. Drinking water providers who manage significant building plumbing or circulation systems that involve chilling water should ensure that their water chiller management protocols are compatible with the amoeba monitoring requirements. **Unlike samples for bacteriological analysis, samples for amoeba analysis should not be chilled when sent to the laboratory.**

A water sample of 250 millilitre volume is considered acceptable, although some techniques utilise a 500millilitre sample volume. Samples must be transported at ambient temperature (do not include ice blocks) to the analysing laboratory within 24 hours (recommended) or within 96 hours (acceptable). Samplers are reminded to ensure that water temperature and chlorine residual are also recorded with each sample, as well as clear labelling of site codes and text descriptors of the location being sampled, as well as any other relevant Chain of Custody requirements.

Testing of freeliving amoeba in water samples must be performed by an accredited laboratory. It is only necessary to confirm the species as either *N. fowleri* or not *fowleri*, as per the Polymerase Chain Reaction (PCR) method, which gives the quickest result. Other methods that involve speciation are acceptable, but are disadvantaged by being slower. The PCR method examines water for free-living thermophilic amoebae by culturing on a seeded non-nutrient agar plate, followed by microscopic identification.

Amoebae are identified by the presence of cysts and sometimes trophozoites. Genus identification is possible at the cyst stage by their characteristic size and shape. The result will be reported as:

Thermophilic amoebae	Not Detected or Detected / 250 mL
Thermophilic <i>Naegleria</i>	Not Detected or Detected / 250 mL

If thermophilic *Naegleria* has been detected, then the report will state:

<i>Naegleria fowleri</i>	Pending

Identification of *Naegleria fowleri* is performed by the Molecular Diagnostics laboratory using Real-time PCR. This result will be available 1-3 days after thermophilic *Naegleria* has been identified by microscopy. The result will be reported as:

<i>Naegleria fowleri</i>	Not Detected or Detected

Please note that remediation is required upon detection of thermophilic *Naegleria*. Hence, the drinking water supplier (or client requesting the analysis) should ensure that arrangements have been made for the analysing laboratory to advise the drinking water supplier of this result as soon as possible, both by email and telephone communication.

Action by the drinking water supplier should be initiated upon confirmation of thermophilic <i>Naegleria</i> , not be delayed until the presence of <i>N. fowleri</i> is established.

ADVICE FOR RECURRENT DETECTIONS

With respect to *Naegleria* species, the requirement for drinking water supplies is that:

- ☐ No sample of drinking water should contain *Naegleria fowleri*;
- ☐ No more than one water sample collected in any 12 month period in each locality supplied by the water supplier shall contain *Naegleria* species tolerant to 42° Celsius or above; and
- ☐ If *Naegleria* species tolerant to 42° Celsius or above (i.e. thermophilic *Naegleria*) are detected, immediate corrective action must be taken.

More than one thermophilic *Naegleria* event in a drinking water supply in a 12 month period per locality is thus considered to be a recurrent problem.

Drinking water providers must follow a risk management protocol which, depending on the characteristics of the system, should include the following actions to prevent further detections or continue the response to an ongoing problem:

- ☐ Review operational limits to ensure a chlorine residual of at least 0.5 milligrams per litre persists in all parts of the reticulation at all times;
- ☐ Install chlorine boosters to ensure continuous residual above 0.5 milligrams per litre (where drinking water is piped over long distances);

- ☐ Increase cleaning frequency to minimise sediment build-up in storage tanks or reservoirs;
- ☐ Introduce flushing and scouring programs to control biofilm and sediment build-up in reticulation;
- ☐ Increase tank turnover rates and investigate potential for dead legs or stagnant areas, to reduce water age in the system.
- ☐ Maintain complete records of any incident or detection, including any short term and long term responses, and ensure that system operational plans remain up-to-date.
- ☐ Keep the public informed of any relevant update in circumstances, especially if the circumstances necessitate a change in consumer behaviour from the status quo.
- ☐ Assess raw water sources and other drinking water supplies systems managed by that drinking water provider to determine if they are similarly susceptible to contamination.

Drinking water providers are also reminded that it is possible that a thermophilic *Naegleria* detection may coincide with an *E. coli* detection or some other adverse event in the same supply system. The responses to these detections need to run simultaneously.

Drinking water providers must also ensure that all *Naegleria* related incidents in a drinking water supply are included in the quarterly drinking water quality reports reported to the Department of Health, as well as any published annual water quality report.

Annexure-3

Public Health Messaging Examples

Water quality alert: **BOIL ALL WATER**



Boil the water for
at least 1 minute



After boiling the water allow it to cool

Then the boiled water can be used for drinking, bathing, washing dishes, brushing teeth and food preparation.



CAUTION: Cool boiled water before use and keep children away from boiling water.

Water quality alert: **playing with water**

Also, be careful when playing with water or in the bath.
Anyone playing in or with water needs to avoid getting
water up their nose.



Water quality alert: NO PLAY



Water quality alert: playing with water

Be careful when playing with water, showering or in the bath. Anyone playing in or with water needs to avoid getting water up their nose.





References

1. Naegleria Response protocol for drinking water: Government of Western Australia, Department of Health.
2. Technical guidelines on prevention, diagnosis and treatment of amoebic meningoencephalitis in Kerala .
3. Stahl LM, Olson JB. Environmental abiotic and biotic factors affecting the distribution and abundance of *Naegleria fowleri*. FEMS Microbiol Ecol. 2020 Dec 30;97(1):fiae238. doi: 10.1093/femsec/fiae238. PMID: 33242082; PMCID: PMC8068756.

KERALA.HEALTH