



**GOVERNMENT OF KERALA  
KERALA STATE PLANNING BOARD**

**FOURTEENTH FIVE-YEAR PLAN  
(2022-2027)**

**WORKING GROUP REPORT ON  
MEDICAL AND PUBLIC HEALTH**

**SOCIAL SERVICES DIVISION  
NOVEMBER 2021**



## **PREFACE**

In Kerala, the process of a Five-Year Plan is an exercise in people's participation. At the end of September 2021, the Kerala State Planning Board began an effort to conduct consultations before formulating the Plan. The Planning Board formed 44 working groups, with a total of more than 1200 members – scholars, administrators, social and political activists and other experts. Although the reports do not represent the official position of the Government of Kerala, their content will help in the formulation of the Fourteenth Five-Year Plan document.

This document is the report of the Working Group on Medical and Public Health. The Co-Chairpersons of the Working Group were Dr. Asha Thomas IAS and Dr. K. Srinath Reddy. The Member of the Planning Board who coordinated the activities of the working group was Dr. Jameela P.K. The concerned chief of division was Dr. Bindu P. Varghese and the sector in charge was Shri. Saji V, Assistant Director.

Sd/-

Member Secretary



## CONTENTS

Chapter 1	Background	03
Chapter 2	Cross Cutting Themes	09
Chapter 3	Health Services in 14th Five Year Plan	17
Chapter 4	Medical Education	27
Chapter 5	Health of Special Groups	39
Chapter 6	FacilitatoryStructure	51
	Annexure	73



## CHAPTER 1 BACKGROUND

The achievement of many of the SDG targets and achievement of very impressive indicators especially in maternal and child health indicate success in tackling traditionally prioritized and epidemiologically important conditions. However, Kerala is now facing an epidemiological transition compounded with an ongoing demographic transition. The major burden is thus from Non-communicable diseases while the Communicable diseases continue to pose threats, and consequently require systemic attention. Even as we achieve traditional public health indicators there is a need to shift our focus beyond mortality towards morbidity and quality indicators. Similarly, the changing epidemiological pattern has important implications for health system design.

Kerala is facing outbreaks of several new infectious diseases. While the most prominent among them are vector borne diseases like Dengue and Chikungunya, Kerala has also seen outbreak of food borne diseases like Hepatitis and more recently (and of more concern) air borne outbreaks of diseases like H1N1, Nipah and now COVID. This changing pattern of diseases poses a challenge to redesign the health system that was traditionally geared to tackle diseases that were not very infectious from person to person – to highly infectious airborne diseases. This highlights the need for strengthening the Infection Control mechanisms in the health system, as well as at the community level spearheaded by LSG and other community-based groups.

Climate change is wreaking havoc at multiple levels in health and development. These planetary changes are happening the background of historical pressures on ecosystems especially in the highly sensitive Western Ghat eco-sphere. This has led to vulnerability of communities living in the vicinity of these areas, as well as pressure on land in the narrow strip between the Ghats and the coast. Massive development activity many of which were unplanned leads to susceptibility to flooding as witnessed in the last three years and landslides. These pose a particular set of risk factors to the health system which include the disruption of supply and service chains, and importantly physical damage to infrastructure and the disruption of power etc., making the infrastructure itself vulnerable to disasters. Linked to this real threat of climate change and disasters is the reality of the inequity in the distribution of these risks, and even in the cost of mitigation strategies to different communities as well as groups within communities.

The developmental model of Kerala has been recognized worldwide. The thrust on decentralization has resulted in remarkable social dividends. However, it is true now as in 1995 when first described, that there are groups termed as “outliers” who have not benefitted from this development (ref). These groups include Scheduled Tribes, Scheduled Castes and coastal communities, transgender communities, and persons with disability among others. They continue to have poorer outcomes, access to relatively poorer infrastructure and human resource serving them, feel alienated and have a trust deficit that leads to poorer uptake of services. This combined with the larger structural determinants which lead to

their precarious existence causes ill health and poor health to be concentrated among these marginalized communities. Apart from this there continues to be a gender disadvantage as recognized by the health policy document. After decades of attempts at tackling these inequities, it is time to reflect not only on ways to tackle these inequities but on the reasons for their persistence and endurance. This will probably require a different lens than traditionally used, with a focus on ‘drivers’ and ‘sustainers’ – of these inequities.

Within the health system itself the out-of-pocket expenditure continues to be a major problem faced by the people of Kerala, with the Health Policy of 2019 characterising it as a public health crisis. While the consistent investments in strengthening of the public health system through the Aardram Mission seem to be translating into better protection and this trend needs to be watched carefully and effective action needs to be taken.

The unique nature of issues faced by governments in Kerala is the need to engage with these challenges in a development context which nationally and internationally favours market-based solutions and development paradigms that generate inequity. This larger paradigm of development includes a commodification of health services and a consumption-based paradigm of health care, rather than a health promoting paradigm based on planetary health. The general direction is of privatization. In contrast, Kerala is committed to public system strengthening, especially the public health sector and is unique among Indian states with the continued commitment of the state to the welfare of its citizens through public sector lead action. In the next five years we need to move in the direction of universal health coverage through mechanisms of public sector strengthening with a focus to reach the groups unreached so far as a key thrust of the 14th Five Year Plan.

It is well recognized that while the traditional diseases and conditions that faced us in the earlier epidemiological pattern were largely (not fully) amenable to health sector intervention using an “episodic illness” framing and design, the illnesses that now affect the community are life long and thus require a shift in system design as well. Further, increasing recognition of the social determinants of health and the intersectional axes of disadvantage, climate change and continued socio-economic pressures imply that any further improvement in health must be accompanied by re-designing various aspects of the health system and cannot come from simply doing more of the same. The delineation of the components of this paradigm shift should be a key part of the thrust of the 14th FYP.

### **1.1 What has COVID taught us? Towards a post-COVID world....**

Despite having a range of factors that would potentially increase the state’s vulnerability to the COVID pandemic which include - the highest proportion of elderly in the country, the highest rates of co-morbidities and multiple-morbidities, one of the highest density of populations in the country, the state demonstrated how strong public sector led action could build on historical political action and decentralized capacity to effectively flatten the curve, and maintain one of the lowest mortality rates, remain as the lowest seroprevalence rates relative to other states in the country, have one of the highest vaccine coverages and have one of the lowest rates of under-reporting and ratio of undetected to detected cases.

These achievements clearly underline

- The tremendous advantage of historical investment in education and a strong public sector and the robust citizenship that has been developed over decades of political action.
- The huge advantage of strong LSG - the fact that they were able to take up so much field level responsibility including the setting up of CFLTCs etc., and the efficient action of RRTs (especially in the first wave) all point to the major contribution of LSGs and is a significant advantage that we need to build on.
- The ability and importance of multi-sectoral approaches to implementation - the involvement of the police, revenue, social security mission etc., in managing the pandemic.
- And the proactive and transparent communication established by the Chief Minister during his daily press conferences (among other proactive modes of communication).

While many of these issues have already been highlighted in the media and in the evolving literature around responses to COVID, other little highlighted aspects of the Kerala story were that

- Kerala was probably one of the few states (only?) that was able to provide greater than 70% of all care - free of charge in the public sector. This probably led to significant reduction in out-of-pocket expenditure and impoverishment and private sector exploitation witnessed in almost all other major states.
- Similarly, Kerala never saw a shortage of beds, oxygen shortage or panic buying of Remdesivir, witnessed in other large states with efficient health systems – again reflecting superior governance and leadership shown by the public health system.
- There was minimal disruption of supply chains - especially of chronic disease – thanks to the robust information available through various programs at the community level and coordinated through the PHC system.
- Similarly, the ability to quickly raise volunteers and organize them into efficient support and complementary resource to the pandemic control activity.
- The ability to tackle floods and another outbreak of Nipah simultaneously and effectively while continuing with control of COVID – showed the depth of capacity of Kerala's public health system and the coordination of other departments it was able to draw upon.

While the above factors are things Kerala can be proud of, there are a number of instances that need reflection as we move forward in the 14th FYP and attempt to rebuild and revitalize public systems as a whole and the health system in particular.

- Despite having several research institutions, the state has a relatively poor output of research that directly contributed to the development and support of policy, thus the inability of the research infrastructure to deliver when it was acutely needed in light of significant administrative hurdles including permissions and disruption of IEC functioning etc., need to be taken into account.

- Bottle necks and shortages of key support staff like respiratory technicians and ICU trained nurses to support the massive expansion of critical care and laboratory facilities in the state. This points to the importance of allied health care staff and the need to have a balanced and long-term policy for the creation of appropriate cadre of all staff and not only doctors and nurses.
- Concern about militarisation - of the control effort - using commandos in Coastal communities and Scheduled Tribes areas for control activities even if seemingly outlying events is cause for reflection, especially when the communities involved are marginalized and identified as being outliers in the overall developmental model.
- There is a need for a policy for action during pandemics. This policy should be able to pool resources from private sector also for managing the pandemic situation more efficiently. The involvement of the private sector in the COVID pandemic especially their role in the vaccination drive could have been better.
- One of the key challenges facing the health system is the challenge of going back to pre-covid functioning and coverage, catching up on interrupted services and revitalization of all the functional components of the health system. The 14th Five Year Plan should envisage a new normal that not only builds on the successes of the Kerala health system but learn from the challenges faced during the COVID outbreak and move towards a more inclusive and equitable new normal. This would include:

**Specifically:**

- Developing systems for addressing immediate, medium term and long-term post covid health problems.
- Developing a system for early identification and management of different dimensions of pandemics like COVID that may emerge in the future.
- The need to develop decentralised systems for service delivery- community based, Sub Centre based systems and the need for expansion for telemedicine and mobile technology as a system in primary care secondary and tertiary care including the follow ups and the need for establishing systems for online trainings and LMS (learning management system).
- An active exploration and assessment of the role and scope of artificial Intelligence (AI) and other cutting-edge technology in Health Sector

**And in more general terms:**

- Focusing on inequity and its drivers and sustainers – highlighted by the unequal experience of and consequences of the pandemic by different groups within Kerala.
- Developing systems of generating knowledge about these inequities, drivers, and sustainers, and incorporating these into policy making.
- Developing robust systems of evaluation both concurrent and end-line that enable the Kerala Health System to evolve as a Learning-health system.
- Enhancing the quality of community participation and consequent empowerment to include those socially and institutionally excluded to be involved in a meaningful and respectful way.

## 1.2 Vision / Mission

The Health Policy document of 2019 states “To overcome the challenges the health system in Kerala has to focus on equity, social and gender justice, quality improvement in all areas, cost-effective solutions, appropriate human resource development, bringing about desired life-style changes...raising adequate resources”. Further, there is a need to reduce morbidity and mortality as well as increase public expenditure.

Guided by the articulation by the Government in the Health Policy document we propose the following Vision:

*“Towards Planetary Health – Moving with Equity, Efficiency, Quality and Cultural Competency through Partnerships and Learning”*

This envisages the following paradigm shifts which will guide the 14th Five Year Plan.

- Human health → Planetary health
- Reduction in Mortality → Overall Well Being
- Focus on improving average → Focus on distributional outcomes
- Strengthening individual institutions → Networks of excellence
- Health quality health care services → Co-production of Health and Well being
- Technical Capacity building → Cultural and Structural Competency
- Policies and Programs for Health problems → Health in ALL Policies
- Health System strengthening → Learning Health Systems
- Metric based decision making → Rights based approaches

To achieve this paradigm shift, we need to develop knowledge that will inform the required system level changes that will be the bedrock on which this shift takes place. This also requires a whole range of reflective and consultative processes that is based on high quality and relevant data etc.,

Broadly these would include:

- Evidence driven / evidence informed policy making. Facilitating high quality research through collaboration, open data sharing, funding, streamlining regulatory processes and creating Platforms for integration and knowledge creation and sharing.
- Expand programs to include neglected areas of morbidity and mortality, at the same time widening the scope of current programs and deepening the reach and benefit equitably.
- Focus on the social determinants of health, the structural drivers and sustainers of inequity that lead to differential risk profiles, vulnerability and consequences of ill-health, with the Health System emerging as a leader as we move towards Health in ALL policies.
- Prioritise action on health inequity – which includes infrastructural, human resource and social connectedness / cultural safety.
- Enhance the participation of the most marginalized groups in a meaningful and dig-

nified way. Leading to empowering engagements that lead to sustained community driven actions of the health system

- Enhance the evolution of networks of institutions both across levels, within the health department and across departmental boundaries. Evolve mechanisms and frameworks to involve the private sector with enhanced Public Sector Leadership.
- Ensure autonomy to different institutions in the true spirit of subsidiarity to facilitate the evolution of excellence at all levels of the health system.
- Ensure the seamless functioning of governance systems – such that they facilitate innovation and creativity rather than act as bottlenecks to health system excellence.

## CHAPTER 2 CROSS CUTTING THEMES

### 2.1 A comprehensive approach to health Inequity

Inequity along several axes is an enduring feature of the health outcomes in Kerala. These axes are diverse and are emergent based on historical, social, and other complex demographic trends. These axes in addition intersect, creating complex tapestries of inequity. This means that simplistic uni-dimensional approaches are unlikely to bear fruit in sustainable and comprehensive ways. The latest NFHS-5 which collected data during the period 2019-20 continues to show poor health outcomes among Scheduled Tribes and Scheduled Castes on most coverage, input and outcome indicators.

While the dominant socio-economic developmental paradigm itself leads to the creation of socio-economic inequity as demonstrated by the rising GINI coefficient for example, Kerala state has been at the forefront of political commitment and concomitant efforts to redistribute the benefits of development, or at least protect the most vulnerable. Towards this the decentralization program with the consequent strengthening of LSGs and their empowerment and a sustained investment in public programs and social protection have paid rich dividends as reflected in the fact that Kerala has already achieved many of the health-related SDGs, especially those related to Mortality.

Despite these efforts however throughout the decades since the 70s the gaps between these communities and the dominant groups have continued or worsened. Socio-economic data like livelihood in different sectors of economy and land ownership showed stagnation or worsening in many of these communities and mainstream developmental activities like conversion of land for agriculture and the introduction of mechanized trawling for increasing productivity have seen mainstream communities' benefit at the cost of many of the marginalized groups. There is no wonder then that this "outlier" status is reflected in the field of health too. In other words, large contributors to the poor health parameters of these groups are the social and structural determinants of health. One may say that this is merely a reflection of their exclusion for the benefits of mainstream developmental model. Thus, not only does the health system respond to those excluded by the socio-economic development process, but also bears the consequences of decisions made in other sectors, that adversely affect health - like forest clearance, or the lack of piped water (leading to the connection between water-storage and vector breeding), or the introduction of mechanical trawling in terms of changing productivity of those without access to these types of boats and the consequent poverty and increased vulnerability to disease. The health system thus works as a shock absorber / gap filler by catering to crises created by this mainstream developmental model.

In addition to health outcomes, health system infrastructure and human resources are also adversely distributed in regions / jurisdictions where members of these groups reside, similarly the areas in which these groups are concentrated are particularly vulnerable to climate related and other natural disasters and nature - human conflict including animal

- human conflict. Even in health care institutions members of these communities face stigmatization and stereotyping and conflict with their overall culture and belief structures which have led in instance to coercive action by the health department. All these have led to a sense of alienation of many in these communities from the health system. Thus, the determinants of their poor health outcomes are a complex set of structural, health system related and environmental in nature. Obviously, solutions to these “wicked problems” must take this complexity into account. Further, marginalized communities usually live in areas rich in natural resources (and are thus in the thick of human-nature conflict) or in ecologically vulnerable zones – like coastal and low-lying areas where health infrastructure is also relatively sparse compounding both vulnerability and disadvantage.

Following are from the literature on action on the social determinants of health emerging out of attempts at application of the influential Commission on Social Determinants of Health. The health system needs to go beyond policies and interventions that merely reduce the severity of illness to actually work towards programs that reduce the health inequity gradient at a societal level (ref). This requires action by multiple departments and cannot be achieved by interventions in the health department alone. In this situation, the public health sector is in a unique position to provide knowledge about the impact of inequity and disease generating developmental policy as well as provide leadership in developing inter-sectoral action on social determinants of health. We envisage that this will be a critical area for the Health Department to reflect on and evolve mechanisms for, during the 14th Five-year plan period.

A comprehensive approach would minimally include the following (many actions suggested are elaborated in subsequent section):

### **2.1.1 Within the Health Department**

- Disaggregated data of distributional outcomes: one of the first steps for any action on health inequity is the generation of (or integration from other sources) comprehensive data that describes and can track health inequity and its intersectional nature in specific groups over time. In the absence of such disaggregated data very little data driven action can be planned, and evaluations will not be routinely possible. The health department should take steps during the 14th Five-year plan period to evolve a comprehensive data architecture to measure not only coverage and outputs, but outcomes, distributional coverage and outcomes and the social determinants of health that enables planners to make sense of a disaggregated reality.
- Mechanisms for tracking health outcomes - Registries. Multiple registries or cohorts maybe established among these marginalized groups to track their health. While Kerala has some experience in establishing registries of disease such as Cancer and Heart Failure, these learning can inform the setting up of similar mechanisms among marginalized groups.
- Cultural safety - a concerted effort to overcome the alienation that many from among the vulnerable groups face in health system institutions needs to be made. The concept

of cultural safety is introduced for discussion and debate by this working group - with the core focus being on the need for the health system to respect different cultures and to realise that behavioural choices that such communities make are driven by adverse socio-economic conditions and alienation. In addition, the engagement with diverse cosmologies and the impact of this on health system action needs to be discussed and debated by society at large. This, cultural and structural sensitivity needs to be a cross-cutting feature and core feature of the health system and systematic efforts need to be made in this direction.

- Participatory Governance - while forums for and mechanisms for participatory governance have been established in Kerala through the focus on decentralization - the extent to which marginalized groups are benefitting or being excluded needs separate study and action based on this.

### **2.1.2 Health Department Leadership in initiating comprehensive intersectoral action**

- Health Impact Assessment of intersectoral issues – Ombudsperson on SDH: Given the novelty of conceptualization of intersectoral action beyond implementation cooperation, innovative mechanisms like appointment of an Ombudsperson to look into health impacts of various policies of different sectors on the health of marginalized groups is suggested.
- Health In ALL Policies - similarly mechanisms to initiate mechanisms for ensuring Health In ALL policies may be a key initiative taken during this plan period. This can lead to piloting All of Government approaches in a few key areas for the government to learn from this experience.

## **2.2 Reduction of Out-Of-Pocket Expenditure**

Even though dated, the SHA exercise reveals key aspects of the issue of extremely high out-of-pocket expenditure, that has been defined by the Health Policy of 2019 as a critical public health problem. The key points that emerged from the State Health Accounts exercise – 2013-14 were that - 76% of payment of health care expenses by the households. 36.7% of OOPE was on drugs and pharmaceuticals – and of this 76% is outpatient drugs, and that, Government spending included about – 61% on curative care; 5% on disease control; and 3% on IEC activities. Subsequently, during the period 2017 the 75th round of NSSO gave some indication of the direction of utilization and expenditure – following the initiation of the Aardram Mission during the 13th 5-year plan period. The NSSO 75th round revealed an increase in the utilization of public health facilities for Outpatient care with the shift seeming to be from private clinics and GPs. Utilization in Private hospitals has remained stable during the period. It further indicates that there is a shift of poor/marginalized groups to Public Sector for Outpatient care. That the shift is in the opposite directions in Inpatient care – with a shift to the private sector possibly due to availability of insurance. Actual OOPE with or without insurance has increased. Catastrophic health expenditure (CHE) with insurance has marginally decreased – but continues to be high – 47.6 in private sector and 14% in public sector. Further, there seems to be a stagnation in CHE – at around

30% since 2004-5. These statistics indicate a broad trend that could be helpfully studied using the detailed state sample data.

More recent challenges that are faced by Kerala include the changes brought about due to the COVID pandemic and include - Health system changes due to COVID – shift of care out of public sector due to conversion of public hospitals to COVID care centres. This trend needs to be monitored to see to what extent patients move back to the public sector once the pandemic recedes. This also has implications of future planning for subsequent pandemics in terms of planning for infrastructure development etc., need to be taken into account given that most expenditure is from household finances.

Studies post 2015 – upto COVID period show a broad continuation of the pattern of spending revealed by the SHA. This includes significant out-of-pocket expenditure on chronic diseases / outpatient care / follow up care. More concerning was that, even among those getting various forms of available subsidies from Government OOPE is very high:

1. In one study on Dialysis – 91% families faced CHE (40% of non-subsistence expenditure).
2. 77% used distress financing
3. 29% has government subsidies
4. Of those with government subsidies – 90% had CHE of those without government subsidy 93% had CHE.
5. 2019 study from Palakkad – showed that while insurance protected against borrowing – it did not protect against selling of assets – however the overall amounts were not very significant.

In summary the scoping review of the literature on out-of-pocket expenditure that focused on the literature published after 2015 showed that: there was significant out-of-pocket expenditure due to severe illnesses like myocardial infarction and renal failure (with dialysis), there were significant episodes of expenditure for acute infectious disease like Hepatitis and Dengue – in which a significant chunk of expenditure comes from diagnostics and in-patient expenses, and finally many studies highlighted the high routine outpatient costs for the treatment of chronic conditions. All the studies pointed to the significantly higher expenditure in the private sector and showed the prominence of direct medical costs especially of drugs and diagnostics (ref).

While the Government has focused on insurance schemes with increasing pooling of funds and coverage of population, the studies point to issues in design and accessibility of these schemes especially for the marginalized groups and those suffering from chronic diseases. Thus, requirement of care in the private sector significantly pushes up costs and there was significant exclusion from the scheme – Among those covered only 44% of inpatient episodes were covered. There was a higher OOPE among insured than among non-insured. Also a number of logistic issues emerged for not getting covered – this included - empanelled hospital refuses care / card machine not working, lack of awareness etc., .

### 2.2.1 Some suggested ways forward:

- One of the key strategies would be shifting care from Private and for-profit care to public care – with a concomitant enhancement of quality of public care. It has been shown that private sector is more rational and non-extractive in jurisdictions where the public health sector shows leadership and capacity. With the sustained investment in the public health sector at all levels through Aardram Mission – it is hoped that this trend – already hinted at in the 75th round of NSSO will continue.
- There is an urgent need for studies to be done that will inform action and design of such action. Such studies include the investigation of:
- The experience of User fee as a barrier, its contribution to institutional finances and any possible alternatives to it.
- To explore the main sources of OOPE in public sector and how these can be tracked and reduced – need for planning an annual study to track this and learn from the study.
- Studies on various administrative issues – such as on claim rejections in public sector – what proportion rejected? What are the reasons for rejection? And how may it be minimised?
- How may the insurance schemes be expanded to cover areas of significant OOPE? What are alternative modes of financing which are less exclusionary?
- How does one reduce barriers to public care seeking – waiting time? Provision of care Patterns of OOPE in Public Hospitals –
- Research also needs to be focused on the Private sector – to document cost centres from patient perspective, to study patterns of rational / irrational care and diagnostics usage, feasibility of schemes such as cost capping that was tried during COVID. Further, methods such as grievance redressal cells and ombudspersons etc.,
- Need to further study the possibility of innovatively using other government funds – for example ESI – at primary and secondary levels. Exploring coverage for unorganized workers too who have ESI coverage now.

*In other words, this working group calls for a systematic build up of evidence regarding the issue of OOPE before planning schemes or programs for its reduction. It further reiterates the general principle that any reduction of OOPE will only be predicated on a general platform of public sector strengthening*

### 2.3 Plan for Climate Change

Climate change is emerging as a threat to many of the factors that affect human well-being. Climate Change has cascading effect on all vital parameters of life, such as air quality, water quality and quantity, weather conditions and extremes, heat, and thereby may affect vulnerability to certain ailments, spread of infections, as well as emergence of newer forms of infections. For instance, climate change is a potential threat to food production and is reducing crop productivity particularly across food insecure regions. This is directly linked to food price inflation and reduced food consumption thereby affecting nutritional intake and health, particularly among low-income households. The negative consequences of nutritional deprivation, such as child stunting, can be intergenerational in nature and affect

long-term health and well-being including cognitive outcomes, productivity, and earning potential. Further, climate related disasters have other indirect impacts by disrupting health services, supply chains and food systems.

In Kerala, temporal and spatial analysis of health and weather parameters, controlling for other pertinent factors shows that by and large climate indicators are yet to show a significant association with hospitalisation cases for several climate-sensitive health ailments. However, there is some relationship between health parameters and climate parameters detected, such that individuals from central or southern regions of Kerala have higher chances of hospitalisation due to fever and infections than compared to those from northern region.

Analysis of the seasonality and regional distribution of ailments using datasets on diseases across districts over a period of about 15 years shows that there is a changing seasonality pattern of diseases. It could be indicative of the association with weather patterns across regions within the state. Furthermore, it is observed that there is a shift in vulnerability to certain specific diseases like that of vector borne diseases like dengue, chikungunya and malaria which are globally considered to be climate sensitive.

Case studies in Kerala on climate change and health show several findings. Climate and its variations do influence the work and health of construction workers, in particular. They do have certain adaptation mechanisms of their own. The studies did find an increased incidence of extremely preterm births in the El Niño years, which could be attributed to the physiological and biochemical stresses incurred by mother and foetus due to climatic fluctuations. Seasonality was also observed in the occurrence of diarrheal diseases, which peaked during January to May and were less during monsoon season months of June to September in Kerala. During the El Niño of 2014 and 2015, drought conditions lead to water scarcity, and potential greater water contamination. An increased rate of hospital admission was observed in 2015, though the overall incidence of diarrhoea was less during the year. Respiratory diseases also showed seasonality. Peaks were observed in 2010 and 2015, when annual temperature and annual relative humidity were high, suggesting change in climatic conditions affect acute respiratory tract infection, especially in paediatric age group. These results require further analysis to verify trends detected, and further uncover the mechanisms behind the observed trends.

Analysis of existing health programmes indicates that recognition of climate change adaptation is pretty low. However, there is an opportunity to modify current programmes to mainstream climate-related health concerns, which may be more effective designing new programmes for climate change.

### **2.3.1 Way forward for the 14th FYP**

The key aspects of the emerging policy for Climate change includes a dual focus of making the health system infrastructure itself climate resilient and secondly getting the health system to be adequately prepared for the challenges and stresses brought about by climate change. While the action plan prepared calls for mapping of vulnerable areas, and further

mapping vulnerability to different types of climate stresses, it is important to emphasise that communities are not homogenous – and that there exists a graded vulnerability within communities along multiple and intersecting axes of caste, class, gender, disability, age and many other which also need to be carefully and contextually mapped in any planning. Further, research clearly demonstrates that the ability to be resilient is determined a lot by the pre-disaster / crisis state of the community and thus those who are already marginalized (and are concentrated in zones that are particularly vulnerable to a range of climate related stresses) will not only be vulnerable to climate events, but also to the mitigation strategies that may be suggested without keeping in mind particular vulnerabilities.

The Kerala Government, Department of Health is the first state level government that has adopted the Race To Zero commitment to reduce the carbon foot-print of the department. This is a commendable and visionary step and needs to be innovatively implemented by looking at the main areas of carbon production and developing innovative, locally relevant and locally enriching ways of reducing this.

1. Modifying existing programmes: Existing programmes and schemes which have climate relevance should be reviewed to assess the adaptation potential and they have to be restructured them.

2. Modifications in HMIS: the Health Management Information System needs to be strengthened and it should include and highlight climate sensitive health outcomes, both communicable and noncommunicable diseases. A long-term information base both regarding health outcomes as well as climatic parameters will go a long way in diagnosing this connection and guide adaptation strategies for future. There is a need for inter-sectoral co-ordination between the Health and Meteorological sectors, to help build a climate resilient health sector. Existing programmes which have climate relevance must be reviewed to see the adaptation potential and it has to be restructured accordingly. This also includes the modifications in Health Information and Management System (HIMS) and surveillance system which need to be strengthened. It should include and highlight climate sensitive health outcomes. There is a need for early warning and forecasting system as well as locale specific plans. Capacity development of health professionals at various levels on climate change and health is crucial.

3. Surveillance system: There exists a disease surveillance system, but this needs to be linked to weather parameters. The personnel managing it should be trained to deal with health and weather data and how to interpret them.

4. Early warning and forecasting system: This has been lacking in the State, especially in the health sector. Most of the time it is ad-hoc or emergency management and there is no early warning or forecasting system in health sector and it is high time that such a system is put in place

5. Local Plans: Each location has to prepare plan based on a weather-based surveillance system which is linked to early warning and forecasting system. There needs to be protocols

and guidelines for local health care managers for local plan development based on weather-based surveillance system. Also, define guidelines for planning by local health authorities and Local Self Government (LSGs) based on weather-based surveillance system.

6. Mental health: Not much data is available on impact of climate change on mental health though the international literature warns of severe impact on mental health. There needs further detailed study on this and recommendations for adaptation.

7. Capacity development: Health professionals at various levels needs to be oriented and trained on climate change and health. It is also important to develop capacities of local health professionals on analysis based on health and weather data.

8. Information, Education and Communication (IEC): There needs to be a large-scale initiative for IEC on impact of climate change and health and how to adapt to such situations. It is also useful to link this with mitigation efforts.

9. Medical education curriculum: Include in undergraduate and post graduate courses and training programmes for health care professionals the topics like • Climate change and health • Vulnerability assessment and Management protocols • Management of health data and its linkage with weather data • How to use surveillance, forecasting and early warning system • Adaptation planning in health care.

## CHAPTER 3

### HEALTH SERVICES IN THE 14TH FIVE YEAR PLAN

The 13th Five Year Plan had charted a comprehensive strategy of health system strengthening which included not only infrastructure development but also enhancement of services and its quality. Not only was the health care infrastructure expanded, but existing infrastructure was also enhanced. However, due to the unexpected COVID pandemic which began in February 2020, and is ongoing at the time of writing, the planned activities were interrupted to provide various emergency services for the pandemic.

The 14th FYP thus needs not only to plan ways of catching up with the interrupted activities, but also adapt those plans considering the pandemic and the emergent issues arising from it. Not only did the pandemic create newer issues that the health system has to engage with like post-COVID syndrome, but it also highlighted a number of key issues in the overall development of the health system including regional disparity, the need for highly skilled allied health professionals, and the need for and lack of comprehensive data management system and research capacity to name just a few. In addition, new infrastructure and technology has been invested in and its use in the post-pandemic phase needs to be planned and streamlined. The 14th FYP is being implemented in a situation of financial stress given the enormous unplanned strain of the pandemic, at the same time there are opportunities for innovative financing using the mechanisms set up by the 15th Finance Commission whose priorities and mechanisms need to be considered.

Overall, the key areas that need to be focused on are:

- Catch up on the planned activities of the 13th Five-year plan.
- Ensuring that priority is given to newly set up medical colleges and recently commissioned infrastructure to ensure that services of good quality may be provided, and regional imbalances are minimised.
- A comprehensive plan for the newly acquired infrastructure and technology like ventilators, diagnostics, and oxygen plants etc., is developed so that these investments can effectively be used to enhance service provision even in the post-pandemic phase.
- Planning for new issues that emerged post pandemic – this includes services for post-COVID or Long-COVID syndrome. Upgrading facilities for isolation at various levels in the public sector etc.,

#### **Medical Services – Aardram**

##### **3.1 Aardram Mission**

The key focus of the Aardram Mission is to transform the health care system into a more patient centric one as well as expand the range of services available at each level. Importantly the Aardram Mission seeks to develop the primary health care component of various services so that members of the community do not have to travel to higher medical centres for all speciality services. This responds to:

- The epidemiological transition that has resulted in a dominance of various non-communicable disease which require lifelong or chronic treatments and life style modification and hence requires care as close to home as possible.
- Studies showing a major shift in health seeking behaviour towards the private sector and a stagnation in funding and expansion of the public health sector in the 80s and 90s.
- As well as the concern with regards to Out of Pocket Expenditure – where it is clear from studies including the State Health Accounts that the major component of OOPE is outpatient drugs for NCDs and OOPE being much higher in the private sector than in the public sector.

Indirect evidence for the impact of the investment being made in strengthening of the public health system through Aardram mission so far comes from the 75th round of NSSO done during 2016-17 a few years after the launch of Aardram. This shows a shift in proportion of Outpatient visits from 34% (NSSO 71st round) to 47.5% (NSSO 75th round) and rural OP from 31% to 51.8% in the public sector in the same period.

The implementation of Aardram components which were slated to be achieved during the 13th Plan Period including task-shifting to nurse-practitioners, proactive coordination meeting between LSG members and health care staff, development of labs, upgradation of various infrastructure etc., have been delayed due to the unprecedented COVID pandemic. Further the investments and expansions that happened during the early period of the 13th Plan were slowed due to outbreaks of NIPAH and floods in the last three years with consequent rehabilitation and recovery activities taking precedence. This trend was also seen in the planned activities for the development of infrastructure in higher centres like the Taluk hospitals and District Hospitals.

Upgradation of infrastructure:

- The remaining upgradation of PHCs into FHCs needs to be completed.
- The upgradation and modification of Sub-centres into Health and Wellness Centres.
- Upgradation of CHCs.

Expansion of services:

- Expansion of SWAS clinics in a phased manner to cover all FHCs.
- Expansion of ASWASAM clinics and services in phased manner to cover all FHCs.
- Establishing comprehensive mental health programs–under Sampoorna Manasika Aarogyam programs in each FHC.
- Introduction of new services like vision services, diabetic foot related services and the cancer screening programs at FHC level.
- The establishment of Health and Wellness centres at both the sub-centre and the block level.
- Establishing the FHC infrastructure in urban centres.
- Establishing ArogyaSena units – while this is planned under the Aardram mission, the experience of the pandemic, where the RRTs (Rapid Response Teams) established in both urban and rural wards played a critical role in surveillance and following up of individuals quarantined and isolated at home, underscores the need for community

based voluntary networks. This component is further expanded in the section on facilitatory structures.

- Similarly step need to be taken to ensure the AardramJankeeyam campaign or people's campaign is planned and rolled out – this is further taken up in the section on Participation.

### **3.2 Taluk & District level hospitals.**

Based on the Aardram Standards infrastructure and human resources of all dist. level and Taluk level hospital to be developed in coming five years. Ensuring protocol/ guideline-based service delivery with a specified care plan for all out-patient, in patient, support services also is very significant. KIIFB supported master plan based developmental activities of 79 hospitals and NABARD supported schemes will mostly cover the infrastructure requirements of hospitals. Based on need assessment institutions yet to cover may be taken up in coming years. Most critical component in development of hospitals as per standards is the human resources and by new post creation alone it will be very difficult to address this issue. At present HR requirements are met through a range of systems –

- Regular posts (expansion through post creation)
- NHM contractual appointments
- Hospital Management Committee/ RSBY (KASP) fund based contractual appointments.
- LSGI contractual appointments (at very few places only at bigger hospital level)
- Service of doctors undergoing Dip NB course doctors
- Service of staff coming as trainees for different academic courses and for experience.

Along with creation of additional posts and appointment of doctors and other staff scope of existing other systems need to be further explored and streamlined. Similarly, a system for optimum utilisation of services of various categories of available staff also to be ensured. Human resource management and finance management system of major hospitals needs to be modernised and systems for supportive supervision of different functional components of hospitals needs to be made more systematic and an inbuilt mechanism to be developed. Considering the fact that master plan-based infrastructure developments are happening in large number of hospitals, appropriate systems for ensuring uninterrupted services in all sections of the hospitals is another challenge.

In a phased manner all hospitals to be accredited with KASH (Kerala Accreditation Standards) Kalyakalpa (for ensuring hygiene, waste management & Infection control), LaQshya standard (for ensuring labour room standards) and NQAS standards. 25 % each of the remaining institutions to be taken up every year and the process to be completed in four years. Those not qualified in the initial rounds will be taken up in subsequent years and in coming years the accreditation process and completed.

#### **3.2.1 Development of Dental health care services.**

At present services Dental surgeons are provided in 36 District level hospitals, 80 Taluk level hospitals and 40 Community Health centres in Kerala. Developments of dental health care services of Hospitals are being done as part of development of speciality care services under

Aardram Mission. Speciality dental care services are provided in hospitals. Development of Dental health care services are done through the on-going plan scheme and activities envisaged under National Oral health programme is implemented through NHM.

### **3.2.2 Broad plan of action for coming five years.**

- Development of dental care services of district and Taluk level hospitals including speciality dental care services.
- Establishing Dental units in all 152 Block level community health centres in a phased manner. (Service of dental surgeon is coming in the service package of block level CHCs).
- Integrating dental and oral health components into the comprehensive primary health care package of Family Health Centre Programme .
- Expanding preventive promotive and curative oral health care component at field level and in Primary health care institutions

### **3.3 Super speciality services in hospitals of Health Services**

Considering the high prevalence of Non communicable diseases and resultant end organ diseases, there is a genuine need for developing super speciality services in Kerala. During last five year plan as part of Aardram Mission as per GÓ(MS)No 58/2017/H&FWD dtd 22/04/2017, seventeen institutions were selected as District Level Hospitals and it was envisaged that super-specialty services would be provided through these hospitals. As a first phase, super speciality posts were created for Cardiology, Nephrology, Neurology and Urology in selected District level Hospitals. Currently Gastroenterology Super speciality OP is functioning in GH Thiruvananthapuram

#### **3.3.1 Cardiology:**

Right now CATH lab is functioning in eight institutions under DHS. Through KIIFB fund a scheme for establishing coronary care facilities including Cath. lab facilities in ten hospitals in the State (two in Hospitals coming under Directorate of Medical education and eight under health services) initiated in 2017. Of these except one centre civil works of all other centre have completed. Training of doctors and staff of three centres are continuing. By the end of 2022, all districts except Idukki will be having a functional CATH lab under DHS. Currently there are sanctioned posts of cardiologists in only three institutions under DHS. Other centres are functioning with cardiologists coming under speciality cadre. During the fourteenth five-year plan, all institutions with CATH lab facilities should have sanctioned posts of cardiologists. Once the Super-specialty posts of these selected super-specialities have been made available across the State, the state shall move to the next level of providing Cardiothoracic surgery services in these institutions.

Only by establishing systematic referral and back referral system with well-defined care plans and protocol based management by general medicine specialists at dist. & taluk hospitals and follow up care at FHCs/CHCs case load of the cardiologists can be made optimal.

### 3.3.2 Nephrology:

Posts of nephrologists were created in district level hospitals. Expansion of dialysis services in govt. hospitals were a major achievement of last five years. At present district level and Taluk level hospitals are providing dialysis services in Kerala. Through the KIIFB supported programme dialysis units were established in 44 taluk level hospitals and currently patients are undergoing dialysis services through hospitals of health services. In addition to this in some districts, NGO based dialysis schemes are providing dialysis services through CHCs and even PHCs. Department is currently following the criteria of establishing dialysis units up to the level of Taluk level hospitals.

Initiation of peritoneal dialysis in few centres was another achievement of last five year.

#### Plans for coming five years:

- Increasing the shifts of haemodialysis in centres with less than three shifts.
- Further expansion of peritoneal dialysis services to all district level hospitals in a phased manner.

For achieving this and for expanding quality services at the household level, following activities are proposed.

- Expansion of peritoneal dialysis services to district level hospitals in a phased manner
- District level training centres for providing training on peritoneal dialysis to be established to these hospitals.
- Developing trained staff at FHCs for providing support for peritoneal dialysis at household level.
- Other support services and logistics

Note: FHC's should act as points for dispensation of peritoneal dialysis fluids to patients who are using this moScheduledCaste of treatment as their renal replacement. At least one staff nurse from each PHC or FHC should undergo training in peritoneal dialysis techniques and complications at a designated district or regional centre. These nurses should in turn train the palliative nurses who should be tasked with visiting the patients who are undergoing peritoneal dialysis and provide them with help and motivation.

### 3.3.3. Urology Services:

A urologist working in the major hospital with sufficient infrastructure can provide services like major and minor surgical procedure and diagnostic procedures. Examples include medical and surgical management of renal stone disease, treatment of prostate problems including BPH and prostatic malignancy, surgeries for various malignancies of the urogenital tract, laparoscopic procedures including laparoscopic-nephrectomy, diagnostic procedures like cystoscopy, biopsy, and urodynamic studies. The expense for many of these procedures is very high in private sector and not easily affordable to the public. Hence strengthening of urology department in major hospitals under health services department can provide these diagnostic and treatment moScheduledCasteies to public and it will be of huge public health importance. For effective treatment of many of the renal problems combined services of Nephro- Uro departments is essential.

### 3.3.4 Gastro-enterology service

Over the years though there is a reduction in upper gastrointestinal cancers, there is an increase of lower gastrointestinal cancers in Kerala. Increased prevalence of Gastrointestinal cancers involving both the Upper and Lower GI tracts have compelled the various societies across the world to come up with recommendations for screening programmes for the early detection of cancers.

Increasing prevalence of alcoholic liver and pancreatic diseases, the present pandemic of lifestyle diseases like Diabetes, Hypertension and associated Metabolic syndrome which are included under the NCD programme, along with an ever-increasing number of patients who are being detected to have NAFLD (Non-Alcoholic Fatty Liver Disease) is further amplifying the need for expert care in the prevention of Cirrhosis and Hepatocellular carcinoma in the society.

- The viral hepatitis (HBV and HCV) associated liver disease leading to chronic disease of the liver have also to be addressed because of the risk of transmission. A significant step has been taken up in this regard with the implementation of vaccination programmes against HBV.
- The central govt. has launched the National Viral Hepatitis control programme and the service of a gastroenterologist is needed for conducting the programme
- The numbers of pancreatic-biliary diseases like gallstone diseases, chronic calcific pancreatitis, malignancies of the pancreato-biliary systems are also increasing putting a huge burden on the existing healthcare system.  
Currently General Hospital Trivandrum is the only hospital under DHS where an independent gastroenterology unit is functioning.

#### **Current status of gastroenterology services in Health services:**

Post creation in super-speciality department of Gastroenterology was not done during last five year plan. However, there is a fully functioning Medical Gastroenterology unit in Health Services department at General Hospital Thiruvananthapuram under a qualified gastroenterologist, attached to the dept. of General Medicine, which has been functioning well since November 2017, the details of which are attached to this.

- Diagnostic and therapeutic upper G I, colonoscopy and ERCP procedures are done routinely in the endoscopy suite attached to the OT complex. State government has invested for equipment worth 100 lakhs for the department.
- Various OPD procedures like ascetic fluid tapping, USG guided FNAC and aspiration are routinely done on almost all days.

### 3.4 Urban Health.

As per 2011 census 48 % of Kerala population is urban. Though most of the major hospitals of health services are located in urban areas, the system for providing comprehensive primary health care services in Urban areas are still very much inadequate especially in city corporation area. After the initiation of National Urban Health Mission, Urban Primary Health Centres (UPHCs) have been set up and currently 94 of them are functioning in

different urban locations. These UPHCs with doctors and paramedical staff including lab technicians with laboratories are playing an important role in providing primary clinical care services in backward urban areas. Most of the centre's working time is set for providing services in afternoon and evening hour (2-8 PM). In some districts speciality services are being provided in rotation basis in these centres. Field level services are provided through Junior Public health Nurses (JPHNS). All staff of these centres are appointed on contract basis through NHM.

One of the major learnings from the study of urban health as compared to rural health is the way in which vulnerability is constituted quite differently. The Hashim Committee for example clearly pointed out that a simplistic APL/BPL classification or a slum/non-slum geographical classification does not do justice to the complexity of poverty as it is emergent in urban areas. The Hashim committee points to the following:

- Residential or habitat based vulnerability - and for this we need to go beyond only kuchha / pucca house - but also involve access to basic determinants like running water, proper sewage, susceptibility to flooding, insecurity of tenure, over-crowding etc., Those in institutions - like orphanages, prisons, half-way homes etc.,
- Social vulnerabilities - female headed households, transgender communities (who may actually live in lodges etc.,) those with disability, age based vulnerabilities, in Trivandrum - coastal communities.
- Occupational vulnerability - those without access to social security, unemployed, migrant, those in precarious employment, garbage / waste handlers etc., hawkers,

The planning for strengthening of health systems - has to emerge from such a mapping and a subsequent mapping of health services access -

- The transformation of sub-centres as reverse referral units and the initiation of helpdesks in medical colleges for those who are referred from urban units - a sort of gate keeping - or preferential treatment - with an option for referral back to local unit for follow up.
- In general, while the idea of resuscitation unit is welcome - it needs to be planned to keep in mind overall health personnel required and maintenance of. Then networking with other institutions and higher institutions of referral - will be a key point.
- Disaster proofing health facilities and disaster proofing vulnerable areas - what are the vulnerabilities and what are ways of this building of resilience?

In addition, the following questions need to guide the planning of the development of the Urban health system during the 14th FYP period:

- Who are the floating populations and what are the barriers that they are facing? One of the key issues is that a large proportion of the floating population is for medical reasons - thus relatives are sick and they come for treatment - these individuals will probably be staying in lodges - and their requirements may be quite different from individuals who are living permanently in TRV.
- The issue of Occupational vulnerabilities including the health facilities in common

areas like markets and the possibility of providing toilets and creches? Occupational vulnerabilities of GIG workers - what is their risk of NCD? Especially due to their huge exposure to air pollution and their lack of exercise, and their precarity of work.

- Research - on actual burden of disease - cross-sectional surveys and verbal autopsies - case studies of patient pathways etc., for a range of illnesses - to get a better idea of where the gaps lie.
- Research on actual gaps in functioning - like the time for maximum demand of services - is it really in the morning time? Is it from 1pm to 9pm as NUHM report says?
- Evaluation / cost-effectiveness of various programs being implemented by various corporations and municipalities.
- The strengthening of governance functions in Urban health – including the strengthening of Mahila Arogya Samithis and the suggested federated Jan Arogya Samithis – with a possibility of integrating occupational groups into the federated structure.

#### **3.4.1 Current Urban primary health care Services.**

**Urban PHC (now getting converted into FHCs), CHCs coming under Health Services**

**Department:** Most of the urban areas are still covered by the previously existing health care institutions and field staff of health services.

**Health care services provided by urban health wing of Municipality and Corporations:**

The focus of urban health wing is sanitation, birth and death registration, epidemic control, and food safety.

(Since the pay and remuneration of Medical Officers in Municipal health wing is not attractive at many urban areas the post of municipal health Officers are laying vacant. Earlier some efforts were made for integrating this scheme with health services. Considering the fact that, primary health care issues including repeated outbreaks of dengue and other communicable diseases are more in urban areas this need to be considered seriously)

#### **3.4.2 NUHM urban health centres; now getting transformed into Urban Family Health centres.**

**Broad plan proposed for coming five years:**

- Developing Urban PHCs as urban Family Health Centres as in the case of rural FHCs. The current pattern of one UPHC for 50,000 Population is very much inadequate to meet the urban primary health care requirement and at least one for every 20000-30000 is need
- Developing Urban CHCs as per standards envisaged for Block level CHCs under Aardram Mission.
- Urban Sub Centres: Developing Urban Sub centres of health services in the pattern of Sub centre based health & wellness centres of rural areas, especially in light of provision of 15th Finance Commission in this area.
- Vulnerability mapping of both groups of individuals, geographical areas and health infrastructure to completed during the 14th FYP period as detailed above.

- Research on various aspects of Urban health including design, coverage, risk and governance mechanisms to be planned.
- Strengthening of people's participation in Urban health governance through both the MahilaArogyaSamithis and the federated Jan ArogyaSamithis and / or their equivalents in Kerala



**CHAPTER 4**  
**MEDICAL EDUCATION**  
**MEDICAL EDUCATION AND MEDICAL COLLEGES**

**Key Recommendations of 13th FYP**

**I Government Medical Colleges**

The key recommendations of the 13th FYP included moving towards strict referral protocols and converting medical colleges into referral centers, developing organic linkages between DME and DHS institutions, scaling up infrastructure, revising staffing patterns and focus on skill development, and the development of Emergency medicine speciality.

**3.4.2 Status Of Various 13Th Fyp Recommendations**

There has been systematic approach to achieve the goal of developing the government medical colleges to centres of referral centres and the protocol for referral and back referrals were developed in covid era. The medical colleges and medical education departments played a crucial role in keeping the mortality low in the pandemic situation of COVID 19 and Nipah due to well established tertiary care facilities. The establishment of clear referral pathways and defining the care delivery facilities of health care centres must be established.

PEID cells under community medicine departments are playing a key role in status defining, environmental surveys and acting as nodal agencies of linkages and communication between the medical colleges and the Health Services hospitals and local self-government institutions.

The infrastructure facilities of all institutions have developed in the last 5 years with development of master plan and structured development of infrastructure through, state plan funds, PMSSY, KIIFB funding. But considering the demand of increasing patient load as the facilities improve, the augmentation is still to be continued. The staff pattern of medical, nursing and all other paramedical categories must be revised according to the current increased service need of the service seekers in the hospital. Quality of human resource in the health sector was improved with Skill trainings which were done at various institutions using faculty improvement initiative, but a centralised module based, periodic central training system has to be established through centres of skill trainings AT Trivandrum and Thrissur medical college NELS centres. Emergency medicine Departments were established with posts created at Trivandrum, Calicut and Kottayam but the effort has to be made to establish the EMD in other institutions with all infra structural and lab facilities. OP transformation has been achieved significantly at all major institution through Aardram mission initiative but lagging of e health implementation has effectively reduced the overall impact of this patient friendly initiatives. Hence systematic organisation of the various components of outpatient care is very critical in ensuring quality OP care must be reconsidered.

## Recommendations

### 1. Quality Assurance

- Should be mechanisms to Periodically assess the delivery quality of these institutions. Institutional quality assessment can be done on zonal basis of South , middle and North zone institutions under medical education sector using Quality indices check lists
- Implement strict performance appraisal system and give incentives/promotions based on performance only.

### 2. Institutional Autonomy and Centres of Excellence

Each of the major medical colleges can be given autonomy can be developed only through comprehensive planning. This is facilitated by high level of intellectual work and outcomes, institutional development based on its own resources and expertise. To provide we need more such island of excellence, we need more staff stability.

Implement a system to evaluate the performance of departments or institutions and to declare them as centre of excellence. This should give additional benefits to that department in terms of budgetary allocations/supporting services/direct approach to Government and staff stability.

An expert committee constitution of academics/doctors from the premier institution of the country is needed for this.

**Certain departments of** Cardiothoracic Surgery, Neurosurgery, Plastic surgery, General surgery, Ophthalmology, Interventional Radiology may be considered as 2 departments in Zonal institutes in the next 3 years. This will facilitate resource pooling and effective delivery

### 3. Super specialty services

- Short term goal will be functional completion of the SSB blocks which are under construction in various premier institutions.
- As its indeed an important area to concentrate to provide Basic super specialty departments and strengthen certain departments
- This can be facilitated by Development of new superspecialist departments in Zonal institutions and Starting of 5-year super specialty courses in Calicut, Trivandrum, Kottayam and Alappuzha.
- There should be all efforts to Critical care Department Start critical care medicine post graduate courses in all major institutions It is an era of unusual pathogens and different clinical behaviour, and it was over emphasised in covid 19 response.
- Establishing and supporting development of acute stroke units and and augmentation of Cath lab facilities as number of life style diseases needing expert care has to be established at all institutions . As short-term measures it should be considered to augment Cath lab services in all major institutions for managing Acute stroke

#### **4. Quality and Patient Safety (QPS) & Faculty improvement program (Health Promotion Initiative)**

- Structured planned training of Faculties in different levels in Teaching, training, skill training , Soft skills and Administration with government assisted MHA should be given to potential administrators and future hospital and institution heads
- Modular centrally placed curriculum for faculty training . The planning of the faculty training should be uniform across state with directorate level Training planning.
- Development of Skill training centers as mandated by the creation of a Skill lab in all medical colleges for UG education and formation of a central curriculum-based training in all major institutions. This can be facilitated by ATLEC Trivandrum and NELS training centers at Thrissur Kottayam, Calicut , Trivandrum . 2 more institutions can be added through government of India initiative this year. KUHS Centre for simulation and training can form the curricular centre for Certificate programs and international collaborations
- High fidelity skill lab has to be created in all medical colleges, which is going to help train our future doctors. The same skill lab can be utilised for training other courses including dentistry, nursing and paramedical students. This will help in managing patients in a controlled environment and will ensure training without harming the patients.

#### **5. HR Planning**

- Quality of medical care delivery is based on the provision of adequate resources and The staff pattern of medical, nursing and all other paramedical categories has to be revised according to the current increased service need of the service seekers in the hospital. HR planning should be clubbed with Infrastructure designing and plans.
- With the development of infrastructure projects, a schematic plan should be laid to facilitate HR provision and deployment right from planning state in order to avoid resource wastage.
- A detailed study of efficiency of man power utilization and implementation of corrective measures with a third party like IIM.
- The transfer of faculty to other institutions should also consider the research and projects undertaken by a particular faculty and should be given due consideration to finish the said work undertaken by them..

#### **6. Infrastructure planning for medical colleges**

- Health sector division of PWDA division of PWD department under health sector may be created to coordinate Civil, electrical , electronic wings to integrate infrastructure works Multiple projects are done by the various quasi government agencies needs to be taken into the system with clear guidelines of maintenance by PWD or other agencies. Measures will be reserved Comprehensive planning and execution of works PWD departments in designing, estimation, and execution to avoid delay and policy guideline shas to be prepared at least in health sector planning.
- Due to significant planning done in the last 2 plans the infrastructure development has

been attaining a big surge in the infrastructure of major institutions. Ardrum mission and Patient friendly initiatives have transformed Out patient departments in major institutions in medical education sector but lagging of e health implementation and diluted the overall output.

- status evaluation of infrastructural works as per Master plan and level of completion of these projects has to be done immediately. Structured monitoring of the projects is to be overemphasized.

### **7. Time Sensitive Emergencies in first 24 hours**

- Developing emergency medicine department which is mandatory for all institutions, and it is already implemented in few institutions. Steps should be taken as a short-term measure to establish Emergency medicine department at the earliest
- Disaster management
- All medical colleges should have a Disaster management unit. The unit This unit should create and maintain disaster management plans for in hospital calamities and also has a liaison with the district and state DMA to upscale the medical support in case of out of hospital disaster scenarios. Periodic training programmes to be initiated under the leadership of the Disaster management unit for preparing for natural and man made disasters including CBRN(Chemical biological radiological and nuclear)

### **8. Tertiary Care Cancer Centers in all Medical Colleges – Mini RCC**

- As the number of cancer patients are exponentially increasing efforts to transform Oncology departments to tertiary cancer centers should be placed as a priority.

### **9. Creation of new service departments**

Establish new departments like Nuclear Medicine Dept., Rheumatology Dept., Geriatric Dept., Paediatric Cardiology/Cardiac Surgery Dept, Haematology Dept. in at least one medical college each at south/mid of central zones. Molecular genetics, Sport physiology laboratory and concept of Virtual autopsy facility should be probed for the new era .

**10. Facilitation of collaboration and inviting the support of Alumni of the different institution** in enhancing infra-structure, Academic, skill training and Research initiatives . The BOT models of enhancing the developments should be encouraged and Public private participation modes should be used in each centre in identified gap areas like PRAANA initiative.

**11. Exchange programs between universities and international centres** should be facilitated at all levels of Academics, Technology interphase and Research.

## **II Nursing Department**

### **A. Nursing Education**

- **Nursing education and training** are key trust areas to be considered and every effort to improve quality nursing services across state.

- **Short term skill training courses** for student nurses to enhance their competency to function. Certification programme/courses may be implemented in the Patients safety, Legal literacy Infusion therapy Medication safety.
- **Nurse practitioner courses** may be newly developed in Critical care, Midwifery and Public Health. Midwifery training institute attached to government collage of Nursing at Kozhikode may be considered.
- **Quality certification-for institutions of nursing education** and Establishing a national institute of nursing education in Kerala State may be envisaged .
- A fully functional CNE may be established to integrate the various components of Nursingcare.

### **B. Public Health Nursing**

Utilise MLHP for improving quality of primordial, primary level preventions, health promotion and rehabilitation services and Utilise MLHP for school health programs Administrative supervisions may be attributed to MLHP/PG nurses specialised in community health .Diploma in psychiatric nursing/specialised in psychiatric nursing needs to be posted as Nurses in mental health centre.

### **III. Pharmacy Service**

- The proposed recommendations to strengthen the Pharmacy services is essential for overall health delivery systems. Introduction of new PG courses in Government pharmacy colleges to facilitate research Strengthening of quality assessment laboratory in pharmacy colleges for in-house drug testing and getting NABL accreditation is a way forward in this line. Efforts of Promoting Integrated research among different medical departments and pharmacy colleges for patient-oriented drug and formulation development.
- Induction training while entering the service for pharmacists, pharmacy college faculties etc. for mentoring them according to the needs of government and also to make them understand service rules and office procedures
- Setting up of patient counselling centres in all medical colleges for the benefit of patients
- Setting up of Drug information centres (DIC) in medical colleges for providing all drug and dose related information to all health care professionals.
- Setting up of Power dilution units in all pharmacy colleges for dispensing potent drugs in low doses which are not available in market for paediatric patients

### **IV. Allied Health Science (Ahs)**

- According to the World Health Organization (WHO), “Allied health personnel are personnel who have specific connections with the art and science of health care and are recognized as members of health team in the national health system. They are educated, with different levels of professional qualifications, in a recognized or accredited health or health related or academic Institution”.

- In harmony to the United Nations' Sustainable Development Goals (SDG), India has put strategies in place aimed at streamlining the healthcare delivery sector to achieve the Universal Health Coverage (UHC) target. Studies from Ministry of Health & Family Welfare (MOHFW) and NSSO indicate that demand for allied health care worker is significantly higher than supply. Assuming the demand for allied health care worker per 1,000 people to be consistent, India would need 60-70 lakh allied health care workers by the year 2024. The National Commission for Allied and Healthcare Professional Act 2021 was enforced in India on 28.3.2021 to regulate and maintain of standard of education and services of professionals in the field of Allied Healthcare in India

### **Long Term Goals:**

- Enhance the Allied Healthcare workforce capacity and quality in Kerala.
- Improve Allied Healthcare worker density (per 10000 populations) from current 13.4 to 25
- Augment infrastructure capacity for Allied Healthcare Courses in Medical Colleges in Kerala.

### **Short Term Goals**

- Start a separate division of Allied Health Section (AHS) at DME office and Secretariat Thiruvananthapuram to liaison with AHS section, Ministry of Health & Family Welfare, Govt. India, New Delhi and appoint Joint Director (AHS) to support DME for daily activities of AHS education.
- Formulation of specialization-based team to conduct a thorough study of existing public sector and private sector capacity and identify measures to enhance infrastructure and AHP seats in existing medical colleges. This could be an interim multi-stakeholder body comprised of experts from medical and different allied health professions and administrative leadership. Subject expert can be invited from government and as well as private sector.

**HR planning exclusive for AHS courses** as per minimum standard of National Allied Healthcare council and start College of AHS at selected Medical Colleges in Kerala

- Dissolve state paramedical council and constitute State Allied Health Council as per The National Commission for Allied and Healthcare Professional Act 2021 for the following roles:
  - Registration of professionals within state and licenses renewal
  - Standards enforcement through inspections
  - Grievance redressal for professionals, institutions at the local level
  - Accreditation of State Allied Health Council should be made mandatory for private and government Allied Health Sciences/ Paramedical institute or colleges in Kerala and include of the allied health care educational institutes and programs under **National Institute Ranking Framework (NIRF)** or establishing a state ranking system for institutes to enhance the visibility of the allied health care professionals. And live registry for Professionals of AHS may be considered

Effort should be made to Highlight the role of allied health care workers and their criticality for healthcare services delivery by running ad-campaigns, TV and radio broadcasting, social media outreach etc. may also be considered

### **V Dental Health**

- Implementation of E Health Project in all dental colleges as proposed in medical colleges. Establishment of a Component of SBMR as State Dental Research Unit to facilitate and coordinate multidisciplinary research in all Government dental colleges
- Induction training to all teaching faculty for capacity building in dental teaching, effective communication and man management skills which should be repeated on a regular basis Faculty evaluation/monitoring program similar to those proposed in medical colleges
- All in one Dental care delivery for elderly - for providing comprehensive dental care clinic in all dental colleges, to the elderly people to avoid shunting to various departments Specialty dental clinic for differently abled children in Pedodontics also needs to be considered
- Establishment of a facility for teledentistry and live streaming of surgical procedures in Oral Surgery and Periodontics. Up gradation of The Dental Laboratory at Pulayanarkotta (Phase II) should be considered as a short term perspective .
- A centre for management of cleft lip and palate and other craniofacial disorders in two of the dental colleges may be considered and development and quality expansion of various dental specialities should be given a thrust like Digital dentistry . CAD/CAM Prosthodontic Clinic- chair side fabrication of prosthesis employing digital technology, Facility to provide Minimally Invasive/Microscope assisted surgical procedures in Periodontics, Facility to encourage microscope assisted Endodontics.
- Oral and Maxillofacial surgery Unit to be incorporated in every Emergency care department and Development of Department of Community Dentistry needs to be considered as a short term goal.
- Enhancement of MDS seats in all disciplines and Introduction of Quality Assessment & accreditation Encourage institutions to obtain accreditation rankings highly ranked institutions to be promoted.

### **Emergency Medicine & Trauma Care**

“TIME SENSITIVE EMERGENCIES – A SINGLE POINT OF CARE”

#### **Introduction**

Getting medical attention in an emergency is a right for every citizen in the country. Emergency medicine and Trauma Care has become the standard of care in all the developed countries. Kerala as a state has robust health infrastructure in various aspects hasn't reached the level of international standards in case of providing care for the critically ill patients at the first point of contact.

Historically until 2005, the number of accidents per thousand vehicles in the State remained as one of the highest compared to the National average. The formation of Kerala Road

Safety Authority (KRSA) in 2007 was an important step in countering this menace.

However, as per Kerala State Crime records Bureau, recent trends in incidence and mortality due to Road Traffic Incidents shows that though the incidence of road traffic crashes has declined, the mortality due to RTAs did not show a proportionate decline, or rather has shown an upward trend . This phenomenon of flattening /increasing mortality trend in spite of declining number of reported accidents may be due to two main reasons:

1) Change in characteristics of RTAs (like more high-speed accidents). This is reflected in the higher incidence of grievous injuries also.

2) Poor health system preparedness for increasing need for emergency trauma care

Since most of the people especially in trauma and critical medical emergencies are referred to medical colleges and district hospitals, it is important to have a system which caters to all the emergencies under one umbrella. This will alleviate the need for shunting the patients to various building complexes for providing quality care when time is of the essence. The lack of timey intervention can lead to mortality and long-term morbidity in all the medical, surgical and traumatic emergencies (time is muscle in MI, time is brain in Stroke, Golden hour and platinum minutes in trauma victims, 1 hour bundle in sepsis patients, immediate airway management in an anaphylaxis etc.).

We need to envisage a system of care where patients irrespective of the medical or surgical conditions is being promptly being identified, stabilised and referred to a center which can manage the acute emergencies to the best of care possible. The concept of bringing the care to the patient than shunting patient to the care areas loosing valuable time. The same was conceptualised in the 13th five-year plan but unfortunately delivery was incomplete due to various factors.

### **Steps Taken By Govt Of Kerala Till Now**

In this awake a document was created as Kerala trauma policy 2017-2020 was launched and the following actions were initiated. Hazard mapping using GIS software was done to identify the geographical distribution of the predictable major causes of injury. Geospatial analysis and feasibility study was conducted to identify the ambulance points for ensuring timely shifting. Potential hospitals which can be realistically upgraded to ensure essential emergency care were also identified. Gap analyses were done in each of these selected hospitals to identify and quantify the critical gaps in the emergency care facilities

The WHO's Health Action in Crises (HAC) has recently elaborated a five-year 4 pillar strategy to build the capacity in emergency preparedness and risk reduction.

- Assessing and monitoring baseline information on the status of health emergency preparedness and risk reduction at regional and country levels
- Institutionalizing emergency preparedness and risk reduction in ministries of health and establishing an effective all-hazard/whole health program for this purpose
- Encouraging and supporting community-based emergency preparedness

- Improving knowledge and skills in health emergency preparedness and response, and risk reduction.

### **Key Deliverables Proposed In 14<sup>Th</sup> Fyp**

- Kerala Trauma Policy to be released during the 14th FYP.
- Structured Trauma Delivery System hospitals to be developed.
- Geospatial localisation of trauma.
- Establishing effective network of emergency ambulance services.
- Putting in place a plan for periodic monitoring and training and consequent feedback into overall design and governance of the system.
- Ensuring optimally capable human resources.
- Establishing registries for Trauma and Emergency.

#### **A. Structured Trauma Delivery System Hospitals**

- Establish Emergency Medicine and Trauma Care departments in all medical colleges and District hospitals. Trauma Care should be of Level 1 standards in medical colleges and Level 2 in District hospitals, Level 3 in Taluk Hospitals, Level 4 in FHC
- The centre will have a plan for Disaster management – both intra hospital and public health emergencies which can be used to scale up in case of necessities. Kerala health policy document has detailed in 2017 the distribution of trauma centers, their gap analysis, the budgeting requirements, and reorganization in detail. The process is on but we need to give it as a priority target in next 2 years.
- Create a robust referral system between various care hospitals for smooth continuation of care and appropriate transfer

#### **B. Geospatial Localisation Of Trauma Sites:**

- This was completed with reasonable precision and the risk points were identified and labelled as in the Kerala trauma policy document. This needs to be further augmented by new survey and updated for 2022-2027. A new strategy to locate pedestrian injuries must be evolved as Kerala stands in Top 3 National statistics on pedestrian accidents

#### **C. emergency Ambulance Services:**

- Placement points for EMS services and ambulances were identified and 108 ambulance systems were launched. But as the covid situation evolved the 108 ambulance systems were diverted for these purposes. The ambulance systems and alert call systems needs to be reintroduced and strengthened. The possibility of one air ambulance devoted for trauma care victim transfer may be contemplated for future.

#### **D. Capacity Building And First Responder Trainings**

- First responder training for basic emergency support for prehospital care and structured system was launched at Ernakulam district. This must be re installed and completed in all the districts in next one-year 2022. This will facilitate to highlight the dos and don'ts of emergency care in the golden hour. 1.
- Regular training and periodic revision of training for all staff for handling emergencies is mandatory.

- Create Emergency Medical Technician training under the paramedical council to man the ambulances and aid in emergency departments

### **E. Creating More Qualified Man Power**

- Create adequate super specialty posts to upscale the Emergency and Trauma care departments to Level 1
- Initiation of DNB courses in District hospital for EM and PG courses in medical colleges for EM.

### **F. Registries Of Trauma And Emergency**

To have registries using ehealth system for referral and data analysis for ensuring international standards of care and identification of pitfalls for constant improvement of emergency health systems in the state.

### **3.6 Establishment of an adequate Laboratory support system for the Health Service**

Covid-19 pandemic has revealed the importance of the diagnostic laboratory in modern health care. In fact, modern medicine cannot be practiced without adequate laboratory support.

Laboratory medicine seems to be one of the weakest links in the Health Service department of Kerala government. Apart from the medical colleges, laboratories beyond the basic are few and far between. On the one hand, this leads physicians avoiding lab tests whenever possible with possible adverse impact on patient care. On the other, there is dependence on private laboratories which place financial burden on poor patients.

It would greatly increase the quality of care in the government health service sector to have comprehensive laboratory support to all its institutions in a cost-effective manner.

### **The working group suggests that comprehensive program to strengthen lab facilities with the following objectives be undertaken:**

- To establish District Diagnostic Laboratories (DDL) in each district to serve non-basic and advanced laboratory needs of the health service institutions.
- To institute an efficient courier system to transport specimens from each institution daily.
- To utilize the services of all doctors trained in different fields of laboratory medicine, within the health service in these laboratories.
- To raise revenue by offering advanced laboratory tests to private hospitals and individuals at reasonable costs.
- To monitor the quality of laboratory services in all institutions.

The established District Diagnostic Laboratories should provide support for the following

- Clinical Pathology and hematology including Flow cytometry
- Histopathology including immune-histochemistry
- Cytopathology including FNAC, Pap smears and HPV testing
- Microbiology including Culture, Serology and PCR

- Biochemistry including automated clinical chemistry and hormone assays
- The space for the laboratories could initially be provided by the district authorities. Eventually they separate buildings for housing the laboratories can be thought of. At that stage District Blood banks and District Imaging services may also be envisaged to function alongside these laboratories.

Sourcing the renewables from the Kerala Medical Services Corporation would make it more economic and will help bring down the costs.

### **Transport of Specimens**

A courier system may be instituted to transport specimens to the DDLs. This may be a 2-stage system where specimens from nearby areas are brought to intermediate centers (PHCs to CHS/Taluk hospitals) and thence to the DDL. The practice in some districts of Tamilnadu may be studied and followed if feasible.

### **Diagnostic cadre**

There are many medical specialists with laboratory medicine qualifications (Pathology, Microbiology, Biochemistry) now working in the health service. More often than not, their skills and services go unutilized. It would be good to incorporate all of them into this scheme of things



## CHAPTER 5 HEALTH OF SPECIAL GROUPS

One of the challenges for well performing Health systems like Kerala is the persistent disadvantage of various groups in the population around a range of axes. These include groups that face social disadvantage like women, transgender communities and those along caste and religion. Further, groups like the Scheduled Tribes and the coastal communities face unique disadvantages in Kerala. In addition to these traditionally recognized groups emergingly recognized groups such those with disability, those who are ageing, especially widows, migrant labourers etc., are present in Kerala and deserve attention. In addition, two aspects are important to bear in mind – one is the intersectionality of experience of groups and the second is the context specific nature of the mechanisms of marginalization.

While each identified group will have specific mechanisms and thus specific interventions that are called for, in general principles for engaging with such complex inequities rest on basic principles of deepening democracy, empowering communities and being respectful of social and cultural diversity. In addition, a key aspect for the planning of any intervention is the need to build up a strong data base and evidence for action. This calls for the design of data and information architecture that considers health inequity and disadvantage as they play out in Kerala.

While there exists a vast literature on these various marginalized groups if not in Kerala then in the national and international arena, in this chapter we highlight some of the main issues and some of the key directions that the health system has to take to overcome these marginalizations and vulnerabilities.

### **Women's Health**

While women in Kerala continue to have some of the most enviable aggregate developmental indicators in the country, continued burden of contraception, unnaturally high levels of caesarean section, high out of pocket expenditure for delivery services, mental health issues and high rates of Gender based violence and suicide among women all point to a large unfinished agenda in women's health in the state.

Malnutrition and anaemia continue to be a problem with persistently significant levels of adult malnutrition and a rising rate of anaemia among women. This is in parallel with a significant increase in obesity being reported in the latest round of NFHS. While there is a rising trend in non-communicable disease access to health care services, and adequate control of these remain a problem.

The most recently released report of the confidential maternal death audits continue to show the importance of mental health and the possible issues with high caesarean section rates in Kerala.

Another important axis of inequity are women in the work force. Although 70% of the workforce in health sector is constituted by women very few women manage to get to the

leadership role in this sector, and most of these women – especially the ASHA workers continue to work under non-permanent employment conditions. Further women perform particularly backbreaking and repetitive and challenging aspects of many occupations including among coastal community, and plantation and cashew industry (for example). While comprehensive studies on women in these and other industries are being done the findings are yet to find an impact on health policy, and the design of health care system components to support the occupational health of these groups.

### **Infertility**

Studies on the treatment pathway chosen by couples for the treatment of Infertility show that most couples choose modern medicine / allopathic services for the initial treatment but migrate to other systems after the initial consultation and treatment. Overall, couples seek care from an average of 11 centres, with most successful couples using at least 4 centres / providers. The main reason for shifting centres is the cost of treatment. While the cost is very high in private sector, it is quite substantial even in the public sector. Further, a significant proportion of those advised definitive treatment like IUI / IVF did not complete these procedures due to cost, and if male factor infertility was the cause, ART treatments were refused due to fear of use of donor sperm. The overall scenario that emerges is one in which there is demand for services of modern medicine, but a shift to range of treatment options due to cost and gender related factors. The constant trying to achieve a pregnancy, under various socio-economic stress and in the situation of gender hierarchies leads to high levels of stress among women approaching health services for this treatment. It also creates alternate pathways of care, making couples consume unauthorised formulations available in the market putting their health at risk.

To evolve into a comprehensive and gender transformative health system, it is essential for the health system to ensure that couples and especially women receive rational, ethical, and non-exploitative care for infertility. This is probably especially important in Kerala where we have reached a low TFR. This should include:

- Increasing general awareness about the causes of infertility and the definition and conditions under which medical treatment will benefit the couple. In other words, the importance of waiting for at least one year of having tried to conceive before going for treatment and other similar messages need to be widely circulated.
- It is important to add these messages to what is given to adolescent girls in schools and in evolving programs in colleges too.
- It is important to talk about male infertility and ensure that women alone are not burdened with the need to undergo investigation and treatment.
- It is important to expand the services in the public sector, at local levels, with comprehensive referral to higher centres to establish best practices and ensure reliable options for couples who will have to rely otherwise on the private sector which is largely unaffordable.

- It is important to define the minimum standards for infertility services – including especially the provision of adequate counselling for couples seeking treatment as to what is a rational approach to treatment and what to expect etc.,
- Options for financial protection for these services need to be explored – especially as it is extremely costly even in the public sector.
- Looking into other innovative ways for offering treatment viz., lesser number of cycles or induction protocols for appropriate people who cannot afford treatment.

Key areas for focus in the 14th 5YP period would include:

- Sustaining the gains in MMR while ensuring that the inequity among different groups is eliminated.
- In addition to technical interventions exploration of expanding birth companion programs and midwife led birthing units should be explored as per national policy.
- Increasing male involvement in contraception.
- Focus on reduction of unnecessary LSCS operations. This will include strategies focused not only institutional mechanisms and incentives including audits, health professional oriented as well community oriented interventions.
- Comprehensive mental health interventions include suicide prevention and reduction. Further, assessing the ongoing programs for gender based violence prevention and further strengthening them.
- Focus on nutrition – with programs to address the double burden of malnutrition and anaemia and at the same time obesity and NCD risk.
- NCDs have radically different consequences for women and their families in LMICs than for those living in higher resource settings. In settings constrained by poverty, limited health infrastructure and human-resource capacity, women are far less likely to access timely, adequate or affordable diagnosis and care. As a result, these diseases are often detected at a late stage, increasing the likelihood of largely preventable, premature death. In a study to find the NCD risk factors in Kerala abdominal obesity was higher in women (72.6%; 95% CI 70.7 to 74.5) compared with men (39.1%; 95% CI 36.6 to 41.7). The interventions should include programs for early detection of cancers among women like breast cancer.
- Programs for facilitating the physical activity of adolescent girls and elderly are being put forward. There is a cultural barrier that restricts physical activity among adolescent girls and elderly women. In coordination with the physical medicine and community medicine departments of medical colleges culturally appropriate exercises and environments need to be designed for the community. Locally appropriate adaptations can be made. It can be incorporated into school health programs for adolescent girls

## **Scheduled Tribes Health**

### **4.1 Scheduled Tribes Health**

The Scheduled Tribes community continue to have some of the worst health indicators in the state. This gap is revealed even in the latest round of NFHS. While the various health

related achievements of Scheduled Tribes in Kerala may be better than Scheduled Tribes in other parts of the country, their poor achievement in the context of a health system that has achieved so much for the general communities is a cause for concern. Previous efforts to address the situation in the Scheduled Tribes community include – the construction of health care institutions and enhancement of their capacity, deploying mobile medical units to enhance coverage and outreach, designing comprehensive insurance programs that covers all direct and indirect costs, specific projects to deal with conditions like sickle-cell anaemia, a number of community based nutritional programs and programs that include the Scheduled Tribes community in frontline health work – through the oorumithran program, or settlement based ASHAs.

A careful reading of all these programs show that they seem to focus on vulnerability and the consequences of illness. While there has been a significant increase in the investment in infrastructure in the Scheduled Tribes areas (and especially in Attapadi) key areas of concern are:

A reading of the literature focusing on that published after 2015 shows mixed outcomes. Studies looking at access to services related to MCH (ref), the completion of TB treatment and adherence (ref) and statistics on Infant mortality rate in Attapadi – all showed that the outcomes among the Scheduled Tribes communities studied are as good as or are comparable to mainstream averages. However, as the studies on TB and reviews of the Attapadi Package (ref) show, these ‘normal’ outcomes have come at great cost and huge system wide efforts (ref), and at least from the responses from Attapadi are concerned included various levels of coercion (Personal Communication).

However other studies, especially of nutritional related outcomes – including Anemia (ref), Malnutrition (ref) and more comprehensive indicators such as Human Development Index and indices of Deprivation (refs) during the same period continue to show severe gaps between Scheduled Tribes communities and mainstream communities. Studies done during this period continue to highlight the impact of the unresolved root conditions of land alienation as contributing significantly and structurally to the fragility and vulnerability of Scheduled Tribes communities. These studies are compounded by studies that show that despite public health and service interventions – their vulnerability to exploitation to middlemen and an exploitative market and their inability to benefit from the secondary sector and tertiary sector boom in Kerala economy ever since the mid-1980s has meant that remain in dire poverty and increasing vulnerability.

More recent studies showed the extent of alienation of some of these communities from the health system, however well-meaning and committed the intentions of the system are (ref). Studies also highlight the issues with governance – highlighting the falsification of reports emerging from these areas (ref).

A continuing sense of alienation within the community (reference Sunil 2020). Other key findings from this research include:

- A centralization of services at a few well-developed medical institutions rather than an effort to decentralize resources to subcentres and Ooru level – this is especially given the significant terrain related issues. Research projects as well as feedback talk about the long distances that need to be traversed to access necessary services. This of course acts as a huge disincentive – despite the provision of free transport.
- Feeling culturally marginalized – not only due to the language spoken, but also to the stigmatization / stereotyping by health care workers and health system, as well as the lack of respect for cultural practices.
- A continued victim blaming discourse with regards to their “laziness” and “addiction”. While the use of Alcohol and the increasing dependence on Community Kitchens is well documented – most discourse seems to be victim blaming in nature rather than seeing these behaviours as reflecting the deeper structural determinants of health – which in the case of the Scheduled Tribes is a lack of access to land, forest and diversified livelihoods. This attitude and its attendant framing of such problems as law-and-order issues / command and control issues basically lead to further alienation of these marginalized communities from the health system.

Thus, in summary – while health system interventions have been effective under great odds to create or lead to specific targeted outcomes, in general the structural poverty and continuing fragility only serve to create a sense of alienation and gap between the community and the health system.

In this situation, the health department can take the leadership in assuring “Cultural Safety” of the community and ensuring that its staff are “Culturally competent”. Some specific interventions include:

- Emphasis on activating sub-centres and Ooru level health centres / resources.
- Ensuring that all frontline workers are from the local communities – this will ensure availability and accessibility to the community.
- Participatory auditing of the various services – through the lens of cultural safety and bringing about design modifications.
- Ensuring the development of participatorily evolved process, outcome and impacts indicators of various programs. Ensuring that every program is independently and participatorily assessed.
- Beginning a process of Health Impact Assessment of various interventions of other departments – specifically from the angle of social and structural determinants of Scheduled Tribes. For example, it has been shown that new clearing of forests could be a key risk factor for KFD outbreaks. While the forest clearing is being done / is under the regulation of another department – the impact of this in terms of KFD outbreaks is on the most vulnerable of the local populations – invariably the Scheduled Tribes community (ref).

## **Scheduled Castes**

The disaggregated statistics, including the latest round of NFHS which was just released continued to show that among the various groups in Kerala – while the Scheduled Tribes community consistently fare the worst, the Scheduled Castes continue to fare the worst among the non-Scheduled Tribes groups. This shows the persisting disadvantage along the axis of caste that persists in Kerala society.

While there are many statistical analyses of such disadvantage over the years, there have not been systematic analyses of the various social mechanisms that operate across the life-course that result in this persistent disadvantage faced by Scheduled Castes in Kerala, at least in the mainstream published public health literature.

The literature available does however show that despite the spaces, especially since the implementation of decentralized governance while theoretically open and inclusive, continue to exclude Scheduled Castes and other marginalized groups from taking active part in deliberations and decision making. Repeated reference to the involvement of Scheduled Castes and Scheduled Tribes in these spaces as beneficiaries – point to the instrumental nature of their involvement.

This working paper calls for a comprehensive study on the persistent disadvantage of the Scheduled Caste community in Kerala over the years. Further, intersection of caste, gender and class need to be explored – especially in the context of Scheduled Caste women in particular occupational groups like cashew industry for example occupying / performing the most precarious and back breaking aspects of the work – for the least remuneration. Further, these women are also invariably excluded from trade unions and thus active agentic decision making that is shown repeatedly to be one of the most important determinants of occupational health.

## **Elderly**

### **4.2 Elderly care programmes in Kerala**

India stands to become an aging population in the coming years with 8.1% of the population above 60 years of age as per 2011 census. Kerala is aging more rapidly with 12.5% of population above 60 years of age (2011 census) and is expected to grow by 2.3% % every year. As of 2021, around 20% of the population in Kerala is above 60years. Owing to the ‘feminisation of ageing’, among those above 70 years of age, around 70% are widows. Then old age dependency ratio of Kerala is also high at 19.5% compared to 14.2% of India. Declining fertility, reduction in general and infant mortality and increase in life expectancy have contributed to this phenomenon across the globe. The aging population is also a challenge to the government as they have to spend more on old age pensions, health care and social benefit programmes for the elderly.

The elderly programmes require a three-tier approach: the household, institutional and community. The household structure changing to nuclear-families which along with migration of younger generation outside state seeking better prospects, has put a strain on elderly care as they largely depend on family and family networks for domestic needs.

Hence the state and society have to share the responsibility for caring and providing for the elderly.

#### **4.2.1 Present programs targeting elderly:**

National Program for Health care of Elderly (NPHCE) is implemented through government health facilities to provide promotional, preventive, curative and rehabilitative services in an integrated manner for the elderly. NCD/Geriatric clinics are conducted weekly in primary health centres along with Palliative care services, as part of the program. The program also provide financial grants to upgrade the infrastructure of primary health centres to medical colleges, including setting up of geriatric ward and equipment.

‘Vayomitram’ is a project implemented by Kerala Social Security Mission jointly with local self-governments for providing preventive and curative healthcare for older people above 65 years through ‘mobile neighbourhood clinics’ with free medicines, palliative and counselling services particularly in the urban area. These neighbourhood clinics goes beyond merely providing health care services in a decentralised manner and serve as venues for the elderly to gather and build their social networks which is lacking in the weekly NCD clinics conducted through Primary Health centres in rural areas. The new ‘Aardram mission’ implemented in health department of Kerala for revamping the primary health sector is a step forward in changing the functionalities of primary health centres which have included guidelines implement the same in an elderly friendly way.

The ‘Sayampabha’ home project by Social Justice Department, Kerala provides day-care facilities in co-operation with local self-governments. Around 70 such centres are currently functioning. These day care facilities provide an opportunity for the elderly people to mingle with people of their own age and participate in group activities. ‘Pancharakkootam’ is an initiative from Palliative care department of health services for providing interaction between the elderly and the pre-primary children from ‘Anganwadis’ in such day care centres.

Another novel initiative is ‘Smruthipadham’ (Kerala State Initiative on Dementia), a public-private partnership program by Department of Social Justice and Alzheimer’s and Related Disorders Society of India (ARDSI) for providing care for dementia and other cognitive disorders.

Many civil society organisations and NGOs have also started initiatives for providing primary to palliative care services for the elderly. Kudumbasree, a women-oriented mission works closely with government and prioritises women in the work network, which encompasses elderly women. ‘Harsham’ is a geriatric project run by them to provide a helping hand with the everyday tasks that is often difficult for the elderly, thereby offering companionship and a sense of purpose back into the lives of older people. Home care services including bathing, bed making, helping with common exercises and physiotherapy, wound dressing and oral administration of drugs are provided as part of the project.

There are various palliative care programs run by CBOs and NGOs in addition to

government run palliative care program through health institutions which provide out-patient and home care services for the elderly.

'Ashwasakiranam' is a monetary assistance program to give financial support to caregivers of physically and mentally disabled elderly in BPL families. The Social Justice department also run several old age homes and provide care givers to old age homes for catering the elderly.

#### **4.2.3 Vaccination Policy for elderly**

Kerala has the largest proportion of elderly in India (16%; National Statistical Office). Preventing diseases in elderly should be area to work on.

Communicable diseases like influenza and pneumonia are the fifth leading cause of death among elderly persons. In India, because of many reasons, preventive care for elderly persons is often neglected (ref). Age-related changes of the immune system contribute to increased incidence and severity of infections in the elderly. Vaccination is the most effective measure to prevent infections and vaccination recommendations in most countries include specific guidelines for the elderly. Vaccination against influenza and *Streptococcus pneumoniae* is usually recommended for persons with underlying diseases and for the elderly with heterogeneous age limits between  $\geq 50$  years and  $\geq 65$  years. Some countries also recommend vaccination against herpes zoster. Several vaccines are recommended for all adults, such as regular booster shots against tetanus/diphtheria/pertussis/polio. Most currently used vaccines are less immunogenic and effective in the elderly compared to younger adults. Potential strategies to improve their immunogenicity include higher antigen dose, alternative routes of administration, and the use of adjuvants, which were all implemented for influenza vaccines, and induce moderately higher antibody concentrations. Research on universal vaccines against influenza and *S. pneumoniae* is ongoing to overcome the limitations of the current strain-specific vaccines. Respiratory syncytial virus causes significant morbidity in the elderly. Novel vaccines against this and other pathogens, for instance bacterial nosocomial infections, have tremendous potential impact on health in old age and are intensively studied by many academic and commercial organizations. In addition to novel vaccine developments, it is crucial to increase awareness for the importance of vaccination beyond the paediatric setting, as vaccination coverage is still far from optimal for the older population (ref).

#### **4.2.2 Palliative care:**

Kerala's system offering palliative care to the incurably ill, elderly and the dying is considered better than most of the other regions in LMIC. Kerala was declared its first Government policy in 2008 outlining the role of government agencies and the public health system. It also listed targets, supporting documents/ guidelines by LSGD and Health Department followed, LSGD order making it mandatory for LSGI to set apart funds for Home based Palliative Care in 2014 and a revised policy in 2019 outlining extension of services to Medical Colleges and including palliative care in the purview of community medicine.

Presently there are a total of 1600 palliative home care units in the state, 1000 of them

run by LSGIs and linked to PHCs. Palliative Care patients are included in regular health services data. Home care is managed by community nurses, supported by ASHA and local volunteers, supervised by PHC medical officers with funding by LSGI. Medical officers from other systems of medicine are also involved in care in some of the LSGI. Secondary care units in Taluk, District and General Hospitals (Physiotherapy, lymphoedema management, inpatient care). Further, training units in District and General Hospitals. Three of the NGO run units have training centres. Two of them recognized as WHO Collaborating Centres.

In general, it is accepted that services have been upscaled to reach every panchayat. In such a scenario the outstanding issues include:

1. Focus on Standards and quality of care: Type of patients registered for palliative care and quality of services offered vary from unit to unit. Clear guidelines need to be issued and an audit system for improvement established
2. Majority of PHC medical officers supervising care are untrained. A system of in-service training for medical officers including those from other systems of medicine need to be in place. Timeline with targets need to be set.
3. Other programs targeting similar population as palliative care (health care projects for the elderly, differently able and chronic mental illness) currently operate in different water tight compartments with no exchange of information between them. A broad platform for all these programs will help in preventing duplications and avoiding unnecessary hardships in accessing services.
4. The core work force of community nurses is still in contractual jobs. Their training and job conditions need to be institutionalised

Some issues that can be taken up specifically include:

- Focus on adequacy of Pain management both in institutions and in community settings.
- Towards this protocols / guideline for adequacy of pain relief and its assessment can be developed and implemented.
- Key bottlenecks like licensed practitioners (to prescribe morphine) to be identified and rectified.
- This experience be used for the development of interventions for other dimensions of quality.

### **4.3 Coastal Communities**

Even after adjusting for well recognised factors such as age, smoking, and deprivation, there remains a “coastal excess” of disease. Life expectancy (LE), healthy life expectancy (HLE), and disability free life expectancy (DFLE) are all lower in coastal areas and the Standardised Mortality Ratios (SMRs) for a range of conditions, including preventable mortality, are significantly higher in coastal areas compared with non-coastal areas. In Kerala we have particularly seen that during the COVID times, this community was more vulnerable to

the disease because of the lifestyle they follow. Interventions to control COVID were also most challenging in this community, as witnessed by the rather militarised response in Thiruvananthapuram for example.

Like the other marginalized groups described above while there is lot of literature that documents the disparities and gaps in health achievement among this community. This community like many of the other communities described above also faces stigmatization when they access health care services. Like the Scheduled Tribes communities – the coastal communities face multiple risks including from land erosion, fragile livelihoods due to mechanization and lack of land due to intersections with the CRZ regulation.

This complex set of circumstances then add up to cause persistent disadvantage for this community despite their proximity to urban centres and the concentration of health care services in these urban centres.

### **Proposals for the 14th Five-Year Plan**

Like in the case of other communities one of the first important interventions is to develop a systematic data base of health and related outcomes and determinants. Given that the coastal community is not a routine classification in most national and routine reports – and forms a unique category in those states with a coastline, it is suggested that the Kerala government evolve strategies to monitor and evaluate health of this community. One possible intervention could be the setting up of registries in such groups where routine data is not available.

Other possible interventions include:

- Interventions in Cultural Safety which address the stigmatization faced by individuals belonging to this group.
- Comprehensive surveys to assess the occupational related issues among men and women and among different types of fishing and the various activities involved in fish processing. Linking these surveys with services in public sector health facilities in order ensure that the services available are relevant to the community.
- Comprehensive and participatory assessment of the impact of climate change and land erosion and exploring mitigation strategies that are culturally and social acceptable to the community.
- Comprehensive programs to tackle the issue of NCD – that go beyond screening camps to include a promotive, preventive and active monitoring of patients to ensure good control.

## **4.5 Disability**

Differently abled

Programs in the 13th FYP

4.5.1 .Physical Medicine and Rehabilitation (PMR) units provide services to locomotor disabled

providing them investigations, medical care, rehabilitation, physiotherapy and appliances

like elbow crutches, aluminium tripods etc. and therapy like ultra sound therapy, interferential therapy, short wave diathermy, laser therapy etc. There were 8 limb fitting centres facilitating rehabilitation therapy and supply of artificial limbs, prosthesis and appliances to patients coming to limb fitting centres. Patients were provided slings, braces, callipers, artificial limbs and MCR chapels from these centres.

4.5.2. Rehabilitation for mentally challenged patients namely 'Pakalveedu' was a good initiative during this period. Day care centres were providing work with wages for psychiatric patients. It included peeling unit, paper cover making unit, soap making unit - Provide soap for patients in MHC, Thiruvananthapuram, Weaving unit, Bread making unit, Tailoring unit- male and female rehabilitation ward to provide recreation to patients and Door mat making unit

### **Proposal for the 14th FYP**

4.5.3. Evaluation of the functioning of the newly created PMR units. Such units should be expanded to all Taluk level hospitals taking inputs from this evaluation. A quick qualitative assessment may serve the purpose. If there are deficiencies of PMR trained personnel the personnel with orthopaedic speciality /any MBBS doctor can be trained to provide the essential rehabilitation services. Disability certification for obtaining various benefits from the government schemes also require certification by medical board and there is a long waiting for this. Perhaps this could be facilitated by such professionals. Such an endeavor has started in Punaloor Taluk hospital. Such units will also be should be given the responsibility to design age, gender, culture and morbidity profile appropriate physical activity for vulnerable communities.

4.5.4. Pakaveedu – Evaluation of the program for further improvement in quality and need for starting more such centres is envisaged in view of the burden of the challenges faced by the families of mentally challenged patients

In general, while we notice that approach of government to marginalized groups has been the design and development of specific programs targeted at them, in general this working paper encourages the government to shift from a purely targeted approach towards a more holistic approach of focusing on the gradient rather than the outlier. As detailed earlier in the section on social determinants of health and inequity a general set of steps in this direction would include:

- The systematic collection of disaggregated data not only on coverage and outputs but on outcomes and process indicators.
- The inclusion of individuals and groups in key aspects of decision making at all stages of program development and evaluation.
- A reflection of the health system that focuses on ways the system itself discriminates against or excludes those marginalized in the general development model.

- A dialogue led by the health department to identify and engage with the various inter-sectoral aspects of health and an attempt to forge an All of Government approach to inequities and marginalization in which Health impact assessment of policies or the concept of Health In All Policies is central to moving forward.

## CHAPTER 6 FACILITATORY STRUCTURES

This chapter on facilitatory structures discusses the key facilitatory structures and mechanisms that need to be put in place to enable the already developed systems and institutions in Kerala to meet the evolving challenges as listed out in the introduction and background. The discussions in the various sub-groups pointed out that while there are several programs and interventions that have been planned to tackle a range of issues over the year, a key aspect is that many of these interventions / institutions and processes have not delivered their promise. This was highlighted as a particular concern of the members of the working group. The COVID crisis gives further opportunity to pause and re-focus not only more of the same – but on moving paradigms. As discussed in the various sub-groups of the working group on health the following emerged as key facilitatory structures that need to be put in place and would be the focus of the 14th Five Year Plan. These include the following:

- Creating a facilitatory environment for research.
- Broadening the type of research that is supported by the government to include newer fields of research like Health Systems research, Health economic research and Health Technology assessment.
- E-health
- Surveillance
- Intersectoral Action
- Networking of institutions
- Administrative and Legal mechanisms

### 5.1 Creating Facilitatory Environment For Research

The increasing appreciation of the complex nature of health systems points to the importance of going beyond a linear and simplistic paradigm of program design and evaluation. Acknowledging complexity implies acknowledging multiple interlocking and co-producing dimensions / determinants of health. Designing programs in such contexts demand more participatory and iterative, multi-disciplinary processes. In such a paradigm every policy or program evolves participatorily, undergoes pilot testing in diverse settings, undergoes economic evaluation in field settings before being expanded and undergoing further modifications. To adapt to this paradigm which envisages the health system to transform into a Learning System – experimentation and knowledge generation from Randomised Controlled Trials is only one of the many sources of knowledge and evidence upon which policy is based. An appreciation of complexity demands multi-disciplinary and mixed-methods research in order to study the various determinants – in other words the need to incorporate health policy and systems research and health economics in a more prominent and systematic way.

While Kerala has created several Institutional mechanisms for the conduct of research the research output as well as the translation of the knowledge generated into local policy is limited. This was particularly acutely visible during the COVID pandemic. Such institutions include State level institutions like SMRB, MRU at medical colleges and RHTC, UHTC as well as centrally sponsored schemes like MRHRU. In addition to these, mechanisms like constitution of PEID cells in different medical colleges to track outbreaks are some of the institutions developed purely for research. Incentivising high quality research calls for creating a facilitatory ecosystem in addition to the institutions themselves and rewarding / encouraging research output. Apart from the conduct of research, this eco-system includes the need for avenues for application and translation of the emergent research into policies, and for policymakers in turn to see the benefit of applying research findings to decisions they make. Further there should be mechanisms through which “real world” problems could be posed to researchers and guide their research.

Such a facilitatory environment may consist of some or all the following:

- Mechanisms by which policymakers and program managers at all levels of government can pose problems to researchers. Thus, mechanisms that enable LSG institutions, district program managers, state level managers and policymakers to interact with and pose questions to researchers may be considered.
- Once research question and proposals are ready, regulatory vetting including by scientific and ethical review boards must be facilitated, constructive and foster critical thinking. All proceedings should be transparent, and all protocols approved should be encouraged to be published or deposited in Government repository. Further, robust, transparent and independent grievance mechanisms should be developed.
- Once approved researchers must have access to funds and data. Various schemes for funding research are proposed. These include decentralization of the SMRB to institutions where institutional level committees can make decisions to allocate small grants or. Seed grants upto 10 Lacs. Proposals seeking higher funds may be referred to SMRB.
- DATA - One of the most important facilitatory requirement for any type of decision making is data. This data must go beyond the data routinely collected to enable the management of programs - that is mainly output related data - and should be designed to inform programs with regards to key policy values like equity, quality and effectiveness and cost-effectiveness. Further we need to move from a data and information system that is retrospective looking to something that is predictive in nature. Predicting not only risk but also events and trends. For this not only do we need to develop appropriate platforms but more importantly we need to focus on design and appropriateness for reaching the objectives. Government must develop systems that not only generate routine data for health program management, and data for prediction of risk, outcomes, and distributional parameters, but also enable the drawing of data from different data sources (non-traditional health related data)

like meteorological data, google mobility data etc., in order to develop comprehensive models for decision making.

- ♦ Data collection must be from innovative mechanisms like Cohorts, registries and biorepositories for biological and bio-medical research and Deep Learning sites for public health and implementation research. This includes the adoption and adaptation of networks of hospitals generating and using data like has been demonstrated by the National Cancer Grid.
- ♦ Data once generated - must be in public domain, and access to such data needs to be streamlined after ensuring that the data is adequately anonymised, the data is not monetised, and analysis is shared with and ultimately benefits the health system. Mechanisms to streamline application for and management of funds from other funding calls from national and international bodies may be encouraged. Each medical institution should have a research support unit to manage applications and manage reporting and other regulatory requirements.
- ♦ Similarly networking and multi-centre and multi-disciplinary studies are to be encouraged and mechanisms should be developed.
- In addition to above institutional mechanisms the following may be considered:
  - ♦ While student conferences are being arranged, active efforts to invite leading researchers from other parts of the county who have not only published, but whose research has enabled the solving of real-world problems and/ or contributing to policy.
  - ♦ Policy making at all levels from LSG to state health department to make the presentation of published high quality evidence as mandatory for any policy.
  - ♦ The government may facilitate publication through funds for APC as party grants and/or developing journals that are registered, peer reviewed and indexed.
- The government may form Department of Health research to coordinate and facilitate research activities in the state. This department should encourage clinical research, Health Policy and systems research, Health economic evaluations, implementation research and Health Technology Assessments. SMRB may coordinate clinical research while SHSRC may coordinate HASR, implementation and HTA. Further the other institutions can be networked to support each other. The SMRB and SHSRC can be modified in such a way to bring in prominent researchers from Kerala and other states to maintain the highest standards and enable cross-learning (see detailed discussion below).
- Research has already been incorporated into UG & PG medical education. The curriculum and assessment criteria can be regularly updated to maintain the highest standards. Department of Policy at KUHS and centres at AMCHSS, and other

Central and autonomous institutions can be involved in mentoring this process and capacity building.

- One key aspect of the facilitating environment is the proactive involvement of the community in all stages of research. This should include patients and /or their caregivers. There are several international examples we can draw on.

### 5.1.1 Research Institutions

#### State Board of Medical Research

Research and publications have become mandatory for faculty promotions. This has created research awareness in medical education. In last 7 years Research awareness and aptitude has increased amongst faculty. Currently there are various research options for research funding in medical education through different agencies like STS for UGs, University Thesis, SBMR, ICMR, Adhoc projects ICMR etc. There is a State Board for Medical Research (SBMR) constituted and functioning for the promotion of research activities in government medical colleges. The effectiveness and utilization of the system need to be assessed periodically. It is imperative to study the bottlenecks, the hurdles in getting financial sanction for various projects and the quality of research and their outputs and relevance.

**The following are some of the key aspects of suggestions with regards to these institutions:**

- **Periodic assessment, regular monitoring systems and amendment of SOP of SBMR including reconstitution:** The SOP of SBMR shall be periodically amended and the upper ceiling for the research grant could be enhanced to a maximum of 20 lakhs. It is proposed to bring in various categories of grant for various types of research such as clinical research, clinical trial, epidemiological studies, and translational research and the types of institutions covered. Monitoring could include the mandatory listing of all research output and publications from funded research.
- **Decentralised approach in Fund allocation for research proposals:** The SBMR could be decentralised with fund allocation and project approval being vested on the powers of the head of the institution. The entire process should be through the Research Advisory Committee constituted in each institution.
- **Expanding scope of research to include Student Research Program, and health service institutions hosting NBE exams:** The Research has to be inculcated from the formative years of profession and in order to achieve the same, apart from curriculum implementation, a Student Research Program (SRP) under SBMR may be considered and around 15% of funds shall be allocated for student projects. This can be done in line with STS under ICMR.

### 5.1.2 Development of Health Research Department at the institutional level:

Development of a specific Health research department in each academic healthcare institution with clinician-researchers, public health experts and bio-statisticians and dedicated project admin staff to foster and coordinate the research activities and capacity

building through regular training in research methodology and clinical statistics shall be considered. The department shall be conceptualised to provide support at all stages of research including material and conceptual and regulatory.

Each institution shall create a research hub where academia, students, and researchers shall communicate, collaborate, and develop proposals and conduct research. The hub in the form of an interdisciplinary research lab shall be extended to all government medical colleges. The scope of such hubs may be extended as a facilitator unit for inter-institutional collaborations.

Development of biobanks or bio-repositories shall be considered in all Government Medical Colleges and autonomous institutions for future researches and they shall be interlinked for transfer of materials through a protocol. Currently there is only one biobank in public sector established in Malabar Cancer Centre. Each institution shall collect samples of a specific tissue or disorder/group of disorders so that duplication can be avoided. A committee of experts shall develop the plan for the same.

This department should also investigate the research being conducted by Nurses and other paramedical staff and encourage and support such research.

There is a perennial reluctance towards international collaboration. This shall be dispelled. For international collaborations, the government shall create a facilitator environment and the Kerala University of Health Sciences may act as a nodal agency for the same. Data and biological material sharing with research organizations and institutions outside the country needs the approval of the Health Ministry's Screening Committee and ICMR guidelines in this regard shall be followed. For approvals to enter into research and academic associations with universities and institutions abroad, a specific quick approval system shall be developed where the administrative hitches could be avoided. International collaborators work under specific timelines and the tardy and cumbersome file movement across the nonmedical clerical system of the government invariably and predictably negates such possibility.

### **5.1.3 Academia-Industry network and Public Private Research Collaboration and the participation in various networks:**

The linking of academic departments with service providing public and private institutions should be encouraged within the limits of the public good and equity. While a range of collaborations should be encouraged – these should reflect the commitment of the government to equity and social justice and be transparent, open source based and evaluated at regular intervals. There should be encouragement and facilitation of participation in various multi-centric interventions and research (for example the National Cancer Grid initiative).

### **5.1.4 Establishing Model Rural Health research units (MRHRUs)**

During the 12th plan period (2012-13 to 2016-17), government conceptualized and introduced a central sector umbrella scheme of developing infrastructure for promotion of health research across the country. The umbrella scheme has 02 sub-schemes namely

(i) establishing Multidisciplinary Research Units (MRUs) in government medical colleges/ research institutes, and(ii) establishing Model Rural Health Research Units (MRHRUs). The scheme was extended from 2017-18 to 2019-20 to be co-terminus with the period of 14th Finance Commission Period. Subsequently, the Department of Expenditure vide its notification no.42(02)/PF-II/2014 dated 10.01.2020 approved an interim extension to all ongoing schemes till 31.03.2021 or till the date of recommendations of 15th Finance Commission came into effect, whichever was earlier.

We could establish such units in the rural health training centres of Medical Colleges [2].

### **5.1.5 Kerala health registry:**

Apart from disease specific registries for focused research, a broad Kerala Health Registry may be conceptualised for public health information and updates based on e-health records

## **5.2 Reimagining Public Health Surveillance**

Sources of Data and Information in the Digital Age

In addition to an enhancement of the traditional public health surveillance to include components of One health – the many unique aspects of the challenges facing Kerala already described in detail in the introduction, we need to invoke a paradigm shift in thinking about surveillance.

The key shift in direction envisaged in the 14th Five year plan is from the present focus on routine HMIS and surveillance data that essentially focuses on outputs and rarely on outcomes and process indicators, with little or no feedback to lower levels of governance and an almost unidirectional flow of data, to move to a surveillance system that tracks and consists of:

- Multiple dimensions of health
- Multiple of axes of inequity and thus is disaggregated based on local context.
- Multiple sources and types of data
- Multi-disciplinary analysis of data
- Multiple loops of feedback between different layers of the system

Public health surveillance is the epidemiological foundation for modern public health. It is based on the continuous and systematic collection, analysis, and interpretation of data. This surveillance data is envisioned to provide insights into the underlying complexities and patterns of disease prevalent in the community and also reflect whether the public health interventions undertaken are effective. Though a lot of information is being generated through the conventional public health surveillance system, this information has many inherent limitations such as those pertaining to the nature, quality, quantity and context of the information thereby failing to add value to the generated information.

The data science revolution shows promise in adding value to data generated from the routine health information systems through linkage, integration and contextualization of large data through sophisticated, novel and innovative methods. This approach also allows for newer possibilities through multidisciplinary collaboration using unconventional and

novel data sources. For example, satellite imagery, remote sensing data, data from veterinary sciences, and even data on instances of animal-human contact can be used to better understand the patterns of zoonotic diseases in India taking the One Health Approach. Climatic data on rainfall and temperature, data on vector surveillance when paired with robust methods such as spatiotemporal forecasting can help predict vector borne diseases and aid in better management of outbreaks. Diagnostic and medical imaging data has a huge public health potential, like an ECG which is a widely used routine screening/diagnostic test for cardiac conditions has been recently demonstrated to predict diseases like diabetes and anaemia using Deep Learning. Similarly, an ophthalmic scan has shown promise in detecting Alzheimer's disease at an early stage. Another important source of surveillance data is the inventory control, management, and insurance claims data, which can be used to gain critical insights on the existing public health problems from a health systems and health economics perspective. Anonymised patient level data including those generated by wearable technologies when paired with the data on social determinants can reveal hidden and otherwise obscure patterns of disease occurrence and morbidity. Patient level data such as an audio recording can now be used to diagnose whether it is COVID or TB. With the ubiquitous presence of the mobile phone in every household, opportunities of telehealth interventions have become tremendous. In addition, the population's online behaviour can give key insights into the content of health information available online, the ways the population communicates about illness and their health seeking behaviour which in turn can benefit public health. These unconventional data have not been until recently recognised as important sources of information for addressing critical public health needs. It may be time to shy away from the adopted panopticon surveillance system and reimagine a more inclusive, sustainable, and equitable public health surveillance system for India.

### **5.2.1 Epidemic Prediction**

Timely epidemic interventions can prevent or control their adverse impact on human health. But prediction of epidemics is extremely challenging. Interaction between model developers and public health decision-makers should be enhanced. In the area of mathematical modelling, there has to be an established linkage between modellers who are mostly outside the medical field and public health personnel. There is limited expertise in the state on mathematical modelling of infectious diseases. The state should take an initiative to provide opportunities for collaboration with universities outside the state and country for capacity building in this area. Other challenges that need to be overcome for modelling the prediction are the non-availability/ difficulty/inappropriateness in sharing of data for making and evaluating predictions. Another reality is that there are no measures to find the accuracy of predictions. Predictions are often based on limited variables out of a number of them which actually determine the occurrence of disease. They are also based on a number of assumptions.

Surveillance needs to move beyond the diseases to risk factors of communicable diseases in order to be able to predict. Among risk factor surveillance, one component of entomological surveillance namely Aedes larval indices is the one done now, which also has scope for quality improvement. Surveillance of climate related variables are also important for

prediction. There has to be facilitatory transfer of climate related data from the meteorological department to the health department on a regular basis.

The recommendations from these evaluations can be incorporated and the process can be continued as a system of Continuous Quality Improvement

### **5.2.1.1 Proposed Implementation strategy for Kerala**

Creation of a task force at state level involving leaders from the Directorate of Health Services, Department of Medical Education, Directorate of Animal Husbandry and Directorate of Environment and Climate change– One health Task Force

#### Responsibilities

- Identification and prioritisation of diseases which require focus under “One health Approach “- Rabies, Nipah, SARS CoV2, Scrub typhus, Influenza
- Develop guidelines for functioning of district and block level units
- Prioritise research required in the area. Operational Research Committees may be constituted to call for, review and award grants for projects on One Health
- Develop a mechanism of surveillance including indicators for risk assessment
- Develop plans for response and control including vector control measures and the development of therapeutics and vaccines
- Develop indicators of climate change that can signal need for action, mechanisms for capturing the climate related changes through collaborations with India Meteorological Department (IMD) is an agency of the Ministry of Earth Sciences of the Government of India. meteorological department, sharing this data required analysis by the health and animal husbandry
- Develop material for training/ Conduct of workshop focussing on Skills to be developed in the area of One health, at various levels
  - o Medical and Public Health Professionals
  - o Veterinarians
  - o Medical Environment and Veterinary schools ( to be part of the competencies to be developed in training of public health and infectious diseases)
- Develop mechanisms for Surveillance of Antimicrobial Resistance at the human-animal- environment interface and food chain supply
- Strengthening of laboratory networking within and between the sectors
- Initiate the observation of One Health Day on November 3rd every year
- Liaison with other departments like education department, to develop interest among school students for innovative projects
- Evaluate the effectiveness of interventions

At district and block level, one health teams shall be constituted. They can develop local specific action plans for implementation. In addition they will implement the strategies adopted at the state level in a coordinated manner. Local specific implementation research proposals can be submitted to the state for approval and conduct.

## Expected Outcomes

- Improvement in surveillance systems
- Better understanding of disease risk—through shared control and detection efforts
- Better diagnostic laboratories
- More skilled human resource in public and animal health sectors
- Reduction in disease burden
- Increases public health efficiency and cost effectiveness

Process and Outcome indicators to monitor these shall be developed and it will be part of the evaluation of the program. Given below is a framework for evaluation of One Health interventions which may be adapted to our context.

### 5.3 Health Systems Research

While most of the research focus is on creating evidence for the efficacy of an intervention, increasingly there is recognition of the importance of evidence created for the implementation and optimisation of interventions in different contexts to optimise effectiveness. This calls for a concerted effort to invest in the broad field of Health Policy and Systems Research.

While an innovative program or service can show promise in specific settings under the leadership of committed individuals and organizations who pioneered the innovation in the first place. The process of implementing the program at a larger scale and in diverse setting is a complex and long drawn and iterative process. Health Policy making in many cases is limited to the recognition of these innovations and their implementation and up-scaling without the research and monitoring back up required to evaluate the effectiveness and Strengths and Weaknesses in different settings. Most programs require subsequent modifications and adaptations to suit local conditions and these steps need funding and long-term support beyond the acute attention many new projects get in the first few years of their implementation.

Ideally all new programs and interventions and technologies being proposed to be introduced should have a good dossier on the evidence not only of efficacy but of implementation effectiveness - that is effectiveness in routine field settings. In addition, steps should be done to undertake economic evaluation and or Health Technology Assessment. What is important that all such assessments should consider all feasible alternative programs / designs before introducing anyone. In addition to a general assessment, given Kerala's commitment to health equity and justice, data needs to be collected for the distributional effectiveness of the program and its impact on health inequity. Further as rule new programs need to be pilot tested in diverse settings with proactive concurrent research on both implementation bottlenecks and unexpected effects due to interaction of program components with diverse settings including institutional logics and motivations. Further detailed participatory evaluations should be implemented by multi-stakeholder and multi-disciplinary teams. In other words, the Health Department's commitment to introduction of innovative schemes needs to go beyond their recognition and implementation and needs to be adopt a comprehensive evidence-informed and evidence- generating learning

approach to their implementation - this calls for sustained funding not only of the program but more importantly of research both concurrent as well as mid-term and end-term (in terms of 5-year planning cycles).

### **5.3.1 Health Technology Assessment**

Though health technology assessment (HTA) has been buzzing in the world of healthcare for more than four decades, it is one of the most nascent areas of research in the country. High-cost treatments and diagnostics need to be assessed from the point of financial and social relevance. The development of low-cost treatment which is as good as the expensive moScheduledCasteies need to be assessed. Often high-cost equipment is purchased and installed in government institutions and its utility in practice is often ignored. Appropriate financial allocations based on the need and utility shall be studied. Associations with IIM, NIT, Public health experts shall help in conducting HTA. The capacity building for HTA shall be initiated in health policy cells proposed in the community medicine departments. Proactive efforts to create collaborations with IIM in heath finance and WHO on HTA shall be taken. Kerala University of Health Sciences shall incorporate health economics, implementation research, and HTA as core areas in its realm of research. Regular workshops and CMEs shall be conducted to create awareness among the medical researchers. The possibility of developing high quality HTA centres shall be considered in a few selected institutions owned by Government. Drawing on the already existent Regional Centres for Health Technology assessment in AchuthaMenon Centre for Health Science Studies in Trivandrum and other resources – there is a need for the development of centres for HTA in Kerala

It is proposed that at least 3 centres for Health Technology Assessment be planned during the 14th Five year Plan period.

### **5.4 E-Health**

**In the Policy document of 13thFYP,** The e-Health project envisages an effective information technology (IT) enabled integrated framework to ensure efficient service delivery to the common people and provide a centralized database of healthcare information allowing close monitoring and control measures.. The ultimate vision is about building an integrated healthcare cloud which will hold the complete healthcare data about all the citizens in the state.

The main objectives of a e-health policy are as follows:

1. Make reliable population based health information available for mid- level public health managers at district and sub-district levels.- this information should be on service utilization as also morbidity and mortality patterns.
2. ensure that patients have access to information as regards the health needs they have had the healthcare they have received and which they are prescribed and further that they can ensure continuity in case across providers and facilities. Further this data is kept confidential and privacy is ensured
- 3 Ensure that providers have access to information to ensure better quality and continuity

of care for providers and as a collateral gain of this, also have valuable data for research.

4. Ensure that providers have to spend less time in data entry and data retrieval and use than they do currently

ensure that hospital managers and managers of health care facilities have information required for more efficient management/administration of their facilities- including both clinical and administrative (workforce management, salaries, laboratory reports, stocks and inventories, safety requirements etc.) ensure that managers of specific health programs (TB, HIV etc.) get the information they required for doing their job that data security, privacy and confidentiality are ensured. That there is data on flow from private sector as required for public health purposes and for purposes of regulation

### **Data On E-Health -Current Status**

Since the roll out of e-Health, 12 Medical Colleges, 257 PHCs FHCs, 15 CHCs, 5 District hospitals/general hospitals, one public health lab and 12 other health institutions are included. Another 301 institutions will be covered soon.

### **Recommendations**

Past efforts at having one integrated software that does everything listed above have not worked are unlikely to work.

It would be essential for a team to map the informational requirements of each set of information users- and allow them to develop the systems that suit their needs best- and knowing that it takes years for systems to develop and stabilize.

The state public health management would however specify what are the information needs that should be available to a common dashboard- and also specify the format and periodicity that such information is required, which will necessarily be less than what the program or facility manager needs. The several systems at work must be able to electronically generate and transfer such information. This requires a clear guidelines/rule to ensure interoperability of systems while observing privacy, security and confidentiality.

There are infrastructural and manpower requirements for such a network. One principle of design is that peripheral health care providers who have no data entry support should not be required to enter the same data in multiple portals or registers. - so that the time they have for patient care does not reduce. Another principle should be that no health program should have more than one IT applications/software for monitoring the program- like RCH, or NCD or health facility management.

Private sector hospitals are free to have any systems they want- as long as that system can transmit that data to the state health information portal in the specified digital format. Technical assistance to private sector to achieve this would be essential. The data required from every level should be the minimum possible- both in the number of data elements and in the frequency of reporting.

While data systems will work with health identifiers, anyone of the many choices available

would be adequate for most purposes. (aadhar, health id, smart card of insurance, ration card, etc.) However there should be no healthcare denial in a public facility on grounds of inability to provide an unique id.

1. Creation of district hubs with dedicated IT teams across all the districts who can streamline and support all the implementation issues in a particular district.
2. Vertical and horizontal expansion of the existing platform to improve the rapidity of the implementation process
3. Independent third-party auditing of the status of the work and getting creative inputs from their end for improvement of the system
4. Creation of digital archiving system for research purposes
5. Dynamic support system and feedbacking from the end user for operational quality improvement

### **5.5 Intersectoral Action**

While the term inter-sectoral action both as a term and as a key concept in the achievement of Health for ALL emerged in early 70s and rose to prominence with the Alma-Ata declaration. While there is very little systematic work on actualization of intersectoral action, and a continuing diversity of terms use, its importance for the achievement of Health for ALL as well as more importantly for action on Social Determinants of Health has remained prominent.

Kerala has been at the forefront of creating and experimenting with mechanisms for intersectoral action as well as convergence of various dimensions of development thanks for systematic and historical investment and innovation in Local Self Government. Experience catalysed by the People's Planning Campaign and continued on through decades long commitment and capacity building efforts have ensured that LSGs not only become a key platform for intersectoral action and convergence but equally become critical actors in the identification of and overcoming intersectional disadvantage. Thus, having power and financial resources at the Panchayat level has enabled numerous innovations that tackle issues of access and utilization of health care services among the marginalized communities thanks to intimate knowledge of the local conditions as well as coordinating multi-dimensional action on various aspects to address the social determinants of health.

The discussion of the working group highlighted a few aspects that could form the focus of action during the 14th 5-year period. This is based on the following understanding of intersectoral action and draws on the earlier section on action on health inequity.

Intersectoral action has been used broadly in at least three types of activities:

- The convergence of action of various departments to individuals and groups who could benefit from them. The LSG here provides contextual targeting, facilitates implementation by bridging gaps with local resources and ensures utilization and follow up.
- The term has also been used for action in which activities / interventions from other departments synchronize to act on the Social Determinants of Health. Thus for exam-

ple the Community Kitchens address by the Social Welfare Department - address the key issue of nutritional security for communities affected by lockdown and / or loss of livelihood. However, it may be pointed out that this reduces differential exposure to some extent - but does not tackle the underlying root causes of ill health. They however help in reducing overall vulnerability of marginalized groups.

- However, in addition to these type of actions - intersectoral action and the action on social determinants of health also include two other types of actions:
- Health Impact assessment of policies of other departments that identify potential health risks and pre-emptive mechanisms for redressal action. For example, the connection between construction and vector borne diseases - which not only includes the construction site as a vector breeding site due to stagnant water and rubble etc., but also the risk of migrant workers importing infections from their home states. Thus, proactive measures of vector control in all construction sites, and the provision of comprehensive health screening and free services in the language spoken by migrant workers will enable this risk to be minimised.
- The other set of actions is action on the structural determinants that lead to groups occupying particular social positions. Thus, action such as those that will enable Scheduled Tribes communities to get access to resources to ensure their traditional wholesome food basket including agricultural land, traditional crops like millets and access to forest produce is essential to ensure long-term sustainable nutrition security that preserves the dignity and wellbeing of the community - are a natural evolution of interventions that focus on temporary solutions like community kitchens.

It is proposed that the 14th 5YP period be used to initiate mechanisms of action that consolidate the first two types of action, for which there are several examples in Kerala, and that begin discussions and preparatory work for action that includes that discussed on social determinants of health.

**Some key components of strengthening intersectoral LSG action especially of the convergence and synergistic kind include the following:**

### **5.5.1 LSGI & Health Sector**

After completing 25 years of decentralisation, it is time should take steps for consolidating the gains of last twenty five years. With the implementation of Aardram Mission, more focussed interventions in health sector is made possible. Setting up of standards for each categories of health care institutions and the decision to develop one institution as district level / Taluk level/ block level and Panchayath level institutions with a standardisation criteria has brought in the initiation of uniformity in institutional development. (Earlier institutional up gradations without a standard criterion was happening and it was leading to asymmetry in regional development in health infrastructure.) In the absence of definite institutional development criteria earlier through LSGI IP buildings were constructed at many PHCs without sanctioned inpatient beds. As part of Aardram mission FHC patient friendly transformation most of this infrastructure was optimally utilised.

During earlier years of decentralisation departmental support for institutional development and comprehensive Primary health care components were meagre, and the whole responsibility was vested with LSGI. Now the convergence of top down departmental interventions with the LSGI ownership and support is yielding very good result and that needs to be continued .

Following specific interventions as part of Aardram Mission has facilitated better LSGI convergence.

1. Team training of key health staff of the institutions with the Panchayath president Panchayath Secretary and other stakeholders.
2. Govt. decision and LSGI department's order giving permission to appoint doctors and paramedical staff on contract basis at Family Health Centres.
3. Resource pooling for institutional development by LSGIs- MLA/MP/CSR funds, other voluntary contributions and coordinating local sponsorships.

**Plan Of Action For Coming Five Years:**

- Ensuring LSGI level health status report preparation, project formulation and inter-sectoral actions with the concept of “all in health and health in all policy”.
- Bringing in the role of ward members and councillors in preparation of ward health plan and its implementation.
- Further developing and strengthening activities of Ward level Health Sanitation and Nutrition Committees.
- Active involvement of ward members and councillors in sub centre transformation into health and wellness centres and for ensuring the functional components.
- Monthly / periodic LSGI level supportive supervision and monitoring of health interventions

**5.5.2 Enhancing Community Action Through Arogyasena - Moving To The Next Step**

Thus the potential of this human resource to bring changes in the community depends on the stewardship of LSG with support of Health Dept and Community. Motivated Local Self Governments in Kerala can be the key player to build community participation considering that they will be conversant with the sociocultural disparities and inequities. However lack of ownership from part of LSGI/Health sector, Lack of vertical coordination between Grama and Block Panchayatsetc. can lead to ineffective networks.

- The ArogyaSena conceptualised in Ardrum need to be consciously built up by the LSGs (Panchayats in urban areas, Municipalities in Urban areas) in their areas at the grassroot level involving the community and stakeholders in the private/NGO/allied sectors/ Civil Society organisations/Activists based on their readiness for volunteerism.
- In Municipal areas/Corporations the same may be built up involving relevant stakeholders like Residential group representatives/ retired personnel/Mahila Arogya Samitis.
- The presence of around 20 to 25 volunteers (one for 15 to 20 houses), ASHA, healthworkers, personnel of related departments at ward level (Anganwadi worker,

ADS, activists, committed NGOs) under the leadership of elected representatives of grama/block. Jilla panchayat working together with effective communication channels between them can form a cohesive group to combat health emergencies and to coordinate & promote timely activities in five domain health viz promotive, preventive, curative, palliative and rehabilitative services at grass root level. These and the existing ward level structures -ward health & sanitation/nutrition committees should function in unison with this community network to meet the health related needs of the ward.

- The ward level empowered group should ensure that the voices and needs of the unheard-minority, marginalised etc are consciously included. eg; tribal, coastal, slum dwellers etc. In case of slums, colonies apt representatives & in tribal areas, Urukootam/ Uurumooppa may be included in the ward level committees.
- Consultative committees at District and State level should be formed acting as ombudsman for critical appraisal and positive reinforcements. Civil Society organisations to be roped in at all levels.

### **5.5.3 Inter-Sectoral Action For Health Convergence And Community Involvement In Health.**

#### **Inter- departmental coordination in achieving good health.**

For bringing in the concept of healthy Tribal area, healthy coastal area, and health backward urban areas, healthy school, healthy work place etc. concerted efforts and appropriate newer coordination systems and convergence mechanisms to be developed. The current system of occasional problem oriented intervention mechanism and coordination committee meetings alone will not serve the purpose.

- At the planning board level and Govt. level, efforts for establishing systems and procedures for establishing a regular structure / system for achieving this may be considered.
- At the respective LSGI level coordination system to plan and implement programmes with the concept of “Health in all and all in Health” to be established.  
Eg; Lsgi Level Health Convergence Committee: Depending upon nature of health problems and specific social determinants of health to be addressed, related departments and stakeholders may be included in the committee.

### Other Dept. Involvement in Health

Tribal development	<ul style="list-style-type: none"> <li>• Comprehensive Tribal health Insurance scheme- Tribal dept. provide fund for additional drug, investigation facilities, transportation and food requirements of tribal patients</li> <li>• Support for development of transferred health care institution including contingency requirements.</li> <li>• Support for field level programmes</li> </ul>	<p>Need for –</p> <ul style="list-style-type: none"> <li>• Establishing a convergence system for ensuring coordinated activities of LSGI, ST development dept., Health and other depts. For addressing comprehensive health care needs of all tribal families.</li> <li>• As part of the Aardram Primary Health care programme of FHC &amp; SC , individual, family, and settlement(ooru/kudi) based Health programmes to be ensured</li> </ul>
Social justice	<ul style="list-style-type: none"> <li>• Vayomithram programme for elderly care.</li> <li>• Coordination of programmes for differently abled.</li> <li>• Pain and Palliative care programmes</li> </ul>	<ul style="list-style-type: none"> <li>• Since the expansion of elderly health care programmes and developing systems for the same is the need of the hour and hence convergence mechanisms for this to be evolved.</li> </ul>
Women & Child development	<p>Could not start any specific focussed intervention through Anganawadi for Mothers, children &amp; adolescents Bhoomika centres started around 13 years back, continuing without much of a peripheral linkage.</p>	<ul style="list-style-type: none"> <li>• Convergence of Women, Child &amp; adolescent based Aardram health components to be streamlined.</li> <li>• Scope for linking ward, panchayth, block, urban area level Jagrathasamithies with health sector to be explored .</li> <li>• Establishing the linkage of Bhoomika with Jagrathasamithies of periphery</li> </ul>
Education	<p>Only routine school health programme.Covid time special programmes, including the school reopening programmes</p>	<p>A framework for integrated school health programmes through respective health care institutions to be Planned and implemented.</p> <ul style="list-style-type: none"> <li>• Healthy school</li> <li>• School health club.</li> <li>• Co-ordinated activities with Vidhyakiranam</li> </ul>

In addition to this it is proposed that mechanisms be initiated to undertake action that will directly act on the social determinants of health and that are aimed at reducing the overall social gradient in order for the health gradient to disappear.

The working group suggests the following systematic actions

- Steps to generate processes to routinely disaggregate health system data in order to track system generated program data for the marginalized communities. This can be monitored for trends overtime and also monitoring the gap between the system accessibility and utilization among other key dimensions.

- In addition innovative indicators for monitoring action on Social Determinants of Health can be evolved in consultation with various departments and joint indicators that will be tracked by all departments providing convergent action at the LSG level can be developed and collected. Processes to initiate this process can be put in place during this five year plan period.
- The office of an ombudsperson to initiate a mapping and debate on action on social determinants of health can be created. This office can begin receiving inputs from community, LSGs, academics, NGOs, CBOs etc., with regard to action on social determinants of health. The Ombudsperson could in consultation with the health department and other departments initiate discussions at state level on how to complement further the intersectoral action already being implemented by LSG.
- Mechanisms for Health Impact Assessment may be put in place. This can begin with one or two key areas being analysed as a pilot. This experience can further be upscaled and institutionalized during the 14th fyp.

## **5.6 Networking Institutions**

### **5.6.1 Role Of Private Sector (Organised/Unorganised) At Primary, Secondary And Tertiary Levels Of Care**

Private sector is a crucial partner in ensuring equitable health care services. Since a considerable proportion of population seek health care services from private sector there needs system for feedback between the private and public sector in terms of surveillance of diseases, support in epidemic and natural disaster times and implementation of National Health programs.

Many private hospitals and laboratories are better equipped in terms of technical resources and diagnostic tests and so itself the information from those institutions is important for surveillance system. The private sectors' immense resources in terms of diagnostic services make it an irresistible partner for public health surveillance. So it is very essential that the private sector need to be engaged effectively in the communicable disease surveillance process.

Public Private Partnership (PPP) in communicable disease surveillance in the State could be a voluntary collaboration initiated by the public sector that builds upon the strengths of partners, to achieve a shared agenda which produces sustainable results for the benefit of all.

There should be mechanisms for trust-building and mutual respect and collaboration to achieve this. This type of partnerships has been already carried out in STEPS (System for TB Elimination in Private Sector) programme related to TB Elimination and has given lot of momentum for improving services. STEPS is based on principles that partners are equal and accountable. Private hospital managements are considered as the main stakeholders. STEPS established a single window system inside private hospital for coordinating all public health actions. A private hospital consortium has been formed in all districts for planning and review of TB related services from private sector. STEPS may be expanded as

System for Total Engagement of Private Sector for extending public health actions for all patients reaching private sector in an integrated manner.

There should be mechanisms to report disease data from private sector in HMIS format/part of IDSP

High end clinical services from private sector may be strategically purchased on a need basis. Patients will also be reimbursed for mutually agreed clinical services from accredited private hospitals through existing insurance schemes

Private sector needs to be involved in public health activities from the planning phase. Thrust will be to promote standards of care. Quality of care need to be ensured through a participatory body. Appropriate feedback needs to be given timely.

There are smaller private hospitals which are not market driven and extension of public services. Many of these hospitals are doing poorly and require support for asset creation and mechanisms to involve to support them without being influenced by market forces to be explored.

Continuing skill training of private general practitioners. There should be training opportunities for skill upgradation of general practitioners and course conversations to enable rational ethical and effective practises. Eg; Rational management of diabetes & its complications /depression in primary health care. There could be training modules and training conducted in a hybrid model, They may pay for the process and certifying examination planned. Similarly the specific expertise in private sector can also be shared.

### **5.6.2 Role of NGOs/ Not-For-Profit Institutions/Civil Society Organisations.**

The relevance of NGOs in areas as a complementary agency in giving services to the community may be recognised and the relevant stakeholders may be included while planning programmes at local levels.

Each NGO has got a specific strength in terms of their expertise and this expertise need to be facilitated so as to reach the needed beneficiaries through a win-win partnership at all levels so that efforts are not duplicated and the goal towards Universal Health Coverage is achieved.

The Civil Society organisation should be harnessed and they could be champions at community level to raise criticism and crusade against irrational drug use, doctor shopping by community /organising helpdesk in larger hospitals facilitating referral back to primary care facilities with appropriate feedback referral forms.

Civil Society Organisation can also play a role in implementing regulations be it in tobacco control/smoking legislations.

Civil Society organisations can put in pressure in other departments and organisations and departments to address Social Determinants of Health and the interdimensional aspect of health in All Policy.

### **5.6.3 Role Of Central Government Institutions/ Located In Kerala**

The Central Government institutions /Autonomous institutions should have a space to be

partners in furthering the health of people in Kerala.

Autonomous institutes like Regional Cancer Centre can be a partner in services training & research with Health Services/medical Colleges. They can assist the Local Self Governments in implementing their project related to cancer screening and control. Currently the District Cancer control committee under the leadership of collectors have included all stakeholders.

A platform for collaboration and conversation need to be considered based on the expertise of the institutions and the technical expertise they can provide.

#### **5.6.4 Role Of Universities (Including Other Allied Universities)**

Education being an empowering force should provide requisite skills for individuals to be change agents to discern the problems around them and be a partner to change at their level in the possible way rather than staying aloof as institutions imparting knowledge with no practical resonance in day to day life. The twelfth plan document says (Pg. 19).

“The curriculum in medical colleges should keep pace with the changing dynamics of public health, health policy and health demographics. Health professional education should be directed towards population based primary and preventive health care instead of being driven by a curative treatment paradigm. The rural orientation design to understand and manage health problems of rural folk should also be included in the course curriculums in order to make the personnel prepared to do service in rural areas.”

The University should institute mechanisms to ensure that curriculum is not driven by the treatment paradigm alone. This requires partnership of KUHS, DME and government to ensure that the RHTC/UHTC of Medical Colleges is strengthened to achieve the same. Since the CBME curriculum of NMC 2019 too focuses the same, there should be genuine and conscious attitudinal building and soft skill training program to achieve the same. A committee may be instituted to help the same.

There should be mechanisms where in the Universities have linkages with the LSGI and there should be short sensitisation modules/ awareness programs so that every student has an opportunity to understand the process of decentralised planning in Kerala and its opportunities. This could be brought about through short but enlightening and interesting online modules which need to be made basic and mandatory for every student in health sector.

There should be mechanisms created within the University that facilitates international collaboration for exchange programs, training and research. These new mechanisms should be in synchrony with the guidelines of ICMR already available for international collaboration and should not be an additional administrative burden for the researcher;

#### **5.6.5 Role Of Independent Research Institutions & Think Tanks**

Independent research institutions and Medical Colleges to join hands for evaluation of ongoing programmes, operational research and the findings can help the process of health system strengthening

There should be mechanisms for involving independent research institutions and mechanism for getting their feedback and disseminating it to the relevant area.

Budget may be provided for operational research and processes established to receive national/international funds for collaborative research.

The independent research institutions and think tanks should be conversant with the context & unique field level realities in which research is carried out.

The cloud of suspicion around research need to be resolved through education of the community. The process of consent taking and the importance of participating in research even with no direct benefit to individuals but involving benefit to the practises later need to be ingrained to the community. The need for research for evidence generation and the necessity for conducting ethical scientific research using accepted methodologies and processes to be encouraged and widely disseminated.

Bringing in Team training /convergence meetings for showcasing and sharing experiences and structures /opportunities in different sectors

Multicentric Commissioned research especially Health System research to develop its own programme and priorities. Research on important issues, sources of unnecessary Out of pocket Expenditure, pricing of care in private sector, outcomes of community participation, intersectoral linkages required for specific sectors-coastal/tribal etc.,

#### **5.6.6 Medical Colleges & District Health Services Partnership In Services, Training & Research**

The National Medical Commission aims to produce “Indian Medical Graduates” with requisite knowledge, skills, attitudes, values, and responsiveness to function appropriately and effectively as physicians of first contact in the community who understand and provide preventive, promotive, curative, palliative, and holistic care with compassion.

In order to achieve this basic goal of Medical Colleges it is mandatory that there is a Rural Health Training Centre and Urban Health Training Centre attached to each Medical Colleges under the Department of Community Medicine where the undergraduate and post graduate graduates stay and get training in how preventive, promotive, curative, palliative, and rehabilitative services are rendered to the community by the health services of the state.

The vision for public health and the future leaders for health services are moulded during the Medical College training period. It is therefore important that all RHTC and UHTC being attached to Medical Colleges function as Model Health Centres providing avenues to deal with the current health problems how these current challenges are met.

Partnership and communication channels between Medical Colleges and District health services need to be cemented further realising the complementariness of the two rather than being two mutually exclusive departments.

In the current context the Medical Colleges are heavily curative and specialist oriented with minimal focus on preventive, promotive, palliative and rehabilitative domains. The Competency Based Medical Education curriculum of NMC from 2019 too advocates the same. Thus there needs to be shift in focus of Medical Colleges in the future and right emphasis laid on core soft skills like team building, leadership, conflict resolution and managerial skills and resilience building.

The RHTC &UHTC of all Medical Colleges given separate and adequate allocation of funds under DME for becoming demonstration centres for skill training, evidence generation and community-based research.(Currently these centres few in number ie less than twenty coming under Principals of Medical College and hence are neither priority from Medical College side as funds heavily go to hospital nor a priority of DMO as it belongs to Medical College)

There needs to be involvement of expertise in Medical Colleges in supporting the Block Public Health Units envisaged in the 15th Finance commission.

Model Rural Health Research Unit by Department of Health Research (one for every State) is established for “creating infrastructure for transfer of technology to the rural level for improving quality of health services to rural population& Ensuring an interface between the New Technology Developers (Researchers in Medical institutions; State or Centre), Health System Operators (Centre or State Health Services) and the Beneficiaries (Communities in rural areas).” (MRHRU guidelines April2021)

The MRHRU identified by Kerala is located at Chettikadu,Alappuzha and is under the mentorship of NIV Unit,Kerala.The processes for setting up this MRHRU need to be completed as it was stalled due to the unprecedented covid times.(Funds are 100 percent from the Centre for five years for building, salary of staff and recurring expenditure).After five years the MRHRU need to be taken up by the State.This Unit will further strengthen the partnership between Medical Colleges and Distric Health Services.

### **5.6.7 International Partnership In Services, Training & Research**

There should be a mechanism to encourage international collaboration between institutions. There is need for undertaking research in various realms and emerging areas which may require handholding for expertise and methodology. Currently while these collaborations are less cumbersome for private colleges, the government medical institutions are chained with bureaucratic and red-tapism.

There is need to lay down processes to involve in collaborative international research in tune with the ICMR guidelines and this need to be carried out using the expertise of trained researchers who is well versed in the latest fast changing nuances of research.

Online trainings and conferences planned for sharing experiences and forging collaborations for expertise.

The structures and processes for international funding (eg.FCRA) that may further research need to be laid down especially in government sector.

### **5.6.8 General Mechanisms For Creating Partnership**

There is need for a handholding team to forge partnerships that cut across sectors beyond bureaucratic barriers

Forming networks for health/ Creating task forces with specific agenda

In the state we can form networks where stakeholders from the government /NGO /Central Institutions/Autonomous institution/Private sector etc. can join hands to form a coalition. Periodic meetings, trainings, workshops etc can be conducted by this network to bring the interested partners together. A website may be created for the networks where views, discussions, events etc. can be posted.

#### **Model**

Safe Injection Global Network (SIGN). The SIGN alliance is an international coalition of stakeholders, including national governments, international agencies, professional medical associations, non-governmental organizations and individuals dedicated to achieving the safe and appropriate use of injections worldwide.

The Global Alliance to Eliminate Lymphatic Filariasis (GAELEF) was established in 2000 by organizations committed to eliminating lymphatic filariasis as a public health problem  
Tuberculosis Elimination Partnership in Kerala in partnership with LSG  
Tobacco free Campus initiative, ArogyamVyayamathiloode“ – Linking health and education department,

#### **Creating funds for a common initiative**

We could form an alliance between the public and private sectors of health to fight diabetes in Kerala. Funding from philanthropic organisations and individuals with altruistic mindset could be the mechanisms of funding.

#### **Model**

The Global Fund to Fight AIDS, Tuberculosis and Malaria is designed as one way of meeting this challenge. The Fund was first proposed at the G8 Summit in Okinawa, Japan, in 2000. It will be run as a partnership between rich and poor countries, UN agencies including WHO and UNAIDS, civil society and the private sector

Creating pathways/mechanisms/government orders wherever necessary for facilitating partnerships and collaborations.

## Annexure 1

### PROCEEDINGS OF THE MEMBER SECRETARY STATE PLANNING BOARD

(Present: Sri. Teeka Ram Meena IAS)

Sub: - Formulation of Fourteenth Five Year Plan (2022-27) – Constitution of Working Group on **Medical and Public Health** (Modern Medicine) – reg.

Read: 1. Note No. 297/2021/PCD/SPB dated: 27/08/2021  
2. Guidelines on Working Groups

**ORDER No. 448 / 2021 / SS (Health) / SPB Dated: 08.09.2021**

As part of the formulation of Fourteenth Five Year Plan, it has been decided to constitute various Working Groups under the priority sectors. Accordingly, the Working Group on **Medical and Public Health** is here by constituted with the following members. The Working Group shall also take into consideration the guidelines read 2<sup>nd</sup> above in fulfilling the tasks outlined in the ToR for the Group.

#### Co - Chairperson

1. Dr. Asha Thomas IAS, Additional Chief Secretary to Government, Health & Family Welfare Department (Medical Education & KUHS), Room No. 660, 3rd Floor, South Block, Govt. Secretariat, Tvm. - PH: 0471-2517378, 0471-2330363, e-mail: acshealth.me@kerala.gov.in
2. Dr K Srinath Reddy, President, Public Health Foundation of India, PH: 9818364844, Email: ksrinath.reddy@phfi.org

#### Members

1. Dr. Rajan N. Khobragade IAS, Principal Secretary to Government, Health & Family Welfare Department, Room No. 603, 6th Floor, Annexe II, Govt. Secretariat, Tvm - PH: 0471-2518255, 0471-2327865, e-mail: secy.hlth@kerala.gov.in
2. Dr. Rathan U Kelkar IAS, State Mission Director, National Health Mission, NRHM Building, General Hospital Junction, Thiruvananthapuram – 695035, Phone : 0471-2301181, 0471-2302784, email : arogyakeralam@gmail.com
3. Dr. Raju V R., Director, Directorate of Health Services, General Hospital Junction, Thiruvananthapuram - PH: 9037761719, e-mail: dhskerala@gmail.com
4. Dr. Ramla Beevi, Director, Directorate of Medical Education, Medical College P.O, Thiruvananthapuram - Ph:9447042126, e-mail: dmekerala@gmail.com
5. Dr. Jagadeesan T. K., Additional Director(i/c)[Planning], Directorate of Health Services, General Hospital Jn., Thiruvananthapuram - PH: 9447124413, e-mail: drjagadeesan@yahoo.com
6. Dr. Joby John, Deputy Supdt. & Associate Professor of Surgery, Medical College, Thiruvananthapuram - PH: 9847901768, Jobyj007@gmail.com

7. Dr. Sairu Philip, Vice Principal, Professor & Head of Department of Community Medicine, Govt. Medical College, Alappuzha - Mobile: 9961539802, sairuphilip2018@gmail.com
8. Dr. T K Jayakumar, Professor & HoD, Department of Cardiovascular and Thoracic Surgery, Govt. Medical College, Kottayam - Mobile: 9447355841, email: tkjayakumarctvs@gmail.com
9. Dr. C Ravindran, Additional Professor of Surgery, Govt. Medical College, Trissur - Mobile: 9447040431, ravimen@gmail.com
10. Dr. VR Rajendran, Principal, Dept. of Radio Diagnosis, Medical College, Kozhikode 673 008 - Mobile: 9847231048, email: vrajendranct@yahoo.com
11. Dr. Vimal Rohan K, Assistant Professor, Department of emergency Medicine, Medical College, kannur - Mobile: 9995905414, email: drvimalrohan@gmail.com
12. Dr. K P Aravindan Professor (Rtd), Department of pathology, Medical College, Kozhikode PH: 8547056580, e-mail: kparavindan@gmail.com
13. Shri A K Shiva Kumar, Visiting Professor, Young India Fellowship, Ashoka University, Visiting Professor, Harvard Kennedy School and Indian School of Business, shiva.kumar@ashoka.edu.in; Phone: +91-9899453222
14. Dr. Rakhil Gaitonde, Professor, Achutha Menon Centre for Health Sciences Studies, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, PH:9940246089, email: rakhil.gaitonde@sctimst.ac.in, rakhil.amchss@gmail.com
15. Dr T. Sundararaman, Independent Consultant, Health Systems and Health Policy Studies, Puducherry, sundararaman.t@gmail.com, Phone: +91-9987438253
16. Dr. R Chandni, Prof of Medicine and Head of Emergency Medicine, Govt. Medical College, Kozhikode PH: 9447202748 email: chandnidr@gmail.com
17. Dr. Neethu John, Assistant Surgeon, General Hospital, Kalpetta PH: 9048387579, neethujohn20@gmail.com
18. Dr. G. S. Vijaykrishnan, State President, KGMOA PH:9447800230, email: gsvkrishnan@gmail.com
19. Dr Zinia Nujum, Community Medicine Department, Government Medical College, Paripally, Kollam PH: 9037356908, email: drzinia@gmail.com
20. Dr. Suresh Kumar, Director, Institute of Palliative Care, Kozhikode PH: 9349113532, 8129498532, E-mail: drsureshkumar@gmail.com
21. Dr John Panicker, ENT Consultant, Swathanam, Ambalamukku, Thiruvananthapuram, PH: 7012044893 email: cpanicker@gmail.com
22. Dr Satheesan Balasubramanian, Director, Malabar Cancer Centre PH:9895848300 e-mail: directormcctly@gmail.com

23. Dr. H Veena Saroji, Assistant Director (Planning), Directorate of Health Services, General Hospital Junction, Thiruvananthapuram, PH: 9447819437, e-mail: veenasrjih@gmail.com
24. Dr. Abdul Basith, Lecturer, Department of Sociology, University of Kerala, PH: 8130532313, e-mail: basithcg@gmail.com

### **Convener**

Dr. Bindu P Verghese, Chief, Social Services Division, State Planning Board, Tvm, PH: 0471-2540609, 9495098606, e-mail: ssdnklaspb@gmail.com

### **Co- Convener**

Sri. Saji V, Assistant Director, State Planning Board, Tvm, PH: 9447799496, e-mail: ssdnklaspb@gmail.com

### **Terms of Reference**

1. To suggest various measures to improve the functioning of and infrastructure in the government health institutions and to transform the government medical colleges as centres of excellence.
2. To suggest systematic and scientific human resource planning in the health sector both in speciality and administrative cadre.
3. To outline special problems pertaining to the health sector with special focus on non-communicable diseases, trauma care and the emergence and re-emergence of communicable diseases.
4. To suggest a methodology to meet the health needs of persons belonging to scheduled castes and scheduled tribes, women, fish workers, elderly, transgender, and persons with physical and mental disabilities.
5. To consolidate and rationalise the existing health insurance schemes in the State.
6. To suggest a clear and scientifically oriented agenda for medical research in Kerala with specific reference to virology and vaccine research and non-communicable diseases.
7. To establish a comprehensive, effective, and secure system of electronic health records in the State, and one that takes into account international best practices in the field.
8. To assess and suggest measures to strengthen public sector units in the health sector in Kerala.

**Terms of Reference (General)**

1. The non-official members (and invitees) of the Working Group will be entitled to travelling allowances as per existing government norms. The Class I Officers of GoI will be entitled to travelling allowances as per rules if reimbursement is not allowed from Departments.
2. The expenditure towards TA, DA and Honorarium will be met from the following Head of Account of the State Planning Board “3451-00-101-93”- Preparation of Plans and Conduct of Surveys and Studies.

**Sd/-  
Member Secretary**

To

The Members concerned

Copy to

PS to VC

PA to MS

CA to Member (Dr. P K Jameela, PH: 9447737579, drjameelabalan@gmail.com )

Sr. A.O, SPB

The Accountant General, Kerala

Finance Officer, SPB

Publication Officer, SPB

Sub Treasury, Vellayambalam

Accounts Section

File/Stock File

Forwarded / By Order

Sd/-  
Joint Director (T E Santhi)

## Annexure 2

### PROCEEDINGS OF THE MEMBER SECRETARY

#### STATE PLANNING BOARD

(Present: Sri. Teeka Ram Meena IAS)

Sub: - Formulation of Fourteenth Five Year Plan (2022-27) –Working Group on  
**Medical and Public Health** (Modern Medicine) – reg.

Read: 1. Note No. 297/2021/PCD/SPB dated: 27/08/2021  
2. Guidelines on Working Groups  
3. Order No. 448 / 2021 / SS (Health) / SPB Dated: 08.09.2021

**ORDER No. 448 / 2021 / SS (Health) / SPB Dated: 07.10.2021**

As part of formulation of Fourteenth Five Year Plan, Working Groups has been formed under priority sectors. Accordingly, the Working Group on Medical and Public Health has been formed as per reference 3rd cited. Thereafter, it has been decided to co-opt Director, RCC, Thiruvananthapuram as member of the Working Group on Medical and Public Health. Hence Dr. Rekha A. Nair is included in the working group as member.

#### Member

Dr. Rekha A. Nair,  
Director,  
Regional Cancer Centre,  
Thiruvananthapuram  
PH: 9447344430,  
e-mail: director@rcctvm.gov.in

#### Terms of Reference

1. To suggest various measures to improve the functioning of and infrastructure in the government health institutions and to transform the government medical colleges as centres of excellence.
2. To suggest systematic and scientific human resource planning in the health sector both in speciality and administrative cadre.
3. To outline special problems pertaining to the health sector with special focus on non-communicable diseases, trauma care and the emergence and re-emergence of communicable diseases.
4. To suggest a methodology to meet the health needs of persons belonging to scheduled castes and scheduled tribes, women, fish workers, elderly, transgender, and persons with physical and mental disabilities.
5. To consolidate and rationalise the existing health insurance schemes in the State.
6. To suggest a clear and scientifically oriented agenda for medical research in Kerala with specific reference to virology and vaccine research and non-communicable diseases.

7. To establish a comprehensive, effective, and secure system of electronic health records in the State, and one that takes into account international best practices in the field.
8. To assess and suggest measures to strengthen public sector units in the health sector in Kerala.

**Terms of Reference (General)**

1. The non-official members (and invitees) of the Working Group will be entitled to travelling allowances as per existing government norms. The Class I Officers of GoI will be entitled to travelling allowances as per rules if reimbursement is not allowed from Departments.
2. The expenditure towards TA, DA and Honorarium will be met from the following Head of Account of the State Planning Board “3451-00-101-93”- Preparation of Plans and Conduct of Surveys and Studies.

**Sd/-**  
**Member Secretary**

To

The Member Concerned (Dr. Rekha A. Nair)

Copy to

PS to VC

PA to MS

CA to Member, (Dr. P K Jameela, PH: 9447737579, drjameelabalan@gmail.com )

Sr. A.O, SPB

The Accountant General, Kerala

Finance Officer, SPB

Publication Officer, SPB

Sub Treasury, Vellayambalam

Accounts Section

File/Stock File

Forwarded / By Order  
Chief (SS Division)  
Dr. Bindu P Verghese

### Annexure 3

#### Sub group 1

#### Public health

Sl. No.	Name	
1	Dr. Jagadeesan T. K., Additional Director(i/c)[Planning], Directorate of Health Services, General Hospital Jn., Thiruvananthapuram PH: 9447124413, e-mail: drjagadeesan@yahoo.com	Convener
2	Dr T. Sundararaman, Independent Consultant, Health Systems and Health Policy Studies, Puducherry, <a href="mailto:sundararaman.t@gmail.com">sundararaman.t@gmail.com</a> , Phone:+91-9987438253	Member
3	Dr. K P Aravindan Professor (Rtd), Department of pathology, Medical College, Kozhikode PH: 8547056580, e-mail: kparavindan@gmail.com	Member
4	Dr. Sairu Philip, Vice Principal, Professor & Head of Department of Community Medicine, Govt. Medical College, Alappuzha Mobile: 9961539802, sairuphilip2018@gmail.com	Member
5	Dr Zinia Nujum, Community Medicine Department, Government Medical College, Paripally, Kollam PH: 9037356908, email: drzinia@gmail.com	Member
6	Dr John Panicker, ENT Consultant, Swathanam, Ambalamukku, Thiruvananthapuram, PH: 7012044893 email: cjpanicker@gmail.com	Member
7	Dr. G. S. Vijayakrishnan, State President, KGMOA	Member

	PH:9447800230, email: gsvkrishnan@gmail.com	
8	Dr. H Veena Saroji, Assistant Director (Planning), Directorate of Health Services, General Hospital Junction, Thiruvananthapuram, PH: 9447819437, e-mail: veenasrjih@gmail.com	Member

**Sub group 2**

**Health Financing and quality improvement**

Sl. No.	Name	
1	Dr. K P Aravindan Professor (Rtd), Department of pathology, Medical College, Kozhikode PH: 8547056580, e-mail: kparavindan@gmail.com	Convener
2	Shri A K Shiva Kumar, Visiting Professor, Young India Fellowship, Ashoka University, Visiting Professor, Harvard Kennedy School and Indian School of Business, <a href="mailto:akshivakumar@gmail.com">akshivakumar@gmail.com</a> Phone: +91-9899453222	Member
3	Dr T. Sundararaman, Independent Consultant, Health Systems and Health Policy Studies, Puducherry, <a href="mailto:sundararaman.t@gmail.com">sundararaman.t@gmail.com</a> , Phone:+91-9987438253	Member
4	Dr Satheesan Balasubramanian, Director, Malabar Cancer Centre PH:9895848300 e-mail: <a href="mailto:directormcctly@gmail.com">directormcctly@gmail.com</a>	Member
5	Dr. Rakhil Gaitonde, Professor, Achutha Menon Centre for Health Sciences Studies, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum,	Member

	PH:9940246089, email: rakhal.gaitonde@sctimst.ac.in, rakhal.amchss@gmail.com	
6	Dr. VR Rajendran, Principal, Dept. of Radio Diagnosis, Medical College, Kozhikode 673 008 Mobile: 9847231048, email: vrajendranclt@yahoo.com	Member
7	Dr. Joby John, Deputy Supdt. & Associate Professor of Surgery, Medical College, Thiruvananthapuram PH: 9847901768, Jobyj007@gmail.com	Member

### **Sub group 3**

#### **Bridging Health Equity Gaps**

Sl. No.	Name	
1	Dr. Rakhal Gaitonde, Professor, Achutha Menon Centre for Health Sciences Studies, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, PH:9940246089, email: rakhal.gaitonde@sctimst.ac.in, rakhal.amchss@gmail.com	Convener
2	Dr Zinia Nujum, Community Medicine Department, Government Medical College, Paripally, Kollam PH: 9037356908, email: drzinia@gmail.com	Member
3	Dr. Suresh Kumar, Director, Institute of Palliative Care, Kozhikode PH: 9349113532, 8129498532, E-mail: drsureshkumar@gmail.com	Member
4	Dr. Jagadeesan T. K., Additional Director(i/c)[Planning], Directorate of Health Services, General Hospital Jn., Thiruvananthapuram	Member

	PH: 9447124413, e-mail: drjagadeesan@yahoo.com	
5	Dr. Neethu John, Assistant Surgeon, General Hospital, Kalppetta PH: 9048387579, neethujohn20@gmail.com	Member
6	Dr. Abdul Basith, Lecturer, Department of Sociology, University of Kerala, PH: 8130532313, e-mail: basithcg@gmail.com	Member

#### Sub group 4

#### **Health Research and Health Technologies**

Sl. No.	Name	
1	Dr Satheesan Balasubramanian, Director, Malabar Cancer Centre PH:9895848300 e-mail: directormcctly@gmail.com	Convener
2	Dr T. Sundararaman, Independent Consultant, Health Systems and Health Policy Studies, Puducherry, sundararaman.t@gmail.com, Phone:+91-9987438253	Member
3	Dr. Rekha A. Nair, Director, Regional Cancer Centre, Thiruvananthapuram PH: 9447344430, e-mail: director@rcctvm.gov.in	Member
4	Dr Zinia Nujum, Community Medicine Department, Government Medical College, Paripally, Kollam PH: 9037356908, email: drzinia@gmail.com	Member
5	Dr. VR Rajendran, Principal, Dept. of Radio Diagnosis, Medical College, Kozhikode 673 008	Member

	Mobile: 9847231048, email: vrajendranclt@yahoo.com	
6	Dr. C Ravindran, Additional Professor of Surgery, Govt. Medical College, Trissur- Mobile: 9447040431, ravimen@gmail.com	Member
7	Dr. R Chandni, Prof of Medicine and Head of Emergency Medicine, Govt. Medical College, Kozhikode PH: 9447202748 email: chandnidr@gmail.com	Member
8	Dr. Vimal Rohan K, Assistant Professor, Department of emergency Medicine, Medical College, kannur – Mobile: 9995905414, email: drvimalrohan@gmail.com	Member

### **Sub group 5**

#### **Health Professional Education**

Sl. No.	Name	
1	Dr. VR Rajendran, Principal, Dept. of Radio Diagnosis, Medical College, Kozhikode 673 008 Mobile: 9847231048, email: vrajendranclt@yahoo.com	Convener
2	Dr. T K Jayakumar, Professor & HoD, Department of Cardiovascular and Thoracic Surgery, Govt. Medical College, Kottayam Mobile: 9447355841, email: tkjayakumarctvs@gmail.com	Member

3	Dr. C Ravindran, Additional Professor of Surgery, Govt. Medical College, Trissur Mobile: 9447040431, ravimen@gmail.com	Member
4	Dr John Panicker, ENT Consultant, Swathanam, Ambalamukku, Thiruvananthapuram, PH: 7012044893 email: cspanicker@gmail.com	Member
5	Dr. R Chandni, Prof of Medicine and Head of Emergency Medicine, Govt. Medical College, Kozhikode PH: 9447202748 email: chandnidr@gmail.com	Member
6	Dr. Vimal Rohan K, Assistant Professor, Department of emergency Medicine, Medical College, kannur – Mobile: 9995905414, email: drvimalrohan@gmail.com	Member

### **Sub group 6**

#### **Scope for participation and partnership**

Sl. No.	Name	
1	Dr. Sairu Philip, Vice Principal, Professor & Head of Department of Community Medicine, Govt. Medical College, Alappuzha – Mobile: 9961539802, sairuphilip2018@gmail.com	Convener
2	Dr T. Sundararaman, Independent Consultant, Health Systems and Health Policy Studies, Puducherry, sundararaman.t@gmail.com, Phone:+91-9987438253	Member
3	Dr. K P Aravindan Professor (Rtd), Department of pathology, Medical College, Kozhikode	Member

	PH: 8547056580, e-mail: kparavindan@gmail.com	
4	Dr. Rekha A. Nair, Director, Regional Cancer Centre, Thiruvananthapuram PH: 9447344430, e-mail: <a href="mailto:director@rcctvm.gov.in">director@rcctvm.gov.in</a>	
5	Dr. Jagadeesan T. K., Additional Director(i/c)[Planning], Directorate of Health Services, General Hospital Jn., Thiruvananthapuram PH: 9447124413, e-mail: drjagadeesan@yahoo.com	Member
6	Dr Zinia Nujum, Community Medicine Department, Government Medical College, Paripally, Kollam PH: 9037356908, email: drzinia@gmail.com	Member
7	Dr. Abdul Basith, Lecturer, Department of Sociology, University of Kerala, PH: 8130532313, e-mail: basithcg@gmail.com	Member

#### Annexure 4

#### Report Drafting Committee

Sl. No.	Name	
1	Dr. Rakhil Gaitonde, Professor, Achutha Menon Centre for Health Sciences Studies, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, PH:9940246089, email: rakhil.gaitonde@sctimst.ac.in, rakhil.amchss@gmail.com	Convener
2	Dr. Jagadeesan T. K., Additional Director(i/c)[Planning], Directorate of Health Services,	Member

	General Hospital Jn., Thiruvananthapuram PH: 9447124413, e-mail: drjagadeesan@yahoo.com	
3	Dr. C Ravindran, Additional Professor of Surgery, Govt. Medical College, Trissur- Mobile: 9447040431, ravimen@gmail.com	Member
4	Dr Zinia Nujum, Community Medicine Department, Government Medical College, Paripally, Kollam PH: 9037356908, email: drzinia@gmail.com	Member