DECENTRALIZED HEALTH PLANNING FOR NON-COMMUNICABLE DISEASES IN KERALA: A BUDGET ANALYSIS

Dr CHINTHA S

Ph.D. THESIS

2024

SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES AND TECHNOLOGY, TRIVANDRUM

An Institution of National Importance established by an Act of the Indian Parliament (Act No.52 of 1980)

Dept. of Science and Technology, Govt. of India www.sctimst.ac. in

DECENTRALIZED HEALTH PLANNING FOR NON-COMMUNICABLE DISEASES IN KERALA: A BUDGET ANALYSIS

THESIS SUBMITTED BY

Dr CHINTHA S

TO

SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES AND TECHNOLOGY, TRIVANDRUM

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF

DOCTOR OF PHILOSOPHY

2024

DECLARATION BY THE STUDENT

CERTIFICATE

I, Dr Chintha S, hereby certify that I had personally carried out the work depicted in the thesis entitled "Decentralized Health Planning for Non-Communicable Diseases in Kerala: A Budget Analysis".

No part of the thesis has been submitted for the award of any other degree or diploma prior to this date

Date: 18.06.2024

Dr Chintha S

श्री चित्रा तिरुनाल आयुर्विज्ञान और प्रौद्योगिकी संस्थान, त्रिवेन्द्रम
तिरुवनन्तपुरम - ६९५०११, केरल, इंडिया
SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES AND TECHNOLOGY, TRIVANDRUM
Thiruvananthapuram - 695 011, Kerala, India
(An Institute of National Importance under Govt. of India)
Grams : Chitramet, Phone : +91-471-2443152, Fax : +91-471-2550728 / 2446433, E-mail : sct@sctimst.ac.in, Website : www.sctimst.ac.in

CERTIFICATE BY THE RESEARCH GUIDE

Name of the Guide: Srinivasan K

Department : Achutha Menon Centre for Health Science Studies

This is to certify that Dr CHINTHA S of Achutha Menon Centre for Health Science Studies of this institute has fulfilled the requirements prescribed for the Ph.D. degree of the Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum.

The thesis entitled,"Decentralized Health Planning for Non-Communicable Diseases in Kerala: A Budget Analysis"was carried out under my direct supervision. No part of the thesis was submitted for the award of any degree or diploma prior to this date.

Clearance was obtained from the Institutional Ethics Committee for carrying out the study.

K. Srinivasan 13/6/24

Signature

Name of the Guide

Date: 13 June 2024

Dr. Srinivasan K.
Professor
Achutha Menon Centre for Health Science Studies
Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum

APPROVAL OF THESIS

The thesis entitled

DECENTRALIZED HEALTH PLANNING FOR NON-COMMUNICABLE DISEASES IN KERALA: A BUDGET ANALYSIS

Submitted by

Dr CHINTHA S

for the degree of
Doctor of Philosophy
of

SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES AND TECHNOLOGY, TRIVANDRUM

is evaluated and approved by

K. Srinivasan 20/12/2024
Dr Srinivasan Kannan Ph.D., Professor
Name and Signature of Guide

Prof. V. DEVADAS
Name and Signature of thesis examiner
20/12/24

ACKNOWLEDGEMENT

Let me place on record my profound appreciation and gratitude to all those who have supported and guided me throughout this arduous journey of completing my doctoral thesis.

I am most grateful to **DR. Srinivasan K,** Professor, AMCHSS, for guiding and mentoring me. His expertise, in-depth knowledge, and attention to detail were invaluable in shaping the direction of this thesis. He was not just teaching, rather, he demonstrated the way, and inspired me throughout. I am indebted to you Sir, for helping me explore the philosophy of 'searching new knowledge' and mentoring my development as a researcher.

I would like to thank my Doctoral Advisory Committee members **DR. Sankara Sarma**, Professor, AMCHSS, and **Dr Indu P S**, Professor and Head, Department of Community Medicine, Government Medical college, Kollam, for their insightful comments, constructive criticisms, and critical evaluation at different stages of the research.

I would like to thank my teachers at **AMCHSS Dr.V.Raman Kutty, DR. Mala Ramanathan, Dr.Biju Soman, Dr.Ravi Prasad Varma, Dr Rakhal Gaitonde, DR Jissa V T, and DR Jeemon** for their classes during my Ph.D. coursework and the support extended for my research work. I place on record my sincere gratitude to all the faculty and staff members of SCTIMST, Trivandrum.

I take this opportunity to express my gratitude to, **Dr Phinse M Philip**, **Dr.Neethu AP, Dr Jayalekshmi, Dr Tony Lawrence, Ms Sandhya, Dr Libu G K, Dr Soumya Gopakumar, Dr Jeena Ramesh, Dr Noble Gracious, Dr Antony Stanley, Dr Mathew J Valamparambil, Dr Gurpreet Singh, Dr Sreelakshmi P R, Dr Ranjana, Dr Tijo George, Dr Nisha Jose** and all my fellow Ph.D. scholars for their help and support.

I express my honest gratitude to every participant in my study who gave me their precious time and enriched my study with their experiences. I place on record my

gratitude to officers of the Department of Local Self Government and Department of Health, Government of Kerala for facilitating this research.

My heartfelt gratitude to **Dr Sreejith L K, Dr Anish T S, Dr Aparna S**, **and Mr. Aswin J Kumar,** whose knowledge and wisdom helped me overcome many a hurdle and were my constant source of courage and motivation, throughout this journey.

Words cannot express my gratitude to **Dr Sreejith, Dhruv,** and **Dev,** for all the sacrifices they had to make, for their understanding, and their love, which sustained me through the challenges and demands of this difficult academic aspiration of mine.

Above all, I bow before my **parents and teachers** for blessing me with this opportunity and giving me the strength to finish this important work.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATIONS

BP	Block Panchayat
CI	Community Intervention
DP	District Panchayat
DPC	District Planning committee
GP	Grama Panchayat
IKM	Information Kerala Mission
KILA	Kerala Institute of Local Administration
LSG	Local Self Government
MCH	Maternal and Child Health
NCD	Non-communicable Diseases
NICE	National Institute for Clinical Excellence
NPCDCS	National Program for Prevention and Control of Cancer Diabetes Cardiovascular diseases and Stroke
NP-NCD	National Program for Prevention and Control of Non-Communicable Diseases
SDG	Sustainable Development Goal
TVPM	Thiruvananthapuram
UHC	Universal Health Coverage
ULB	Urban Local Body
WHO	World Health Organization

SYNOPSIS

Decentralized health planning has evolved as a system with improved efficiency and responsiveness to enhance health outcomes. One of the key challenges in decentralized health planning is prioritization and resource allocation between various health initiatives based on their relevance and criticality, and aligning it with national and state priorities. The decisions for allocation in health sector are based on several considerations. Though rational decision making based on scientific evidences is ideal, the approaches practiced include following earlier decisions, following 'gut feelings', 'educated guesses', popular measures, initiatives with tangible outcomes, replicating successful initiatives or even considering options that would cause minimum damage or difficulties.

Among different health problems, non-communicable diseases (NCD) contribute more to morbidity and mortality. Based on the literature, it is found that the resource allocation at different levels do not give due priority to the NCD initiatives. In India, NCD spending accounts for one-fourth of total health spending of the country and it is significantly low in economically vulnerable states. Among all states of India, Kerala is experiencing the highest epidemiological transition level and over 90% of Kerala's premature mortality is contributed by NCDs.

In Kerala, under the annual plans of local self-governments (LSG), projects are proposed in different priority areas identified. For health planning at the local level, resources are allocated for specific health issues such as, communicable diseases, non-communicable diseases, nutrition, maternal and child health, palliative care and hospital services.

Non-communicable diseases are a unique problem, where the remedies are not obvious, tangible or appealing for the people or politicians. The natural focus will be on providing curative services including management of complications. But the actual solution can be found only in promotive and preventive services. But keeping your

long-term perspective in focus is difficult as there will be tremendous pressure in meeting the demands for curative services due to the much obvious disease burden. The dialysis units and construction of buildings are some examples that create good impact among the community members. This is at the cost of the non-tangible interventions that would have controlled the NCD burden. Experiences from other parts of the globe substantiates this preference for tangible measures. Studies have shown that less visible community health services that focus on health promotion, disease prevention and referral have been neglected within the prioritization process in favor of more tangible curative health services.

Understanding how health care organizations or public health agencies make decisions will help us decide on what to be done in improving decision making. To understand the pattern of allocating the resources for health planning, different approaches may be adopted. One such approach is studying the pattern of budget at the respective level of institution. An analysis of the budget allocation of an organization gives us insights regarding their priorities. The ultimate test of an agency's priorities is in its budget. Resources can be actually utilized in the provision of services only to the extent that funds are made available.

Research studies focusing on setting of priorities and budgets in public health at local level in India is scarce. More research exploring prioritisation and research allocation for NCD is needed. The present study on decentralized health planning for non-communicable diseases in Kerala aims to understand the pattern of budget allocation for health sector projects with specific reference to non-communicable diseases at different levels of Local self-government (LSG) institutions in Kerala. This study is an effort to answer the following questions: What are the priority public health initiatives and projects, and what proportion of funds is allocated for each under the annual plan of LSG institutions in Kerala? How much priority is given to projects on Non-communicable diseases control? How much priority is given to community level interventions in NCD projects? What type of NCD projects are being funded and what is the pattern of distribution of funds between them? What is the pattern of budget

allocation for health sector projects and it's relation with allocation for NCD projects? What are the factors that determine the priority setting process and decisions on resource allocation with respect to NCD control?

Objectives of the current study were a) To study the pattern of budget allocation for Non-Communicable Diseases projects at different levels of Local Self Governments in Kerala b)To study the pattern of budget allocation for health sector projects with specific reference to Non-Communicable Diseases in Local Self Governments of Kerala c) To determine the factors associated with allocation for Non-Communicable Diseases projects in decentralized planning in Kerala and d) To describe the factors influencing priority setting process in decentralized health planning in Kerala.

The present study followed a descriptive design, conducted in two phases. In the initial phase, data on budget allocation for health sector projects for all local bodies of Kerala was collected and analyzed. In the second phase, detailed study of factors influencing resource allocation in selected Grama Panchayaths of Kerala was done. Data collection was done from April 2022-June 2023. Study included LSG projects of last four financial years (2018-22) of the 13^{th} five-year plan from 2018-2022. Health projects of both urban and rural LSG institutions were studied. Urban local bodies include municipalities for towns and corporations for cities. Rural local bodies at three levels of decentralised governance include district, block and grama panchayaths.

Three districts, one each from North, Central and South Kerala from the list of districts in each geographic zone were randomly selected. All District Panchayaths (DP), Block Panchayaths (BP), Municipalities and Corporations of Kottayam, Kozhikode and Thiruvananthapuram districts were included. From a list of 214 grama panchayaths, 30 GPs were selected from each district, using simple random sampling.

Data extraction form and structured interview schedule were developed, after expert consultations and literature review. Data was accessed from the digital datasets that are available in the report format on different health sector projects from the Information Kerala Mission, a Government of Kerala organisation. Documents that were part of

the planning and resource allocation processes at the LSG institutions at different levels were accessed. Information regarding factors influencing allocation process was collected for each Grama Panchayath from any one member of working group for health sector. Medical officer/ health supervisor of Primary Health Centre/Community Health Centre and health standing committee chairman of that GP were preferably included. The interviews were conducted in-person or via telephone, each lasting approximately 15 minutes.

The data files obtained from LSG department was sorted and cleaned and data extracted into the data extraction form in spreadsheet format. Primary information was collected from concerned LSGs, for completion and accuracy. Data cleaning, sorting, categorization and coding of projects done in excel. Statistical analysis was done using IBM SPSS V 27.0. Budget allocation in lakhs was summarized as mean (SD), median (IQR) and sum. Proportion of allocation for different projects were estimated. For bivariable analysis, independent sample t test, and chi square test were used. Paired t test was used for testing significance of difference in allocation between years. Multivariable analysis for determinants of high allocation for NCD was done using binary logistic regression. Correlation was estimated between different heads of budget amount. $P < 0.05$ was considered significant for association.

Study included 146 LSG institutions, of which there were 90 Grama Panchayaths, 34 Block Panchayaths, three District Panchayaths and 19 Urban Local bodies (ULB). The total amount allocated for health projects for the four years studied was Rs 59000.99 lakhs. This amount was distributed among 8139 health projects. Out of this, less than one-tenth was allocated for non-communicable diseases control among 795 NCD projects. District Panchayaths and Block panchayaths have allocated more than 10% of their health budget for NCD projects. Grama Panchayaths had the lowest percentage allocation for NCD. The total budget allocation for health sector projects in local bodies of Kerala shows a steady increase from 2018-19 to 2021-22. The amount allocated for NCD projects did not show an increasing trend.

Among NCD projects one-fourth of allocation was for dialysis services and another one-fourth allocated for financial support for patients on treatment for NCD complications. For cancer screening and care 10% of NCD fund was allocated. In Grama Panchayath's, highest proportion of allocation among NCD projects was for treatment aid, followed by purchase of drugs. Block Panchayat's allocated most for purchase of drugs, closely followed by treatment aid. District panchayath's and urban local bodies allocated more than one-third of their NCD fund for dialysis services. In Urban local bodies, after dialysis, highest proportion of allocation was for purchase of drugs and then treatment aid.

Allocation for community interventions in NCD was one-fifth of total allocation for NCDs. In LSGs of rural areas, allocation for community interventions was more than one-fifth of total allocation for NCDs. But the allocation for community interventions by urban local bodies was less. Among NCD community interventions, nearly half of allocation was for cancer screening. Another frequent community intervention project was household level awareness and screening activities which got more than one-fourth of allocation. Minimal budget was allocated for four years in three districts together for community interventions for improving physical activity and there were no projects for promoting healthy eating. Of the total amount allocated for NCD projects, more than half was for projects related to management of NCD complications, especially, those for dialysis and distributing financial aid for chronic patients. Projects on primary prevention of NCD got only less than 10% of budget. Regarding, agenda and functions in the allocation for NCD projects, most of them were based on local agenda. Most of the NCD projects did belong to consumption category of allocation and based on objective, projects which were end itself.

When we analyzed the line-item wise budget in health sector, it was found that among total amount allocated for health sector projects, more than one-third was earmarked for infrastructure or construction activities. Multicomponent projects including camps, campaigns, and awareness classes had one-fourth of allocation. This was followed by fund for purchase of medicines. Looking into the program wise budget, more than half

of allocation for health sector went for projects on maintaining hospital services like construction, purchase of medicines and equipment, salary, and daily expenses. Even though, COVID-19 projects were there only for last two years of period under study, 10% of total allocation for this period was for projects on pandemic control. Palliative projects, which are mandatory for all local bodies, got another 10% of allocation. Communicable diseases excluding COVID-19, maternal and child health, mental health and tribal health had very less allocation. When we tried to understand the priority given to each level of intervention, specifically looking for primary prevention, the findings were skewed towards tertiary prevention. The major proportion of budget for health sector was allocated for curative services alone, under secondary and tertiary level of prevention.

We studied the factors influencing resource allocation for NCDs in 90 Grama Panchayaths. Out of the 90 GPs, only 60% had at least one NCD project. GPs were grouped into LSGs with high and low allocation for NCD projects and further inferential analysis done based on these two groups. On bivariable analysis, considering health status reports and best practices and evidences during planning meetings were positively associated with high allocation for NCD. Following local agenda, and discussing NCD as a priority in working groups also resulted in high allocation. But following previous year patterns, and experiencing political pressure for tangible outputs were associated with low allocation for NCD. On doing multivariable analysis with binary logistic regression, significant association was found between considering health status reports for prioritizing allocation and high allocation for NCD projects. Experiencing political pressure by the working group for projects with tangible outcome negatively influenced NCD allocation.

The thesis will be organized in the following sections; first chapter introduces the importance of decentralized health planning and the crucial role of judicious prioritization of limited resources. Rationale of the study is established by stating the burden of NCD and need for local planning in tackling the issue. Budget analysis is suggested as an appropriate method for understanding the prioritisation process in

health planning. Second chapter incorporates a thorough literature review on decentralised health planning, evolution of health planning, prioritisation in health, methods in priority setting, factors influencing priority setting, evidence based resource allocation, addressing NCD problem, importance of primary prevention and community level interventions, methods of budget analysis, budget analysis as a tool for improving resource allocation in health, and local planning in Kerala. The 3rd chapter is on methods used in this study. The section contains stages of data collection, study setting, sampling, tools in data collection, data collection, measurement of variables, operational definitions, and data analysis. Chapter 4 is results, which is divided into sections. First section describes the profile of LSGIs under study, distribution of health budget across different levels of LSGIs and years. Second section describes the proportion and pattern of budget allocation among NCD projects including community interventions. Third section is on pattern of budget allocation among health sector projects and its relation with allocation for NCD. Fourth section is on factors influencing allocation for NCD projects. Fifth chapter discusses the findings of this study in detail. The last chapter is summary and conclusions from this study.

INTRODUCTION

CHAPTER 1

INTRODUCTION

Public health challenges ranging from infectious diseases to chronic diseases is aggravated by emerging issues due to urbanization, climate change and socioeconomic inequities. These evolving problems coupled with resource limitations and sustainability concerns pose difficulties for health systems to meet the health needs of the population. Effective health planning at all levels of health governance is crucial for achieving our development goals (NHA,2024; NHP,2017; Aftab et al., 2020; SDG, 2024). Moreover, the pursuit of SDG target 3.8 of achieving Universal Health Coverage (UHC), relies on strategic planning (The World Health Report, 2010; Universal Health Coverage, 2024). Planning is defined as a systematic approach to attain explicit objectives for the future through the efficient and appropriate use of resources available now and in the future (Green and Green, 2007).

1.1.DECENTRALIZED HEALTH PLANNING

In modern healthcare governance, decentralization has emerged as a transformative strategy, empowering local authorities and communities to take charge of their health destinies. Decentralized health planning, as a cornerstone of this paradigm shift, seeks to align health interventions with local contexts and priorities, recognizing the heterogeneity of health needs across diverse communities (Bossert and Beauvais, 2002; Decentralization, 2024; Liwanag and Wyss, 2019). For attaining the goals

envisaged by the National Health Policy of India, increased access to quality health services at affordable costs is essential. For achieving this, one of the key policy principles is decentralization of health planning (National Health Policy, 2017).

1.2.THE APPROACHES OF FUND ALLOCATION IN HEALTH

The most important challenge in health planning at the local level is prioritization for resource allocation among various health initiatives, following relevance and strategies (Baltussen and Niessen, 2006; McCollum et al., 2018; Nunes and Rego, 2014; Singer et al., 2000). Priority setting in health has been approached in various ways. Some countries follow a formula based approach (Mahalanobis, 1964; Smith, 2007), some are driven by the political agenda (Halpin et al., 2018; Moran et al., 2006), religious institutions decide some and so on (Abbo, 2024; Moran et al., 2006; Terwindt et al., 2016). This becomes further complicated when practiced at local levels (Shuqair, 2015). Decisions can be either made purely based on scientific evidence or based on the analysis of social values or made implicitly following earlier decisions, or following 'gut feelings', or sometimes following 'educated guesses' or even considering options that would cause minimum damage or few difficulties'(Drummond et al., 2015). It is also reported that allocation of resources in health at many times are made disproportionate to the disease burden, and is highly skewed towards conventional priorities (Nozaki, 2013). For ease of practice, many governments follow the traditional pattern and ignore aligning priorities with the recent changes in disease patterns (Dixon et al., 1997; Drummond et al., 2015; Chakraborty, 2021).

1.3. ANALYZING THE PROCESS OF FUND ALLOCATION FOR HEALTH

To understand the process of fund allocation, many methods have been employed. One such method used is budget analysis. Here, budget analysis is done to understand the pattern of budget allocation for health sector projects with specific reference to non-communicable diseases at different levels of Local self-government (LSG) institutions in Kerala. This method, will address the following questions: what are the priority public health initiatives and projects? what proportion is allocated to each priority under the annual plans? what priority was given to non-communicable diseases? what is the level of importance given to community interventions? what are the types of NCD projects funded? what is the pattern of distribution of funds? what is the pattern of allocation for health sector projects? and what are the factors determining the priority setting process?

By answering these questions, the study sheds light on the priority-setting processes within local level planning, going beyond the usual examination of criteria and methods to provide empirical evidence on actual planning priorities. Through budget analysis, the study offers insights into the allocation of resources, especially for NCD interventions, aiming to uncover the underlying reasons for gaps in the prioritization and execution of NCD-related initiatives in Kerala. Furthermore, it identifies the factors influencing resource allocation decisions, informing health policy and administration. NCDs were chosen as the focal point due to their significant burden on

morbidity and mortality, as well as the substantial economic and social costs involved, and the pivotal role of local bodies in their control (Action plan for NCD, 2013–2020, 2013.; Ajisegiri et al., 2021; Puoane et al., 2017; Thakur et al., 2020). The existing literature predominantly focuses on cost-effectiveness or program evaluation of NCD initiatives and lacks budget analysis studies. The present study is an effort to analyze the prioritization process in health at local governments using budget analysis.

1.4. DIMENSIONS IN BUDGET ANALYSIS

Budgeting is the formulation of plans in numerical terms. Budgets are statements of anticipated results in financial terms (Koontz, 2020). Budget analysis critically evaluates budgetary allocations made by governments and generates information with potential to influence policy in making public spending more efficient and responsive (Aiyar and Behar, 2005). In the present study, the priorities and underlying processes in local health planning were decoded using analysis of budget allocated for health projects implemented under the annual plan of LSGs. The budget was analyzed using five dimensions: type of intervention, level of intervention, function of production or consumption, objective of being means to end or end itself, and agenda (local versus state or national) based on which project was planned. The share of budget allocation for categories under each dimension unravels the priorities and underlying factors in local planning.

The Budget allocated can be either for facility-based projects or community-based interventions. Facility-based projects include purchase of medicines and equipment, construction activities, furniture, maintenance of clinics, salary, quality improvement activities, and meeting daily expenses. Community-based interventions include awareness campaigns, disease screening initiatives, medical camps, improving neighborhood facilities, and other Information Education and Communication activities. The interventions implemented can be categorized under the primary, secondary and tertiary levels of disease prevention. Fund allocation decisions made by the local bodies will reveal the relative priority given to preventive versus curative services. Another dimension that needs to be explored is the allocation share for production versus consumption activities. Conventionally, a higher share of allocation is given for asset creation, which compromises services directly benefiting the individual. Finally, the agenda followed during the formulation of projects will help us understand whether the principles of local planning are adhered to or not.

The Budget allocated for four financial years from 2018-19 to 2021-22 was included in the analysis. This included the thirteenth five-year plan, excluding the year 2017-18. The COVID-19 pandemic was kept as a marker by bifurcating the study period into two pre-pandemic years and two pandemic years.

1.5. DECENTRALIZED HEALTH PLANNING IN KERALA

Kerala implemented political decentralization in 1996 following the Panchayati Raj Act of India*. At the time, it was known as the “People’s Campaign for the Ninth Plan

(Heller et al., 2007). Elected Panchayat Raj (local self-government) Institutions (LSGIs) were recognized as constitutional bodies below the State level. The Act also recognized the devolution of power to LSGIs concerning 29 sectors, including health, allowing them to control government healthcare units within their jurisdiction (Heller et al., 2007; Varghese et al., 2007). In Kerala, Annual plans are an integral part of local level planning that is planned during the financial year cycle by preparing a budget every year. Under the annual plan, projects are proposed in identified priority areas (Hari, 2022). For health planning at the population level, resources are allocated for specific health problems such as communicable diseases, non-communicable diseases, nutrition, maternal and child health, palliative care, and hospital services (Local Planning, KILA,2020; Hari, 2022; Varghese et al., 2007). [1]

1.6. RESOURCE ALLOCATION FOR NON-COMMUNICABLE DISEASES

Among the different health problems, non-communicable diseases (NCDs) contribute more to morbidity and mortality across the globe (Murray et al., 2020; Vos et al., 2020). This is also true for developing economies such as India due to the epidemiological transition, with two-thirds of the disease burden attributed to non-communicable diseases (NCDs) and injuries (Dandona et al., 2017). Among all states of India, Kerala is experiencing the highest epidemiological transition level with an

[1] Note: Implemented from the Ninth Five Year Plan ((1997-2002) with the issue of Government order (G.O (MS) No.10/96/plg.; dt. 30-7-1996).

epidemiological transition ratio of 0.16. Over 90% of Kerala's premature mortality is attributed to NCDs (Indian Council of Medical Research et al., 2017). The ICMR-INDIAB survey done during 2008-20 found that the prevalence of NCDs in India is considerably higher than previous estimates. Thus, a significant proportion of the population is at risk of complications due to metabolic NCDs. The cost of treating these complications poses a huge economic burden for the individual, society, and country, and will be one of the greatest public health challenges for us in future. This suggests the need for urgent government-level initiatives to prevent and manage NCDs through strengthening of the public health-care system and reorientation of priorities in provision of health care (Anjana et al., 2023).

Contrary to the substantive evidence discussed above, the resource allocation at different levels does not give due recognition to the NCD initiatives (Ajisegiri et al., 2021; Heller et al., 2019a; Nozaki, 2013; Thakur et al., 2020). Only one-tenth of all WHO funds are allocated for Non-communicable diseases. (Nozaki, 2013; Stuckler et al., 2008). The disparity clearly shows how the resource allocations are more biased towards communicable diseases. Studies from other countries also reported how under-investment in NCDs contrasted with well-funded maternal and child health and

communicable diseases programs (Tesema et al., 2021). This translated to different levels, such as national, state, and local levels. Kerala state, known as the diabetes and NCD Capital of India, with a high burden of NCD too, follows the same pattern (Bagepally et al., 2022).

Non-communicable diseases are a unique problem where the actual remedies are not obvious, tangible, or appealing for the people or politicians (Heller et al., 2019; Tesema et al., 2021). This makes it convenient to focus on providing curative services, including management of complications, while the actual solution can be found only in promotive and preventive services (Martinez, 2015; Jeet et al., 2017; Pati et al., 2020; Senanayake et al., 2017; Wendimagegn and Bezuidenhout, 2019). Keeping the long-term goal of reducing the prevalence of NCD in focus is difficult as there will be tremendous pressure to meet the demands for curative services due to the much obvious disease burden (Haque et al., 2020; Laar et al., 2019; Pati et al., 2020; Thakur et al., 2020). On a practical front, NCD is known for many modifiable risk factors or mostly preventable factors that control the burden (Budreviciute et al., 2020; Kontis et al., 2014). Hence, the sustainable and cost-effective strategy, as suggested by studies, is population-based prevention interventions (Gabbay and le May, 2004; Jeet et al., 2017; Kontis et al., 2014; Vartiainen, 2018.; Wendimagegn and Bezuidenhout, 2019). The North Karelia experiment is an example of a state-level intervention on NCD that yielded good results and was followed by international bodies such as WHO in the name of the STEPS approach (Vartiainen, 2018). Prevention, early diagnosis, and

prompt treatment of hyperglycemia, hypertension, and dyslipidemia are the cornerstones of reducing morbidity (Anjana et al., 2023).

For prevention and control of NCDs, interventions focusing on diet, physical activity, tobacco, and alcohol control with policy modifications are needed. These interventions require resources to have effective outcomes. When one weighs the kind of fund allocation on the above interventions, which are mostly non-tangible in nature against the curative initiatives, which comprise medicine, equipment, buildings and so on, which are tangible in nature, the planners end up spending on tangible heads. As Green states in his book, the tangibles (measurables) drive away the intangibles (Green and Green, 2007). In a democratic country where political leaders and parties seek support during elections always prefer to have tangible interventions available for longer. That attracts the vote for getting elected. The dialysis units and construction of buildings are some examples that create a good impression on the community members. Experiences from other parts of the globe substantiate this preference for tangible measures. An exploratory study on priority setting in the health sector of Kenya found that less visible community health services that focus on health promotion, disease prevention, and referral have been neglected within the prioritization process in favor of more tangible curative health services (McCollum et al., 2018).

1.7. RATIONALE

Understanding how healthcare organizations or public health agencies make decisions will help us decide on what to be done to improve legitimacy and fairness in decision-making. An analysis of the budget allocation of an organization gives us insights into

its priorities. There needs to be more literature in research on setting of priorities and budgets in public health in India. Only a few studies are there on criteria used for resource allocation and the actual process of priority setting in local health departments. Only few studies have employed budget analysis to understand allocation in local planning. A better understanding of the pattern of resource allocation in decentralized planning will help devise methods for efficient allocation of scarce resources at the local level. Non-Communicable diseases have been taken as the reference disease for this analysis as it is the major contributor to morbidity and mortality and is a unique problem that needs intersectoral interventions planned at local level. Studies in NCD exploring different aspects like burden, program, and evaluation are available. However, studies on priority setting and resource allocation for NCD are scarce.

The present study on decentralized health planning for non-communicable diseases in Kerala aims to understand the pattern of budget allocation for health sector projects, specifically non-communicable diseases, at different levels of Local self-government (LSG) institutions in Kerala during the four year period from 2018 to 2022.

LITERATURE REVIEW

CHAPTER 2

LITERATURE REVIEW

2.1: EVOLUTION OF PLANNING

Planning is a methodical approach to achieving specific goals in the future through the effective and appropriate utilization of current and future resources. (Green and Green, 2007). Fayol identified planning as the first among the five elements of management. By planning he meant examining the future and drawing up the plan of operation. The complex process of planning must consider tangible and intangible resources, as well as take into account work processes and future trends (Rahman, 2012). The basis of planning is recognizing that resources are limited. The process of planning involves allocating limited resources to competing alternatives. Decision-making on resource allocation is central to planning and all development processes (Shuqair, 2015).

Decision making regarding resource allocation is the key function of planning in any organization. A plan is the result of planning decision and it is a statement regarding how resources will be used to achieve the organization's objectives (Green and Green, 2007). Planning developed as a separate identifiable activity in organizations as a result of industrial growth during twentieth century. The rise of state economic planning was initiated in Russia following the Russian revolution in early twentieth century (Brown and Hinrichs, 1931; Gregory, 2014). During the depression of the 1930s the United Kingdom witnessed increased state intervention and rise of state

planning (Weir and Skocpol, 1985). It was also seen in the New Deal activities of Roosevelt in the USA (Skocpol and Finegold, 1982). During the Second World War, the shortages caused by wartime economy, and military needs, led to centralized controls in many countries. Post-World War, reconstruction of most countries, especially in Europe involved state intervention in economies. Most countries following independence, developed national economic and social planning structures (Kumssa and Jones, 2014; Mkandawire, 2004; Molyneux, 2008; Sunkel, 1969; Wood and Gough, 2006). In India, the first five year plan dates back to 1951(Chakravarty, 1998; Sarma, 1958). Deviating from the concept of revenue administration alone, which was the core priority of colonial governments, independent nations started envisaging development goals and started planning for the same. Thus, countries started planning for National development to achieve rapid, balanced, economic and social development. The National development Plan is a combination of sectoral plans including health (K.Park, 2023).

2.1.1: Evolution of Health planning

At the centre of development planning is Health planning. Health status of a community is strongly related with factors in other development sectors like poverty, education levels, nutrition, environment, sanitation, housing attitudes, behaviors and access to health care (Green and Green, 2007). The evolution of health planning across the globe happened alongside the progress with development planning (Bauer, 2019; Martin, 2020).

The types of interventions an organization plans for maintaining the status of health depends on the perspective they hold regarding health. The narrowest, yet frequently held perspective, is that of a medical model of health, in which the role of health services is seen as paramount. A broader perspective realizing the significance of social determinants of health, with a focus on health promotion and primary prevention gained importance (Friedrich, 2018; Walley et al., 2008). The Alma-Ata Declaration of 1978 was a significant milestone in twentieth-century public health, emphasizing primary health care (PHC) as essential for achieving the goal of Health for All. In the context of the sustainable development target of Universal Health Coverage also, upholding this broader perspective of PHC is critical (Kluge et al., 2018).

Health is also an investment, as the productive ability of our work force depends on it. Hence, for allocating resources in health sector amidst scarcity, market can never be a determinant as in the case of other individual consumption good. State is primarily responsible for allocation in health and need based health planning is the way we have. The role of state in running a health system includes policy formation, financing, service provision and regulation (Green and Green, 2007). For effective discharge of these responsibilities, the corner stone is effective health planning.

Following the great global depression, world countries started developing new economic perspectives. Post second world war, national development planning started to flourish across the globe (Chang, 2003). In many countries, shifts in political power and ideology led to establishment of government responsibility in social welfare

services, especially health and education. This slowly resulted in development of explicit planning structures. For example, UK established its National Health Service in 1948 (Gorsky, 2008). For many countries, state health planning started by 1970s. For India, and some Latin American and African countries, health planning activities can be traced back to a much earlier date (Chakravarty, 1998; Kumssa and Jones, 2014; Sarma, 1958; Sunkel, 1969). The Nehruvian model of economic planning in India, bolstered by the pioneering contributions of economist P.C. Mahalanobis, established the foundation of India's development planning (Gupta, 1993; Mahalanobis, 1960; Mishra, 1994). A comprehensive health plan in modern India was developed based on the Bhore Committee report (Shukla et al., 2018).

2.1.2: Evolution of decentralized planning in India

Decentralized planning has evolved as a system with improved efficiency and responsiveness to community development (Shuqair, 2015). More than three-fourth of the developing countries have adopted some form of local governance (Shuqair, 2015). In India, the Balwant Rai Mehta Committer of 1957, initially recommended democratic decentralization and finally led to Panchayati Raj (Pal, 2001). With the 73rd constitutional amendment, Panchayati raj Act came into force in 1992 (Pawar and Yadav, 2013). The 74th Amendment provided for a two-tier structure of urban local bodies; municipal corporations in larger cities and municipalities in smaller towns.

From the first five-year plan itself, there was emergence of need for local level planning in India, which culminated in the creation of community development programs (Naku and Afrane, 2013; Neale, 1985). At this juncture the experiments with community development in Nilokheri, are noteworthy (Loveridge, 2017). Many such experiments and innovations in decentralizing planning process culminated in the 73rd and 74th constitutional amendment in 1992, and the enactment of Panchayati Raj Act. This led to the paradigm shift in governance structure of India from a two-tier system to a three-tier one(Chakravarty, 1998; Pal, 2001; Sarma, 1958). The initiatives in decentralization at national level is summarized in table 2.1. (Annual Report 2006-07 of Planning Commission, 2007).

Table 2.1: National Level Initiatives for decentralized planning

Year	Name of Committees and Reports	Initiatives
First Five-Year Plan 1951-56	Community Development Blocks	Planning at Four levels- National, State, District and Local
Second Five-Year Plan 1956-61	District Development Councils	Prepare village level plans with the participation of people and make it part of national level plan.
1957	Balwanth Rai Mehta Committee Repoet 1958	Three tier local administration Formation of panchayth committees at all levels with elected representatives
1969	Planning commisssion	District plan
1977	Asok Mehta committee	Suggestions for improvement of Panchayati raj system
1978	Prof M L Dantawala	Block as a link between district and village
1983-84	Centrally sponsored schemes/ Reserve Bank of India	Suggestions for district plan Concept of potential linked credit plan
1984	Hanumantha Rao committee	Decentralisation of functions, funds and freedom District Planning Committee and Cell
1985	GVK Rao committee	Suggestion for involvement in administration for village development

2.2: THE PLANNING PROCESS IN HEALTH

2.2.1: Steps in Planning

Health Planning involves the orderly process of defining community health problems, identifying needs and resources to meet them, establishing priority goals, and projecting administrative action to accomplish them. The steps in planning cycle are shown in Fig2.1. With this process, a plan is formulated, which is the blue print for taking action. Elements of a plan are objectives, policies, programs, schedules and budget (K.Park, 2023). Part time committee approach of bringing together health officials, politicians, general public representatives, interested volunteers is often followed in India for plan formulations. In some other countries full time professional planners does the job (Reinke, 1988).

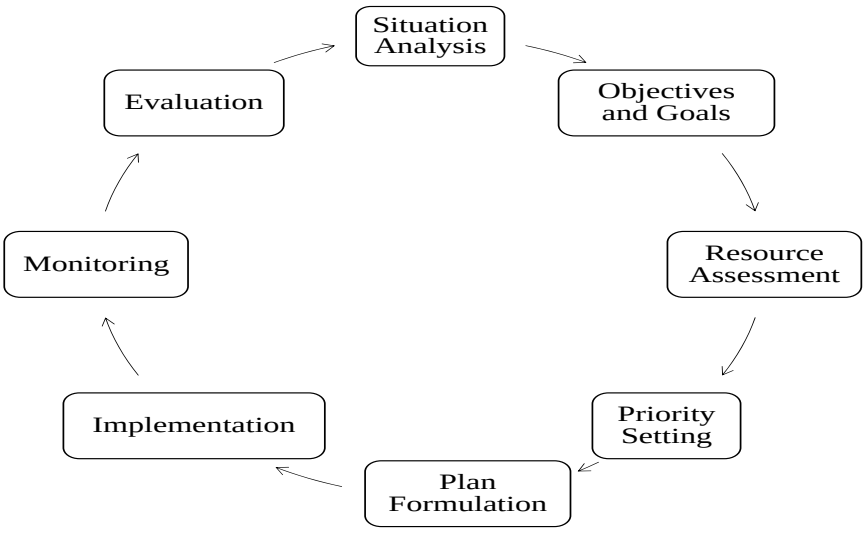


Figure 2.1: The Planning Cycle

2.2.2: Types of Planning

Different classifications of planning are there based on different dimensions. Based on objective, there can be activity or allocative planning. Activity planning refers to the setting of timeline and schedules for implementation of preset activities. But the more complex and contentious side of planning is allocative planning, which involves decision making on how resources should be spent (Green and Green, 2007).

Based on the scope of the subject matter covered, planning can be categorized into comprehensive planning, program planning and project planning (Reinke, 1988). Comprehensive planning is the framework on which specific plans are implemented. It is concerned with prioritization, thereby deciding on the allocation of resources to various health programs, based on their relative importance. Policy analysis is a major component of comprehensive planning. In program and project planning, more focus is given to implementation aspects, like time line, staffing and specific activities for each target. Project plans are focussed on high -impact health activities against single health problems(Reinke, 1988). Projects are designed to achieve specific measurable objectives through a certain combination of resources oriented toward particular population groups. It's time line and budget is limited.

Based on the duration of plans, there are long term plans over twenty years, intermediate -term spanning around five years and annual plan tied to yearly budgeting cycle (Reinke, 1988). Long term plans are primarily policy directions, whereas short term plans are associated with direct administrative action.

2..3: PRIORITY SETTING IN HEALTH

"Priority setting" refers to processes that allocate resources with the goal of maximizing health impact within a given expenditure limit ("Priority-Setting in Health," 2012). Setting priorities is considered as the heart of the planning process. The needs and demand for health resources exceeds the resources available, resulting in the need for priority setting, that is choosing between competing demands (Green and Green, 2007; McCollum et al., 2018). We need to make decisions for allocating limited resources for development activities including health. The core of planning is analysis (in the face of constraints) of alternative means of achieving established goals ranked in some order of priority.

2.3.1: Challenges in Priority setting in Health

Though defined as a systematic and objective process, health planning, especially at local levels is often intuitive and subjective projection of activity based on past experiences. Judgement and wisdom are essential for prioritization, but it should be used along with the ability of synthesizing numerous relevant details(Reinke, 1988). Despite decades of our experience with priority setting, decisions on resource allocation in health sector are often suboptimal, and lacks scientific methodology and evidence base. Inequities, gaps in coverage of services, increasing burden of diseases despite varied health interventions, substantiates this argument of issues in priority setting. During planning process, especially decision making for setting priorities, stakeholders like technical experts, politicians, and common man differ grossly in their preferences. Many demands of the public will not match with their actual heath needs,

politicians prefer plans with more tangible and quicker outcome, experts fail in making informed decisions based on evidence and go by gut feeling, political considerations and popular pressure undermines the whole spirit of priority setting. Even between those following scientific methods, it's difficult to balance different dimensions. Epidemiologists give weightage for mortality and morbidity, politicians, and social scientists follow popular feeling, economists focus on cost and administrators are concerned with availability of technical methods for control of the problem (Reinke, 1988).

2.3.2: Practices and models in priority setting

Need for priority setting in limited resources is undebatable. But the question is how to choose the appropriate method for determining priorities. All health systems across the globe struggle to meet population health needs, maintaining distributive theories of justice. There is no one theory or method which consistently guides priority setting procedures in public health (Daniels, 2000). In developed countries with universal coverage systems, decisions on resource allocation are made by public agencies. But the legitimacy and fairness of such decisions made are often questioned and hence the growing need to follow a fair process in rational priority setting (Singer et al., 2000). Countries like United Kingdom tried to address this need for clear process in rationing by establishing the National Institute for Clinical Excellence (NICE)(Horton, 1999).

Decision on allocation of health care resources is made either based on evidence, analysis and explicit social values within an accountable process or by implicit

decisions based on ‘what was done before’, ‘gut feelings’, ‘educated guesses’ or even ‘what would cause the least difficulties’ (Drummond et al., 2015).

An ethical framework termed Accountability for Reasonableness (A4R) defines four conditions for legitimate healthcare coverage decision processes: Relevance, Publicity, Appeals, and Enforcement (Daniels, 2000). Key elements of this fair process are listed in table 2.2: An assessment of the potential of AFR in supporting priority-setting and other decision-making processes in health systems was done by Jens Byskov et al at district level in Kenya, Tanzania and Zambia. They found that, the framework helped in increasing awareness of the importance of fairness and improved participation of health team members and stakeholders in decision making process (Byskov et al., 2014). Health systems of Canada, the United Kingdom, New Zealand, and Sweden, and parts of the US system, are applying this framework. National Institute for Health and Clinical Excellence (NICE) has incorporated its principles (Daniels and Sabin, 2008). A Systematic exploration done using this framework concluded that moving towards enhanced A4R needs continuous efforts, in improving transparency, participation and multi-stakeholder deliberation, with decision criteria reflecting normative and societal objectives (Wagner et al., 2019).

Table 2.2: Decision making prompt tools under Accountability for reasonableness framework

DECISION MAKING PROMPT TOOL	Accountability for reasonableness
RELEVANCE	Decisions should be made on the basis of reasons (e.g., evidence, principles, arguments, etc.) that 'fair-minded' people agree are relevant under the circumstances.
PUBLICITY	The process, decisions, and their rationales should be transparent and accessible to relevant stakeholders.
REVISION & APPEALS	There should be opportunities to revisit and revise decisions in light of further evidence or arguments. There should be a mechanism for challenge and dispute resolution.
EMPOWERMENT	There should be efforts to minimize power difference in the decision making context and to optimize effective opportunities for participation.
ENFORCEMENT	There should be either voluntary or public regulation of the process to ensure that the other four conditions are met.

In order to aid managers and clinicians in the process of setting priorities, numerous tools or frameworks have been proposed, such as: quality adjusted life year (QALY) league tables, cost-benefit analysis, needs assessment, defining core services, program budgeting and marginal analysis (PBMA), and historical allocation processes (Mitton and Donaldson, 2003). Each of the above-mentioned approaches for priority setting have been critiqued (Birch and Chambers 1993, Mooney et al. 1992, Wordsworth et al. 1996, Maynard and Bloor 1998, Mitton 2002). Despite the number of approaches, to date there has been limited development of formal priority setting frameworks for application at the level of a single, integrated health organization, across major portfolios (e.g., between acute and community care). A participatory action research (PAR) project was initiated in the Calgary Health Region with the purpose to develop

an explicit, evidence-based approach to priority setting to aid decision makers in the process of resource allocation across major service areas at the level of the entire health authority (Mitton and Donaldson, 2003).

Mooney advocated providing group of community members with information about the health of the community, about available resources and how these resources are currently used. This group would then be asked to reflect, discuss and debate amongst themselves what to them constitute the bases for claims (e.g. age, gender, capacity to benefit, socioeconomic status, geographic location, etc.). Under the communitarian claims approach, citizens are not being asked to make decisions per se, rather to determine the bases for claims and their relative importance (or weighting) which would in turn be used by bureaucrats and health care planners to guide their resource allocation decisions (Mooney, 2005).

Program budgeting is a retrospective appraisal of resource allocation, broken down into meaningful programs, with a view to tracking future resource allocation in those same programs. Marginal analysis is the appraisal of added benefits and added costs when new investment is proposed (or lost benefits and lower costs when disinvestment is proposed), in an incremental way. Instead of seeing investment on the level of a hospital or drug budget, the focus switches to specific health objectives such as reducing death rates from heart disease, improving indicators of child health, reducing the burden on family care-giver of patients with senile dementia, and so on. Program Budgeting and Marginal Analysis (PBMA) can assist decision-makers in directing

resources, with the aim of maximizing the impact of healthcare on the health needs of the local population. The approach relies on two fundamental economic principles: opportunity cost, or the forgone benefits of the next best alternative use of a given set of resources, and marginal analysis, which examines the incremental costs and benefits of shifting resources from one area to another, to provide insight into whether changes should be made. One of the primary goals of priority setting is therefore to maximize the benefits and minimize the opportunity costs for a given set of resources (Brambleby and Fordham, 2003).

Portfolio Management is another method employed in decision making. The author of the modern portfolio theory is Harry Markowitz who introduced the analysis of the portfolios of investments using indifference curves. Indifference curves represent an investor's preferences for risk and return. These curves should be drawn, putting the investment return on the vertical axis and the risk on the horizontal axis. the most often used measure for the risk of investment is standard deviation, which shows the volatility of the securities actual return from their expected return. The relationship between the assets can be estimated using the covariance and coefficient of correlation (Levisauskait, 2010).

Evidence is often unavailable or not used, resulting in a politically driven process that is open to "trumping" by senior executives and board members. Explicit, transparent processes for priority setting and resource allocation, which draw in local data and

evidence from the literature, should be used, thereby providing less opportunity for protest and trumping (Mitton and Donaldson, 2003).

Among these priority setting methods identified in literature, certain techniques are commonly employed in low resource settings. The foundational epidemiological methods of using Disability-Adjusted Life Years (DALYs) and Quality-Adjusted Life Years (QALYs) are advocated in most planning documents. But the application of the same in actual practice is variable. The use of database of cost-effectiveness estimates for various health interventions provided by international agencies as well as those generated by Health technology assessment agencies of respective countries has found more application (Drummond, 2015; Leelahavarong, 2019; Alkhaldi, 2021). Multi-Criteria Decision Analysis (MCDA) is increasingly used in health priority-setting in LMICs as it allows for the incorporation of various criteria beyond just health outcomes and costs. These criteria can include equity, feasibility, social acceptability, political considerations, and sustainability (Baltussen, 2010; Youngkong, 2012). Consensus building and Delphi technique in various formats are followed in many countries. The Delphi method is a structured process that involves a series of rounds of expert consultation, where experts (e.g., policymakers, clinicians, academics) provide their opinions on the priority health issues. Feedback is then provided in the form of aggregated responses, and the process continues until a consensus is reached. This technique is particularly useful in LMICs where there is a need for expert input but where data may be scarce or unreliable. Literature identifies that in low resource settings, especially for local planning community based participatory methods are

more commonly employed. How much of scientific methodology and systematism is being followed in this approach needs to be studied further. As health systems continue to evolve, it is critical to develop and refine methods that enable policymakers to make informed, equitable, and cost-effective decisions in health planning in low resource settings.

2.3.3: Competing programs; prioritizing between health functions

For considering program alternatives, a framework of health functions will be helpful. A program organize activities for the efficient utilization of combinations of resources, for achieving a goal. A program can have more than one health function. For addressing health problems in a population, we can plan resource allocation for specific programs like Communicable diseases, NCD, Nutrition, Maternal and child health, trauma and safety and so on. Another approach can be categorizing them into preventive, curative and rehabilitative services. Further break down of project formulation can take into account important dimensions such as age, urgency of need, or vulnerability (Reinke, 1988).

2.3.4: Rational priority setting

A thorough knowledge of epidemiology, demography, planning and economics is needed for scientific assessment of actual needs of a population. Indicators like incidence, prevalence, cost of treatment etc can be used for assessing actual health needs of a community. A literature review of policy studies by Shiffman et al evaluate three different models of agenda setting for global disease control. The first one,

rational model suggests logical selection based on global burden and the availability of cost-effective interventions. A slow process where priorities emerge gradually is the incremental model. Here interventions reach people through slow diffusion. In the third model, during a long period of stability, only selected population have interventions, which is punctuated by bursts of attention as these interventions spread across the globe in concentrated periods of time. This is the punctuated equilibrium model (Shiffman et al., 2002).

Rational model is frequently used by economics -oriented analysis. Steps involved are defining the problem, finding alternative solutions, and evaluating them based on objective criteria (Shiffman et al., 2002). Different quantitative methods are available, which are data -driven for choosing between competing alternatives. Economic evidence is used in cost-effectiveness, cost-benefit and cost-utility analysis. Cost-effectiveness analysis compares the cost of an intervention with its expected outcome. Comparisons can be made between health programs with different outcomes. Prioritizing activities that are more cost-effective helps in ethical allocation of limited resources of health and thereby maximize the health benefits for the population (Musgrove and Fox-Rushby, 2006). But, evidence on cost-effectiveness in low- and middle-income countries is scarce. And, because many more criteria are important, cost effectiveness can never be the lone consideration for health system policies and budgets (Musgrove and Fox-Rushby, 2006).

In addition, epidemiological evidence like burden of disease analysis using disability-adjusted life years (DALYs) is frequently used by international institutions in recent years and are recommended to national governments for determining health policy. Study from Ghana argues that these are normative approaches, based on a summary measure and has inherent problems with these approaches (Reichenbach, 2002).

Operations research (OR) is another useful technique which is now gaining importance in health planning(Duckett, 2012; Kumar, 2019; Malhotra and Zodpey, 2010). It uses analytical methods to improve decision making, providing scientific substitute for judgment and intuition. A consensus definition of OR in the context of public health developed in a global meeting held in Geneva in 2008 is "any research producing practically usable knowledge (evidence, findings, information) which can improve implementation of a plan or program (e.g., effectiveness, efficiency, quality, access) regardless of the type of research (methodology) falls within the boundaries of OR." The literature on evolution of operations research identifies its use in management in different fields. Operational Research methodologies like simulation and Data Envelopment Analysis have been applied for improving decision-making, where a range of problem-solving techniques like linear programing and algorithms are used (Noorain et al.,2023). Many mathematical models based on production theory are found to be employed for decision making in resource allocation based on efficiency. The feasibility of models and the appropriateness of assumptions while using OR methods in health planning have been investigated right from the initiation of its adoption by formal health planning agencies (Shuman et al., 1974). The use of

operations research is based on the assumption that all parts of an organization are related and are interacting. OR methods help solve problems by modelling it in mathematical terms. This models will assist health planners in decision making (Duckett, 2012). The methods of OR used in examining a system is useful in understanding health care system, and will help test different strategies and chose between alternatives. Relative technical efficiency (RTE) is one such indicator used in OR to support decision-making in health care (García-Alonso et al., 2019). For accounting for effect of quality outcomes as well as context variables, data envelopment analysis was used in a study done on women's health promotion program in Bucaramanga, Colombia (Ruiz-Rodriguez et al., 2016). Literature identifies several such studies employing OR methods in problem solving and decision making, especially in health planning (Michael Pinedo, 2022; Reinke, 1970; Vieira et al., 2016). The relevance and usefulness of the methodological approaches in Operations research in advancing public health has been well established (Lee et al., 2013; Malhotra and Zodpey, 2010).

Rational models in isolation fail to capture, how policy is formulated in practice. It is highly unlikely that the actors follow a logical linear fashion (Shiffman et al., 2002). Most of the times, especially in local planning the actors may not be aware of the alternative options and its weightages. This prompts them to resort to the less complex and conventional incremental model. Policy makers are inclined to maintain status quo and bring in only small changes at a time.

An in-depth exploration into how primary care physicians derive their health care decisions found that access and use of evidence from research or other sources for decision making was rare. They mostly relied on “mindlines”—collectively reinforced, internalised, tacit guidelines. And, these mindlines were negotiated with different actors, mediated by organisational demands and constraints, resulting in a socially constructed “knowledge in practice” (Gabbay and le May, 2004).

2.3.5: Influence of political and organizational factors on priority setting

Political will is one of the crucial components needed for resource allocation in priority areas. The sequence of political will needed is; will to develop, will to plan and will to implement (Reinke, 1988). General policy decisions of the local bodies have a significant bearing on the selection of priority areas, cost and specific interventions. Policy decisions and legislative mandates can reduce flexibility in priority setting. Short term political objectives get more attention than supporting continuing development effort, which often have intangible outcomes. A paper from Ghana on the politics of priority setting for reproductive health examines the influence of political and organizational factors. It suggests measures for improving traditional priority setting tools by adding empirical measures of political and organizational attention to an issue, and through a new measure – policy priority (Reichenbach, 2002).

Reinke noted five features of the political process as major threats to successful health planning (Reinke, 1988). Shifting priorities as per the plan may benefit some segments of the population, whereas it can adversely affect some other. Even potential

beneficiaries may resist change, not realizing the planned effects. Planning is inherently controversial. Second feature is the health perspective of politicians which often does not match societal priorities. They may be influenced by their own personal experiences. They may give priority for diseases like mental health, cancer, disability etc if they have personal experiences with these illnesses, when the actual need of the community is something else. The most significant influence is the fact that politicians prefer visible curative endeavors, whereas planners foresee the potential of preventive services. The example given by Reinke in this discussion is that a hospital dedicated to lifesaving services is a much more attractive monument to political accomplishment than an immunization program that achieves untold benefits for unknown persons at indefinite future times. Even within hospital services, costly, high end sophisticated services like organ transplant gains more attention than one thousand applications of oral rehydration therapy (Levin, 1977). Fourth compelling feature is the short time horizons faced by politicians. Health benefits of especially preventive services tend to accrue more slowly. Politicians prefer not only visible outcomes but they should be rapid as well. These features often adversely affect planning for NCD control, especially promotive and preventive interventions, as they inherently have slowed and intangible outcomes. Conflict between health authorities and politicians is the last feature which often results in lost opportunities of constructive action. Ignorance of political process and aloofness from controversial issues by health authorities negatively influences planning process. In this matter, the argument put forward by Reinke is that the political process is critical in planning and it can never be isolated from the political process. Controversies will arise when we introduce technical

analysis in the place of personal judgements and deal with politics of power. We need to balance rationality with interests of diverse constituencies and value systems.

2.3.6: Criteria used in priority setting

A study done among Local Health Officers(LHO) to understand factors influencing resource allocation found that only less than half of LHOs used economic analyses or conducted needs assessments for setting priorities. The factors influencing allocation decisions were having sole provider status in the community, effectiveness of interventions, previous pattern of allocation, opinion from boards of health and public expectations (Baum et al., 2011).

Another study done in North Carolina found that health officials considered data based criteria more important. However, in actual practice subjective criteria was used for priority setting. They found that health officers' education and tenure, were influencing factors. Barriers to the use of objective criteria for priority setting need to be analyzed (Platonova et al., 2010).

Other criteria found relevant for decisions about public spending for health care included economic efficiency criteria (public goods, externalities, catastrophic cost, and cost-effectiveness), ethical reasons (poverty, horizontal and vertical equity, and the rule of rescue), and political considerations (Musgrove, 1999). There can be incompatibility or inconsistencies between these criteria, and sometimes they warrant a hierarchical sequence in consideration of each criterion. For instance, choosing a more

cost-effective intervention can lead to less equitable distribution of health benefits (Musgrove and Fox-Rushby, 2006). Appropriate consideration of these criteria, balancing efficiency and equity, ensures that the right health care interventions are financed with public funds (Musgrove, 1999).

2.4: DECENTRALIZED PLANNING

Decentralization transfers authority and responsibility of major government functions from central to sub-national governments viz local governments, civil society, and the private sector ("Decentralization," The World Bank, 2013). There is transfer of power and decision-making from central stakeholders to sub-national levels, bringing decision-making closer to the population (McCollum et al., 2018). Decentralization, by responding to local needs enhances allocative efficiency and inclusive local decision making happens ("Decentralization," The World Bank , 2013).

Types of decentralization include political, administrative, and economic decentralization. Political decentralization transfers policy and legislative powers from central governments to democratically elected local bodies. Whereas, in administrative decentralization responsibilities are given to local civil servants under the local governments ("Decentralization," The World Bank, 2013). The most crucial element of decentralization is Economic decentralization (Rotulo et al., 2020).

Economic decentralization includes two distinct policy options: fiscal federalism, where there is decentralization of the authority of spending, and fiscal decentralization,

where both the responsibility for pooling as well as the authority of spending is decentralized (Rotulo et al., 2020; Weingast, 2006). In fiscal federalism, the national government finances healthcare centrally and distributes them to local levels using allocation formulas. While, the decision on spending is taken by the local bodies. In Fiscal federalism local communities can directly participate in setting up local spending priorities (Rotulo et al., 2020). In Kerala democratically elected councils at the district, block, village, municipal, and urban levels, decides on allocation of funding according to local priorities (Elamon et al., 2004).

Common decentralization aims to increase citizen participation, accountability, efficiency and equity are not likely to be achieved if sub-national levels do not have the capacity to make wise decisions or respect for accountability mechanisms. Experiences of devolution in Kenya has found that county governments have often prioritized visible health interventions which appeal to their electorate, leading to over-emphasis on curative health services with neglect of preventive services, including community health approaches (McCollum et al., 2018).

2.5: BUDGET ANALYSIS

To understand the process and outcome of priority setting in decentralized health planning, one of the methods employed is budget analysis. The strength of budget analysis is the nature of financial data, which gives us concrete and hard evidence. It

reflects the actual priorities of any organization while planning and its anticipated results in financial terms. Thus, financial budgets represent the dollarizing of plans ("Essentials of Management," Koontz, 2020). Budget analysis was found in literature as a tool which has been used to build public accountability and improves prioritization in allocation of public funds, making them transparent. It critically evaluates budgetary allocations made by governments and can be used for monitoring different stages of the budget process to determine the extent to which policies translate into outcomes (Pant, 2016). Budget analysis involves analysis using standard techniques of hard quantitative data, accessed from government sources. The credibility of information generated from budget analysis has a greater potential to influence policy than evidence from other sources (Aiyar and Behar, 2005). Budget analysis helps in generating information which helps in making public spending more efficient and responsive. A thorough analysis of budget allocations can contribute to public debates on budget issues and what the governments need to deliver with the use of scarce public resources. There are some interesting case studies where budget analysis was used as a tool for improving resource allocation process, and government accountability.

2.5.1: Budget analysis in practice

DISHA (Developing Initiatives for Human and Social Interaction), an non-governmental organization (NGO), based in Gujarat, engaged in budget analysis and advocacy work in India. DISHA uses budget analysis for providing information for ensuring that marginalized communities receive resources and services as per

constitutional mandate. DISHA locates and secures budget data and develops an understanding of the budget process. They focus on the allocation and use of government budgets earmarked for tribals through the Tribal Sub-Plan (TSP)(Malajovich and Robinson, 2006).

One of the pioneering global works on budget analysis was that of Institute for Democracy in South Africa (IDASA). The Children budget unit (CBU), did research on budgetary allocations towards programs for the well-being of children in the country, and made recommendations to better design programs to better child rights. ("A Guide to using Budget Analysis - CBGA India," 2016.; Streak, 2001)

2.5.2: A Framework of Budget Analysis

One of the most important elements of budget analysis is carrying out detailed analysis of budget allocations and declared policy priorities; trends in budget allocations over time; and allocations to different groups, regions, sectors ("A Guide to using Budget Analysis - CBGA India," 2016). A six-step framework of budget analysis provided by Centre for Budget and Governance Accountability (CBGA) is given in figure 2.2.

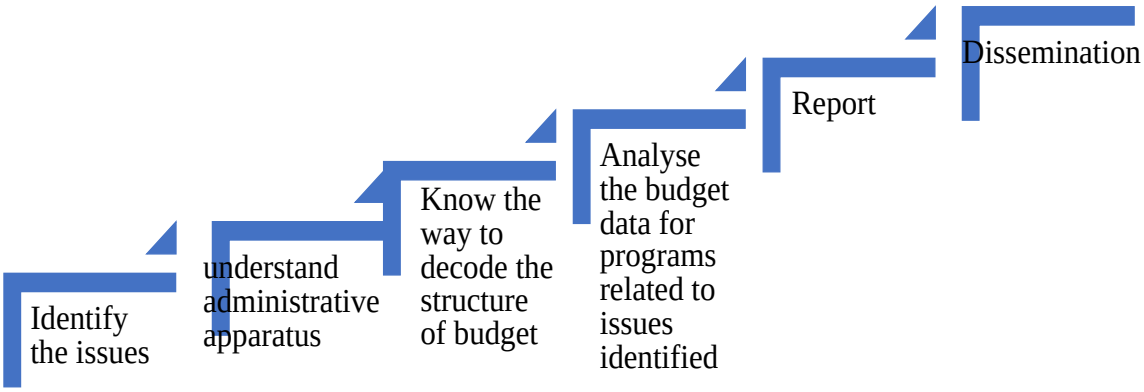


Fig 2.2: Six-Step Framework for Budget Analysis

2.5.3: Approaches in Budget Analysis

There can be various approaches for budget analysis ("A Guide to using Budget Analysis - CBGA India," 2016).

- Analysing budget policies –This includes analysing the fiscal and economic assumptions behind the budet proposal of government. Takes into account economic outcomes like inflation, growth and employment.
- Sectoral Analysis – Analysis regarding budget allocation for specific sectors. Analysis compares allocations made between different sectors and identifies inadequacies in allocation for concerned sector.

- Analysis through specific lens – Budgets analyzed from the perspective of a disadvantage section of population or neglected programs.
- Analysis of trends in budget allocations over time – Analysis of allocation over a period of time for identifying trends.
- Revenue analysis – Focusing on tax and revenue aspects of the budget, assessing tax policies, compares existing level of tax–GDP ratio, and probes tax exemptions

The current study employs sectoral analysis, analysis through specific lens and analysis of trends.

2.5.4: Financial analysis during Budgeting

Financial considerations are at the heart of planning process. The four categories of financial analysis that conform to the planning, budgeting, implementation, and evaluation stages of the programming cycle are depicted in table 2.3. Once, cost analysis of program options is done for strategy formulation, a schedule of funding is prepared for program option chosen. This forms the budget (Reinke, 1988).

Table 2.3: Categories of financial analysis at each stage of program cycle

Category of financial analysis	Stage of Program cycle
Cost analysis for strategy formulation	Planning
Scheduling of Financial needs: tactics for implementation	Budgeting
Management of disbursements: Expenditures	Implementation
Accountability and control	Evaluation

Though non-economic factors mostly affect the planning decisions, determining realistic financial needs of program chosen is essential. Those needs are translated into the financial schedule, the budget. Analysis is done by categorizing budget allocation using different dimensions like line budget and program budgets. The line-item budget organizes planned costs along lines of input categories like human resource, purchase of consumables, equipment, infrastructure, transport etc., whereas in program budget organizes costs under heads of specific programs (Reinke, 1988).

2.6: PRIORITIZING RESOURCE ALLOCATION FOR NON-COMMUNICABLE DISEASES

Non communicable diseases have become a major contributor to morbidity and mortality across the globe (Murray et al., 2020; Vos et al., 2020). India has been experiencing the epidemiological transition with two-thirds of disease burden attributed to non-communicable diseases (NCDs) and injuries (Dandona et al., 2017). As per the ICMR-INDIAB study done during 2018-20, the prevalence estimates of diabetes and other NCDs were higher than previous estimates. The prevalence of diabetes was 11·4% (95% CI 10·2–12·5), prediabetes 15·3% (13·9–16·6), hypertension 35·5% (33·8–37·3), generalised obesity 28·6% (26·9–30·3), abdominal obesity 39·5% (37·7–41·4), and dyslipidaemia 81·2% (77·9–84·5). They noted that there were wide regional variations in prevalence of NCDs and hence there is an urgent need for state -specific policies and interventions to tackle the rapidly rising epidemic of NCDs (Anjana et al., 2023).

Among all states of India, Kerala is experiencing the highest epidemiological transition level with an epidemiological transition ratio of 0.16. Over 90% of Kerala's premature mortality is contributed by NCDs (The India State-Level Disease Burden Initiative - Public Health Foundation of India, 2018). The national program for prevention and control of cancer, diabetes, cardiovascular diseases, and stroke (NPCDCS) was launched nationwide and subsequently in the state of Kerala in a phased manner starting from 2008. In spite of the efforts made by the programme, most adults (82.4%) in Kerala had at least one of the NCD risk factors. The control status of patients under treatment was less than 15% (Sarma et al., 2019). According to 2017-18 National NCD monitoring survey, 98% of Indians do not take adequate fruits and vegetables and the proportion doing adequate physical activity was 59%. Prevalence of all the behavior risk factors of NCD including tobacco and alcohol use was high. (Mathur et al., 2021).

But the global policy response is not in line with the enormous health, economic and social burden of NCDs (Heller et al., 2019). In a lancet paper in 2008, stuckler et al reported that WHO budget allocations were disproportionately skewed, and was not matching the disease burden. WHO funds and disease burden were not correlated, irrespective of whether measured in terms of mortality or DALYs. Three-fifths of WHO funds were spent on communicable diseases excluding HIV, tuberculosis, and malaria, which accounted for roughly 11% of global mortality. Conversely, non-communicable disease accounted for more than half of global mortality and almost half of global DALYs, but received roughly a tenth of all WHO funds (Stuckler et al.,

2008). A reassessment of WHO's budgetary allocation was done five years later. During the period of 2008-13 too, allocation was skewed towards control of infectious diseases. WHO itself has recognised this mismatch between priorities and is now trying to undergo reforms by establishing clear priorities and improving management and governance practices. The issues identified are that voluntary funding is more for infectious diseases and the agendas covered by world health assembly often do not reflect the international burden of disease (Nozaki, 2013). The 66th world health assembly discussed strategic allocation and improved alignment of limited resources.

Studies which examined the budget allocation for NCD programs across different countries and regions revealed that many countries allocated less than 1% of their healthcare budgets to NCD programs, despite the increasing burden of these diseases (Henning, 2016.; Mendis and Fuster,2009). In India, total spending on NCD by the government is low. NCD spending accounts for one-fourth of total health spending of the country and it is significantly low in economically vulnerable states (Gupta and Ranjan, 2019). This necessitates an urgency in realigning the priorities to address the economic implications due to high morbidity and mortality caused by NCD.

2.7: COMMUNITY LEVEL INTERVENTION IN CONTROL OF NCDS; ROLE OF DECENTRALIZED PLANNING

Prevention of NCDs depend on individual level life-style modifications, which can be strengthened by mass implementation of societal and environmental interventions. Rather than telling people to do things decided by health professionals, community

participation in making decisions and implementing them is crucial. There is wide acceptance among all levels of stake holders that the problem of non- communicable diseases can be controlled by strategies focusing on prevention, applying principles of primary health care with emphasis on community participation and intersectoral co-ordination (Narain, 2011). The response to the NCD problem should be in accordance with the local contexts and for this stronger governance structure is crucial (Heller et al., 2019). Evidence suggests that interventions for NCD control should extend beyond the health sector and be targeted within the natural settings at various stages of lives of those in need (Mikkelsen et al., 2019). Many at times it is assumed that it is the responsibility of the health system to address this problem. But, in reality the conducive behavioral and environmental conditions will control the risk factors associated with NCDs (Ahmad and Talib, 2016; Pati et al., 2020; Ohta et al., 2021). This leads us to adapt health promotion approaches. Health promotion, is the process of enabling people to increase control over one's own health, and to improve health needs (Kumar and Preetha, 2012). This necessitates the provision of optimal architecture for healthy choices ("nudges") with necessary physical spaces for exercises, sufficient resources and information related to healthy diet (Thaler and Sunstein, 2009) and so on.

While initiatives of LSGs engaging with the NCD control program for screening and treatment is successful (Ahmad and Talib, 2016; Wickramasinghe et al., 2018; Pati et al., 2020; Thakur, Paika and Singh, 2020; Ohta et al., 2021), they were not helpful in achieving complete NCD prevention. For achieving greater success, the LSG

institutions need to focus on prioritizing NCD control interventions at the grassroot level. Published literature shows at the local level, there is a little fund allocation for NCD, which causes high morbidity and mortality (Ajisegiriet al., 2021; Ohta et al., 2021). This clearly shows how the planning has gone wrong while setting priority that led to suboptimal use of resources (Baltussen and Niessen, 2006). Many at times the LSG institutions set priorities without considering the disease burden. The general practice in such instances is creating new infrastructure, purchase of drugs and equipment, organizing medical camps and health education programs (Ajisegiriet al., 2021; Ohta et al., 2021).

Evidence suggests that measures to ensure active participation of health system and enhancing facilitation of planning are crucial in improving local planning process (Shukla, Khanna and Jadhav, 2018). For this, effective institutions for capacity building of stakeholders are needed. Skills in developing public positioning of an initiative and convincing political leaders are essential for addressing the current challenges in local planning (Shiffman and Smith, 2007). Intersectoral co-ordination and community participation will improve preventive strategies such as, lifestyle modification for healthy diet, physical activity, tobacco cessation, early screening for NCD and providing healthy choices at the neighborhood (Kumar and Preetha, 2012; Budreviciuteet al., 2020). There is paucity of evidence on community-based health interventional studies from developing countries and this necessitates a study on community-based health interventions and its dynamics (Philip, Kannan and Parambil, 2018).

2.8: HEALTH PROJECTS UNDER LOCAL BODIES OF KERALA

Kerala has strong local bodies engaged in decentralized planning for development projects including health. These bodies are officially known as Local Self Government (LSG). These LSG institutions play a crucial role in integrating community health interventions with health services of Kerala. In Kerala, Annual plans are integral part of local level planning that is planned during the financial year cycle by preparing a budget every year. Under the annual plan, projects are proposed in different priority areas identified (Hari, 2022). Project is a document that contains the details of various components of activities which are prepared following certain technical parameters, meant for implementing to solve the development issues or to satisfy the development needs of people an area in a time bound manner (Local Planning, KILA, 2020; Koontz,2020; Hari, 2022). Projects are designed to achieve specific measurable objectives through a certain combination of resources oriented toward particular population groups (Reinke, 1988). It's time line and budget is limited. For each health program implemented in an area, there will be specified goals, which are long term states towards which all the activities of the program are directed. It has no limits of resources or fixed time. But for projects, the starting point is formulation of objectives. It is stated in terms of achieving a measured amount of progress towards a goal. For projects, the objectives derived explicitly states, the quantity and time line of desired status to be attained, and the particular population and geographic area to be included (Reinke, 1988). Objectives are formulated with respect to the health needs of the population. The measurable outputs, targets are set in relation to an objective. To find solutions to a health problem, several projects are prepared, these projects in a sector

are called a program, programs together form a plan (K.Park, 2023). Papers analysing specific health projects implemented by LSGs of Kerala are scarce. Studies reports that some LSG institutions are engaged in initiatives associated with healthy living and primary prevention (Rajesh and Thomas, 2012). The limited studies on implementation of such projects observes that increase in fund allocation contributes to success of LSG participation (J, Durairaj and Thankappan, 2007).

2.9: COMMUNITY INVOLVEMENT IN PLANNING PROCESS

Community participation is one of the main pillars of Primary Health Care.("Primary health care," 2020.) But in public health, there has been a tendency for professionals to assume responsibility for decisions and implementation of health programs without consultation with the people. In recent years there has been a trend toward shifting more responsibility for planning and decision making about primary health care and all development activities to the community (Reinke, 1988).

2.10: INFORMATION IN PLANNING

The extent to which planning can be made systematic and rational depends on availability of data. For decision making in planning, four levels of information is needed; political mandate, expert judgement, existing records and reports, and data collected specifically as part of planning process (Reinke, 1988). Each of these levels of information has its values and limitations.

MINIMAL ELEMENTS OF INFORMATION FOR PLANNING

1. Population Size and Characteristics

Age-sex distribution

Geographical distribution

Transportation and communications patterns

Educational attainment

Socioeconomic status

Health insurance coverage

2. Health Status and Problems

Disease-specific and age-specific mortality, disability, morbidity rates

Water supply sources

Sewerage and waste collection practices

Child feeding practices

Food protection mechanisms

Housing conditions

Vector control practices

Fertility rates

3. Human Resources

Mix of active personnel among major categories

Attrition rates

Age-sex distribution

Type of practice

Affiliation

Location of practice

Training limitations

Training capacity by location and type of institution

Enrollment by location and type of institution

Available teachers

Available funds for training

Size of pool of potential applicants

4. Physical Resources and Organization

Geographical distribution

Diagnostic and treatment services provided

Sponsorship

Organizational relationships and referral patterns

Political factors influencing organizational authority and responsibility

5. Financial Resources

Geographical variations in income

Sectoral distribution of GNP

Investment patterns contributing to development

Availability of foreign exchange

Health expenditures relative to GNP

Health budget relative to total public expenditures

Private vs. public expenditures in health

Current budget vs. development budget

6. Service Statistics

Utilization rates

Annual physician visits per person

Annual dentist visits per person

Hospital discharges

Hospital bed days

Pre-natal visits per live birth

Well-child visits per live birth

Attended deliveries by category of attention

Coverage

Demographic and epidemiologic characteristics of population served

Costs and charges for services

Sources of payment

Productivity standards

2.11: COMPONENTS OF HEALTH SERVICES

The structure and function of health services develops from the organization of resources for satisfaction of health demands. The components of health services include health promotion, prevention diagnostics, treatment, and rehabilitation (K.Park, 2023). Each of this function is a specific combination of human, physical, and financial resources organized to satisfy to some extent one or more existing health demands. These components can be categorized under the levels of prevention. Health promotion like lifestyle changes, health education, nutrition, environmental modification and disease prevention including immunization services comes under primary prevention. Services like screening, early diagnosis and treatment services are

categorized under secondary prevention, whereas tertiary prevention comprises disability limitation and rehabilitation services (K.Park, 2023).

2.12: DOCUMENTATION OF LOCAL PLANNING PROCESS IN KERALA

In this session we are documenting the process and players in local planning in Kerala. The different stages in local planning include environment setting, situation analysis, need identification, vision setting, plan formulation, project, plan vetting, plan approval and plan implementation (Local Planning, KILA, 2020; Hari, 2022). The planning process is schematically represented in figure 2.3.

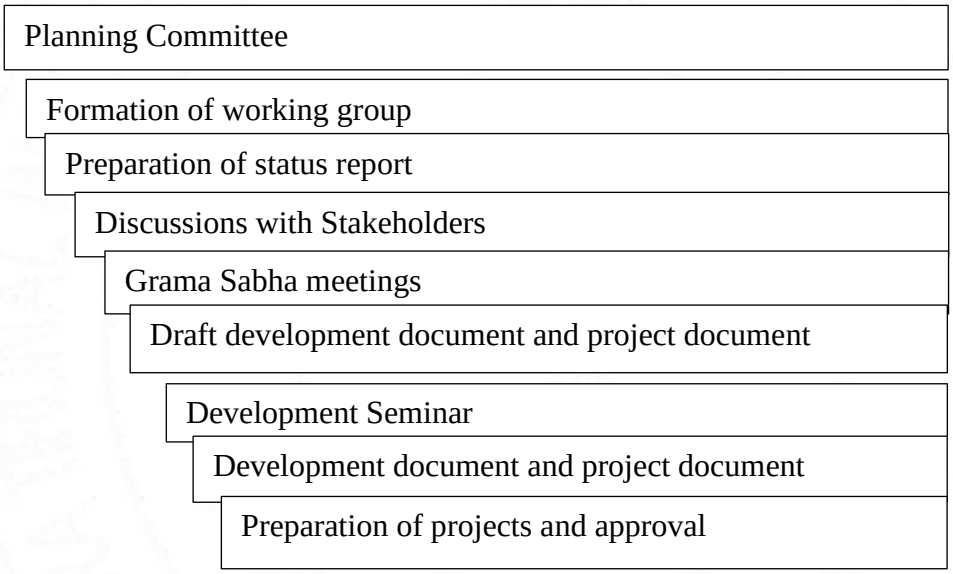


Fig 2.3: Project Planning Process

2.12.1: Planning committee

Co-ordinates the planning process at local bodies. It supports the local government and working groups. Support is given to conduct stakeholder meetings. They can conduct studies for informing project planning and submit reports to the local government.

2.12.2: Working groups

Environment setting for planning process is done by setting up of working groups. Based on the development perspective of the local government, situation analysis is done, status reports prepared and plans are formulated by these groups. For each of the listed important development sectors, working groups are constituted every year. There were 13 mandatory working groups for the 13th five-year plan. Chairperson of health standing committee or its member will chair the working group on health and the Vice chairperson will be an expert from that sector. The senior most health official under that local government will be the convenor. The group of about 10-15 members, is heterogenous in constitution with officials, health professionals, experts, people's representatives, ASHA workers and other volunteers as members. At least one-third of members in a working group should be women. Based on status report, inputs from grama sabha and stakeholder meetings, after discussions the priorities are listed by the working group in the prescribed format.

2.12.3:Status report

Status report provides a factual, scientific, analytic report on the status of health sector in that local body. In addition to the health status, health problems, needs, and opportunities in the sector, it also provides details on status of projects being implemented, their achievements and shortcomings. First two parts include situation analysis, and the last two parts of the report have, the development perspective and ideas for new projects. Figure 2.4 depicts stages of preparation of status report.

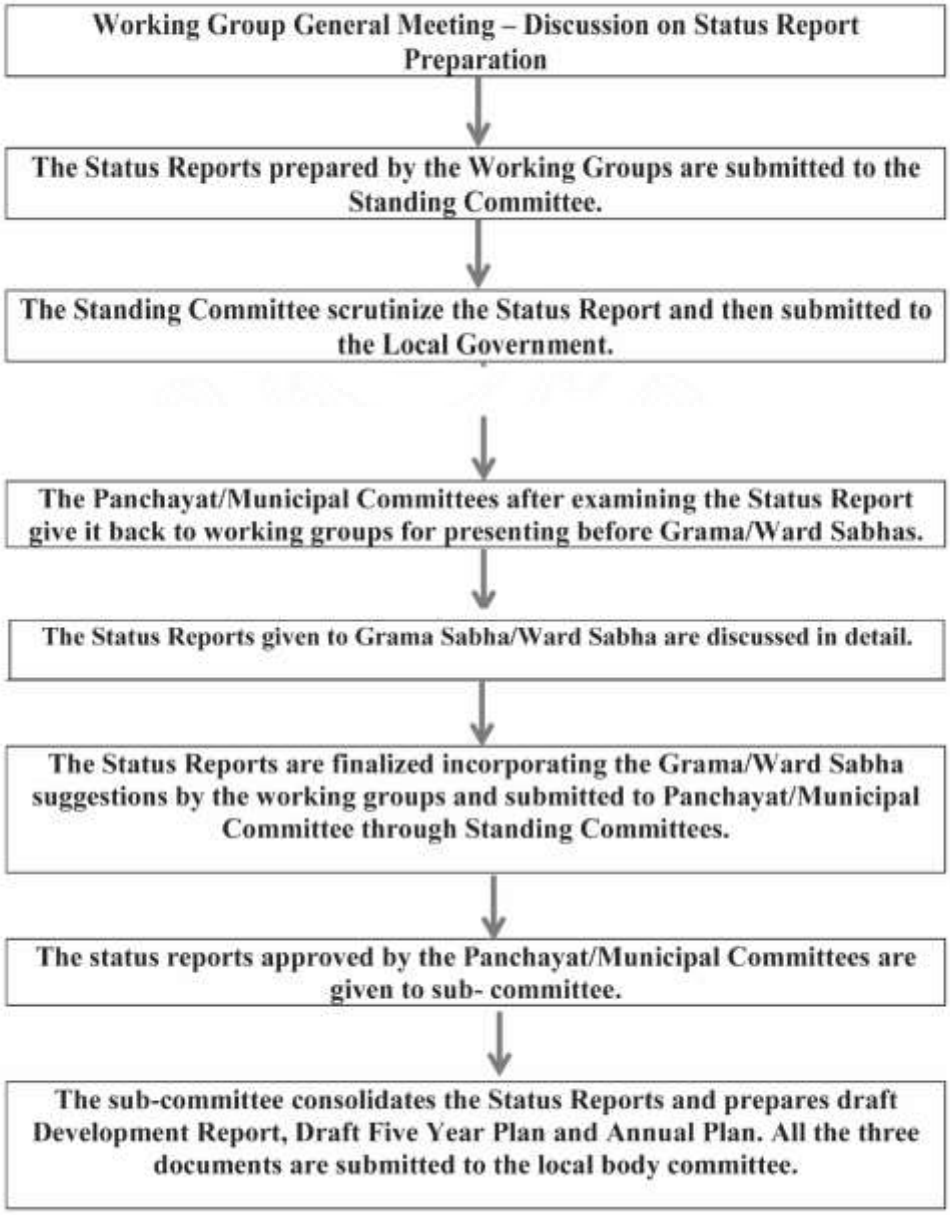


Figure 2.4: STAGES OF PREPARATION OF STATUS REPORT

2.12.4: Grama Sabha/ Ward Sabha (Committees)

Grama/Ward Sabha is the platform of the people to raise/suggest their needs, issues, defects of programmes already implemented and determining the priority of development activities. Development needs are identified and documented in grama

sabhas. The information regarding conduct of the same will be disseminated. Six facilitators are trained for the purpose. The agenda discussed contains development issues of the area. Break-out groups are formed for deeper discussion on each development sectors. List of priorities ranked in the descending order will be prepared. Photographs, attendance register and records of all discussions will be maintained by the Secretary of the local government.

2.12.5: Development report and plan document

It is prepared by officials and resource persons based on the status reports and discussions from the working groups and Grama/Ward sabhas. Development report and five-year plan document can be published as a single document at the beginning of a five-year plan. Annual plan documents are published every year after the local body committee approves it. Part 1 of plan document will have priorities and perspective development vision. Consensus on important strategies and priority schemes are arrived upon. It synchronizes local plan with state and national plan. Expected sources of fund and fund allocation is detailed in part 2 of the plan document. Grand total of the five-year plan is calculated expecting 15 percent increase of funds every year. The funds budgeted by the government under General sector, SCP, TSP, grant from central finance commission and world bank assistance are known as development fund. In part 3 of the document a summary of projects to be implemented are listed as shown in table 2.4. The draft of these documents is presented in the development seminar and finalized after detailed discussions. Copy of final document is submitted to DPC. Stages of preparation of projects in annual plan are given in figure 2.5.

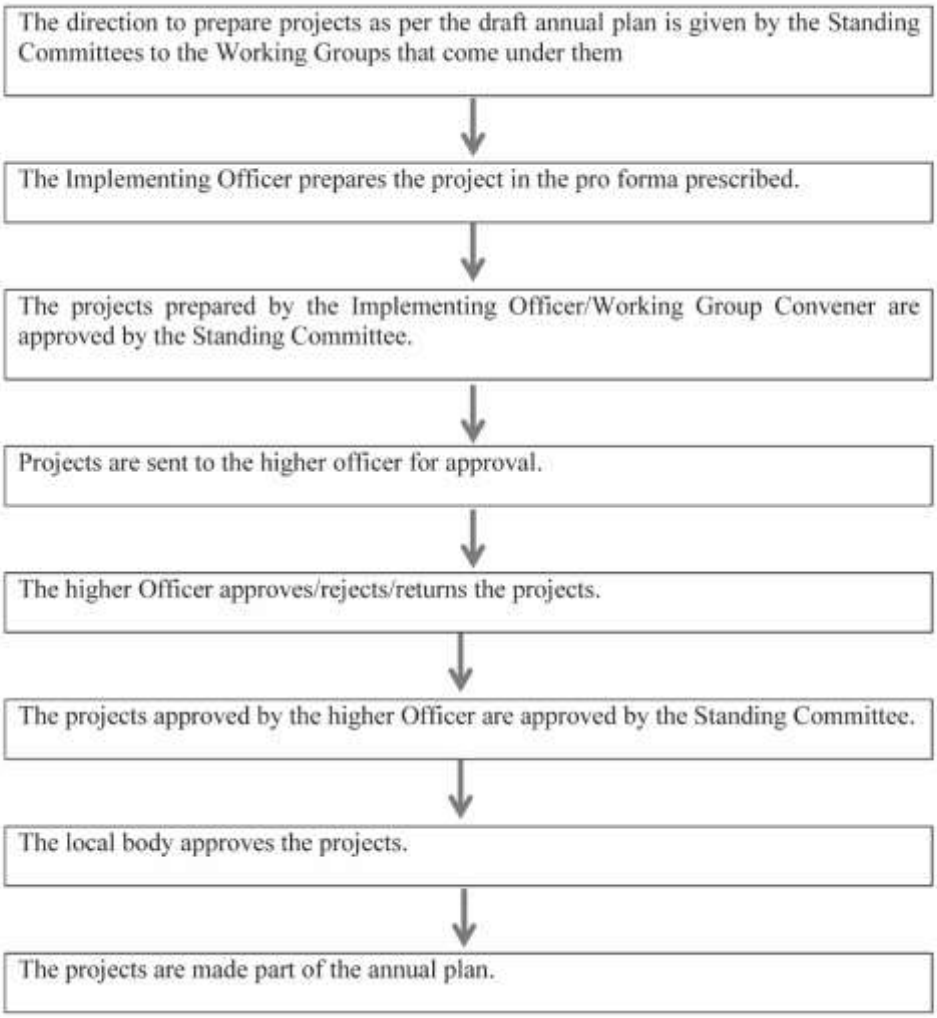


Figure 2.5: Stages of preparation of projects included in the annual plan

2.12.6: Development Seminar

A one-day development seminar is conducted by all local bodies every year to discuss and improve the annual plan document. At the beginning of every five year plan a similar seminar discusses and finalizes the development report and plan document. The people's representatives of three levels of local bodies, who represent the local body area, working group members, two representatives from each subject group

elected from the Grama/ Ward Sabha meeting, heads of local body institutions, Implementing Officers, representative from each oorukoottoms (one woman and one male person), SC/ST promoters, representatives of Area Development Society of Kudumbshree (Ward Level), Community Development Society of Kudumbashree (Local Body Level), CDS, representatives from financial institutions, representatives from cooperative societies, Asha workers, stake holders, experts, representatives from acadamic institutions, public activists, volountary workers etc are the participants of development seminar. This seminar helps to consolidate all the discussions and reports from each of the grama/ ward sabhas and working groups. This helps in avoiding duplication and repetition of projects and gives opportunities for integration. This helps to check whether the plans proposed are in line with the priorities, and development perspective of the local body. Moreover, it ensures suitability, feasibilitry, effectiveness and sustainability of draft projects.

2.12.7: Preparation of projects

Project is a document that contains the details of various components of activities which are prepared following certain technical parameters, meant for implementing to solve the development issues or to satisfy the development needs of people an area in a time bound manner. A project contains objectives, beneficiaries', beneficiary area, important activities, stages of activities, time schedule, financial analysis etc. A project is the smallest planning unit, capable of fixing limits of time and space and with predetermined objectives and targets. The working group of each development sector prepares projects for that sector. The projects should be prepared as per plan guideline

and existing rules and regulations. Separate projects should be prepared for solving each issue. There should be forward and backward linkages of projects. Projects prepared by Implementing officers are sent to higher official for vetting. On the basis of development sectors, projects are categorized into production sector (projects expecting income), service sector (projects without profit, but for welfare and service) and infrastructure projects. There can be single year and multiyear projects.

2.12.8: Sections of people requiring special attention

General projects may fail to deliver required benefits to downtrodden, marginalized or special sections of people. Scheduled Caste, Scheduled Tribes, Women, Children, Aged, Physically and mentally challenged destitute and other economically weaker sections are under this category. For them, it is recommended to prepare special/component plans. For instance, guidelines state that at least 10 percent of total plan outlay should be set apart for Women Component Plan, and 5 percent for Children, the Aged, and the Differently Abled and for palliative care.Palliative projects are mandatory, and all local bodies has to earmark amount for palliative care services from the plan funds as per government order, GO (MS) No 228/2012/LSGD/dt 23-08-2012 and GO (MS) No. 3217/2015/LSGD/dt 29.10.2015. Block and district panchayats gives a share to Palliative projects of Grama Panchayats

2.12.9: Plan approval

Draft plan is approved after deliberation by local body committee. Revisions suggested will be made and final document sent to DPC and upper and lower tiers. Detailed

projects as per plan approved by local body will be prepared by the implementing officers. Those projects will be submitted to the secretary of local body, who sends it to the officer concerned for approval. Projects vetted by higher officer shall be submitted to standing committee and then local body committee for approval. The plan is sent to DPC for approval, after which projects can be implemented. Information Kerala Mission developed Sulekha software for electronically scrutinizing the plan.

2.13. RESEARCH GAP

Priority setting in health planning is a thoroughly researched and well-developed area of study. Literature shows a variety of methods that have been developed and implemented to guide decision making in resource allocation for health. The list of approaches has been further expanded with the growth of health technology assessment employing the methods and tools from economic evaluation. The key approaches identified by existing literature are burden of disease assessments, needs assessment, defining core services, stakeholder engagement, quality adjusted life year (QALY) league tables, program budgeting and marginal analysis, portfolio management, historical allocation processes, operations research, cost-benefit analysis, cost-effectiveness analysis, budget impact analysis, equity assessment and multi-criteria decision analysis. Operational Research methodologies like simulation and Data Envelopment Analysis have been applied for improving decision-making, where a range of problem-solving techniques and algorithms are used. Some of the methods are purely quantitative like cost effectiveness analysis and similar approaches in economic evaluation. Some other methods like multicriteria decision analysis, not only

incorporates economic efficiency but also ethical, social, and political considerations. Most health systems use a mix of methods in practice, with more focus given to qualitative input from stakeholders, such as healthcare providers, policymakers, and the public. From literature it is evident that all health systems across the globe are facing challenges in meeting their population health needs, maintaining equity and justice. There is no one theory or method which consistently guides priority setting procedures in public health. Studies shows that despite decades of our experience with priority setting, decisions on resource allocation in health sector are often suboptimal, and lacks scientific methodology and evidence base. The literature also highlights the challenges in operationalizing the scientific methods developed for priority setting, in actual practices, especially in low-resource settings. The factors identified by studies that negatively influence adoption of systematic approaches in priority setting include data availability, political interests, complexity of system, lack of training and competency of those involved in planning, resistance to adopt newer methods and tendency to follow historical patterns. These problems become more prominent when it comes to health planning at local level. Studies on priority setting in local planning for health are limited. Available studies consistently report on lack of explicit transparent processes, non-availability of local data, undue political and bureaucratic interferences, and suboptimal community participation in health planning at local level.

The approaches employed by available studies which explore decision making processes and their outcome include quantitative, qualitative and mixed methods.

Many of the researchers adopted qualitative methods like case study designs using interviews and focus group discussions with key stakeholders to understand the criteria, process, values and factors influencing priority setting. Quantitative research mostly used surveys and questionnaires to collect information from health care workers, elected representatives, government officials and community members. Multivariable analysis is performed to assess the relationship of different socioeconomic factors and priorities made. Priority setting frameworks like Multi criteria decision analysis, and other standard methods like Program budgeting and marginal analysis are found to be employed in a few studies. Some of the researchers have done comparative analysis, examining how different localities use various decision-making methods and the effectiveness of these approaches in addressing local health needs.

The current study employs budget analysis as the method of understanding priority setting process in local health planning, which is a newer approach in this area. Budget analysis helps in generating hard evidence in financial terms with the primary outcome being share of allocation for different health interventions. As the local bodies have autonomy in fixing their priorities and allocating funds for projects, the allocation pattern among health projects indicates the priorities of the LSGs. By estimating the proportion of budget allocated for NCD projects in LSGs of Kerala, we could infer regarding the priority given in local planning for a high burden problem like NCD. This in turn was taken as a proxy indicator to assess the priority setting method followed by LSGs in Kerala. Non-Communicable diseases is a unique problem that

needs intersectoral interventions planned at local level. For prevention and control of NCDs, interventions focusing on diet, physical activity, tobacco, and alcohol control with policy modifications are needed. Literature identifies the problem of disproportionate funding for preventive interventions, which often have non-tangible outcome compared to funding for curative services which comprise medicine, equipment, and buildings which are tangible in nature. Studies in NCD exploring different aspects like burden, program, and evaluation are available. However, studies on priority setting and resource allocation for NCD are scarce. By studying the pattern of budget allocated for health sector projects in local bodies with specific reference to NCDs, this study generates quantitative evidence on the relative priority given to different type of health interventions and help us infer about the extent to which the resource allocation of local bodies is aligned with the actual health status and need of the community.

Budget analysis reported in health planning mostly is based on the dimension of specific programs or health problems. Research on health management aspects focus on line items. In this study budget analysis is done in five dimensions including the conventional dimension of programs/health problems and line item. In addition this study generates evidence on pattern of budget allocated on newer dimensions of level of prevention, agenda, function and objective of fund allocated.

Research studies regarding the actual planning processes in local bodies, it's determinants and outcome are limited. The limited studies available are exploring

socioeconomic factors, and health system factors to explain the determinants of priority setting process. In this study focus is given to the actual planning process in local bodies of Kerala and the specific factors within these processes which determines the outcome of priority setting. The outcome of planning in terms of the budget allocated for different health interventions are also evaluated. Hence evidence from this study can inform decision making in improving the existing structure and processes in local level planning. Recommendations for strengthening training of health officials, local government officials and elected representatives in planning can be formulated.'

In this context, the present study on decentralized health planning for non-communicable diseases in Kerala aims to understand the pattern of budget allocation for health sector projects, specifically non-communicable diseases, at different levels of Local self-government (LSG) institutions in Kerala during the four year period from 2018 to 2022.

2.14: OBJECTIVES

1. To study the pattern of budget allocation for Non-Communicable Diseases projects at different levels of Local Self Governments in Kerala.
2. To study the pattern of budget allocation for health sector projects with specific reference to Non-Communicable Diseases in Local Self Governments of Kerala.
3. To determine the factors associated with allocation for Non-Communicable Diseases projects in decentralized planning in Kerala.
4. To describe the factors influencing priority setting process in decentralized health planning in Kerala

MATERIALS AND METHODS

CHAPTER 3
MATERIALS AND METHODS

3.1. STUDY DESIGN

The present study followed a descriptive design. The study was conducted in two phases. In the initial phase, data on budget allocation for health sector projects for all local bodies of Kerala was collected and analyzed. In the second phase, detailed study of factors associated with resource allocation in selected Grama Panchayats of Kerala was undertaken.

3.2. STUDY SETTING

Kerala state, located in the southern part of India has a population of about 33,406,061 (Census,2011). It has 14 districts. This study was done on health projects of both urban and rural Local Self Government (LSG) institutions of Kerala. Urban local bodies (ULB) include municipalities for towns and corporations for cities. Rural local bodies at three levels of decentralised governance include district (DP), block (BP) and grama Panchayats (GP). Grama Panchayat, the basic governing institution, consists of a village or group of villages and is divided into smaller units called wards. Block Panchayat is at the intermediate level and acts as the link between GP and DP. District panchayat is the third tier of the Panchayati raj system. Kerala has 1200 LSGs, which includes 941 GPs, 152 BPs, 14 DPs, 87 municipalities and six municipal corporations. The structure of Local Self Government system in Kerala is shown in Fig 3.1.

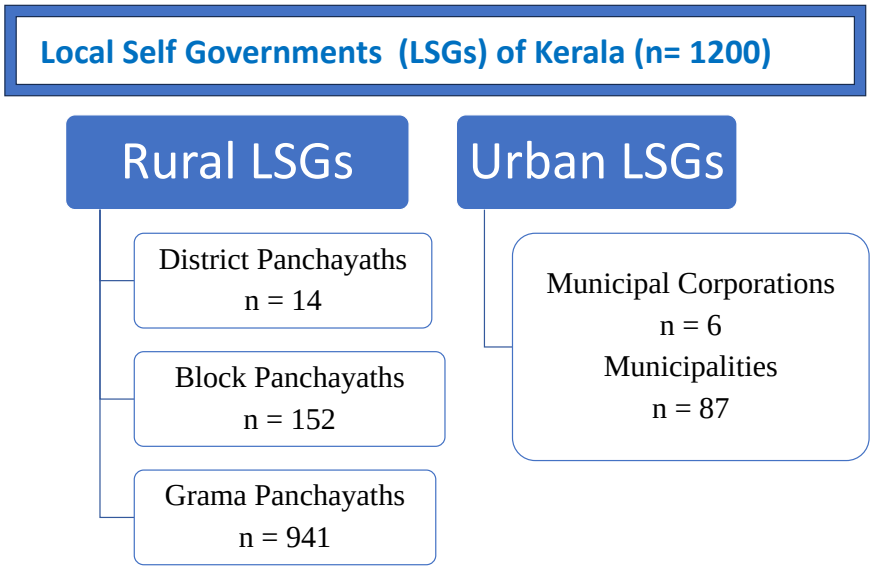


Fig 3.1: Structure of Local Self Government System in Kerala

3.3. STUDY PERIOD:

March 2022 - September 2023.

3.4. STUDY SAMPLE:

Study included LSG projects of four years from 2018-2022. From the list of districts in each geographic zone, one district was randomly selected. The districts included in the study were, Thiruvananthapuram representing the south, Kozhikode representing North and Kottayam for the centre of the state of Kerala (Fig 3.2.). All District Panchayats, Block Panchayats, Municipalities and corporations of the three districts were included. From the list of grama Panchayats in each of the three districts, 30 GPs were selected. The list of panchayats was taken from report of health projects given by Information Kerala Mission (IKM).

3.4.1. Data set

For the purpose of this budget analysis, data used was the report of health sector projects from Information Kerala Mission (IKM) of Local Self Government department. The data set had details of budget allocated for each health project implemented by all the LSGs of Kerala.

3.4.2. Study Participants

Members of the working group for health sector planning in Grama panchayats of Kerala were the participants for interviews done in the second phase of the study. Medical officers, Health Inspectors, and elected representatives, preferably chairman of health standing committee were included

Exclusion Criteria: Those members with less than one year experience in local level planning and those not willing to participate in the study were excluded.

3.5. SAMPLE SIZE AND SAMPLING METHOD:

Sample size was calculated using formula for estimation of proportion, $N= z\alpha^2PQ/d2$, where P was the proportion of health sector fund allocated for NCD projects at local bodies of Kerala. Assumption for P was 10% for GPs as per pilot analysis done on data set from Information Kerala Mission. At a confidence level of 95% and absolute precision of 5%, sample size estimated was 140. Total number of local bodies of three districts except GPs was 56. Hence, no of GPs needed was 84, which was rounded to 90. Three of the districts had almost equal number (73,71 and 70) of Grama Panchayats (GPs). Hence, 30 Grama Panchayats were selected from each district using

simple random sampling. Random number generator function in data analysis package of Microsoft excel was used. Applying specific seed number, random numbers were generated for each district and selections made from the list of GPs. For Block Panchayats, District Panchayats, Municipalities and Corporations, no sampling was done. All LSGs were included at those levels as the numbers were limited. Sampling framework is presented in Fig 3.2.

For Key informant interviews, one to three participants from each local body were interviewed till complete information was obtained. Selection of members of working group was based on their availability, willingness and ability to share information.

Study setting and sample

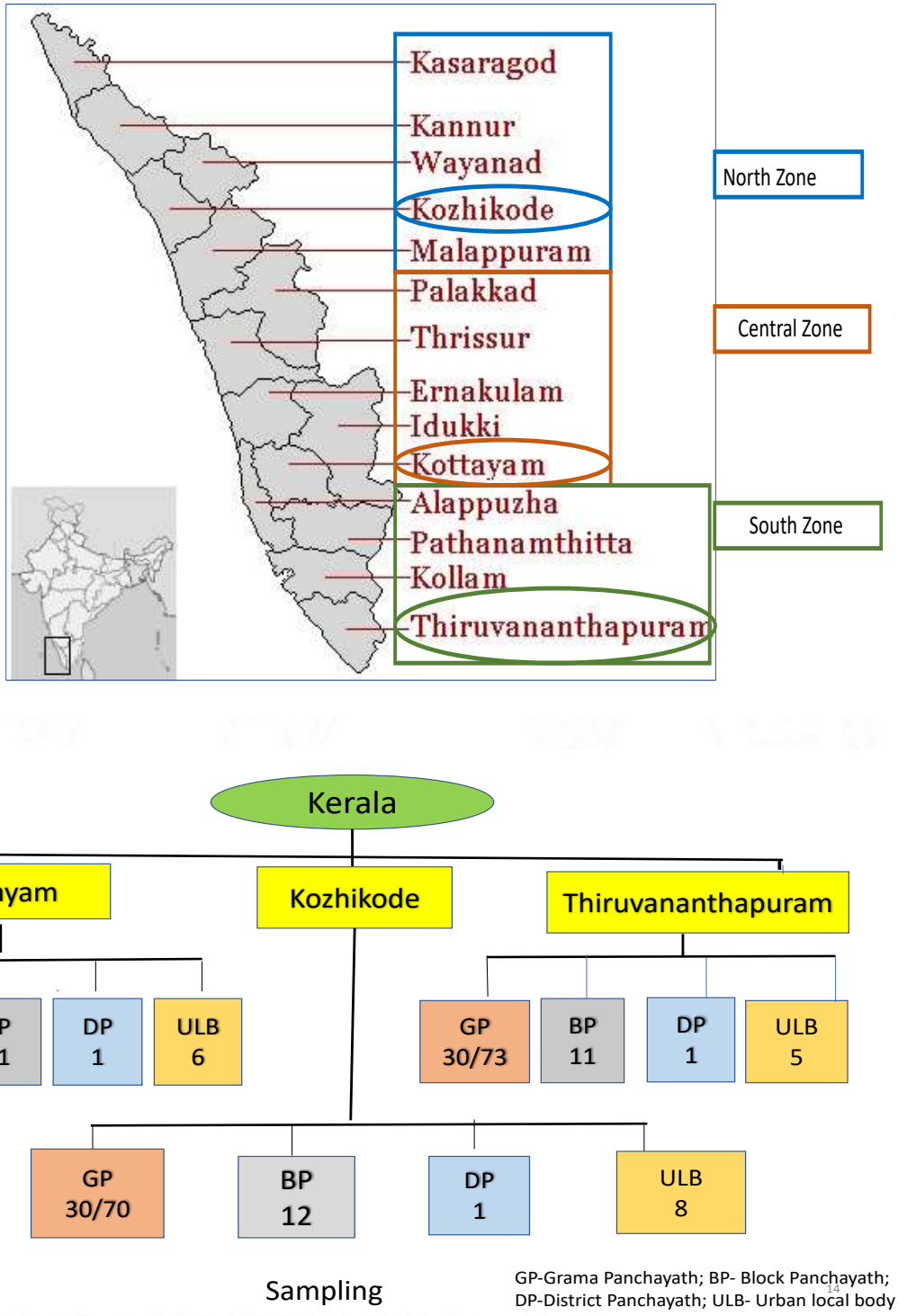


Fig 3.2: Sampling Framework

3.6. DATA COLLECTION

3.6.1. Study tool

A data extraction form and structured interview schedule was developed with the help of expert consultations and literature review.

3.6.2. Data sources

Digital datasets that are available in the report format on different health sector projects from the Information Kerala Mission (IKM), a Government of Kerala organisation was used for secondary data analysis. Sulekha, the online portal for plan management of LSG department was accessed for plan documents. In addition, during primary data collection from Grama Panchayats, documents that were part of the planning and resource allocation processes at the LSG institutions at different levels were also accessed. Economic review reports of respective years were also accessed. The data files obtained from IKM was sorted and cleaned and data extracted into the data extraction form in spreadsheet format.

At Grama panchayat level, interviews of elected representative of local bodies, members of different committees at the local levels and officials at the selected LSG institutions were done. The permission letter from secretary of LSG department was emailed to all LSG institutions, which ensure the support and co-operation of officials and elected representatives. Information regarding factors influencing allocation process was collected for each GP from at least one member of working group for health sector. Medical officer/ health supervisor of PHC/CHC/TH and health standing committee chairman of that GP were preferably included. The interviews were conducted in-person or via telephone, which lasted approximately 15 minutes.

3.7. OPERATIONAL DEFINITIONS

Non-communicable Diseases (NCD)- For this study, NCD referred to diseases covered under National Program for prevention & control of Cancer, Diabetes, Cardiovascular Diseases & stroke (NPCDCS) and Amrutham arogyam, the NCD program of Kerala government. The diseases included were cancer, diabetes, cardiovascular diseases and stroke, chronic respiratory diseases and chronic kidney diseases. All the diseases listed by WHO or the latest national program, National Programme for Prevention and Control of Non-Communicable Diseases (NP-NCD) were not included. Notable exceptions were mental health problems and chronic liver diseases.

Project - smallest planning unit, with fixed limits of time, budget and space and with predetermined objectives and targets. Project is a set of activities, prepared following certain technical parameters, by the working group.

Program - Projects in a sector are together called a program. Programs address specific health issues such as, Communicable diseases, non- Communicable diseases, Nutrition, Maternal and child health, Palliative care and hospital services.

Budget- Schedule of funding prepared for the project options chosen.

Line-item: Lines of input categories like human resource, purchase of consumables, equipment, infrastructure, and transport, Multicomponent projects.

Multicomponent projects- Projects with a combination of line items, especially for community campaigns and camps. It included projects that employ multiple strategies and activities to attain their specified goals.

Campaigns- Time-bound, intermittent activities that address specific epidemiological challenges.

Camps- Temporarily organized activity within a specified locality for a specific limited health intervention.

Community level intervention/ community-based intervention - community is the setting of intervention and it includes initiatives that aim to improve the health and well-being of population groups within a defined local community. These interventions are often multicomponent.

Production function – Projects with the function of construction or purchase of assets

Consumption function- Purchase of medicines, consumables, services, salary, campaigns, treatment aid, transport

Agenda- refers to the underlying plan or program, list or outline of specific items of business to be considered and acted upon. The agenda can be placed by governments at local, state or national level.

Objective- refers to the objective fulfilled by each health project in terms of whether they acted as a means to end or end itself.

Means to end projects- Infrastructure and other assets acting as a means to deliver services

End itself projects- Services directly benefiting individual

3.8. STUDY VARIABLES

3.8.1. Analysis based on five dimensions

Budget allocated for each category under different dimensions;

3.8.1.1. Different types of NCD Projects- Purchase of medicines, lab services, cancer care, screening, dialysis, special NCD clinics, treatment aid

Community interventions for NCD- Community level awareness campaign, Household level awareness and screening, Cancer screening, NCD camps, interventions for improving Physical activity and diet modification

Health Programs- NCD, Communicable Diseases (CD), Palliative, Hospital services*, Maternal and Child Health, Ardram, Mental Health, Accreditation, Disaster, COVID-19, Subcentres, Tribal Health, Other projects

(* Analysis of daily outpatient statistics from selected PHCs and CHCs, shows that 30%- 40% of foot falls are for NCD)

Line items- Salary, Construction, Purchase of equipment, Furniture, Medicines, Transport, Maintenance, Multicomponent projects

Amount of budget allocated for;

3.8.1.2. Different levels of intervention: Primary prevention, Screening, Curative services, Management of Complications, Palliative and rehabilitative services.

3.8.1.3. Agenda: local agenda and state or national agenda

3.8.1.4. Function: Production or Consumption

3.8.1.5. Objectives; Means to end or end itself (Refer 3.7 for operational definitions)

3.8.2. Elements associated with allocation process;

Agenda

Priority for NCD in working group discussion

Allocation based on health status report

Best Practices/ Evidence

Conduct of working group

Following previous years pattern

Production vs Consumption

Political pressure for tangible outcome

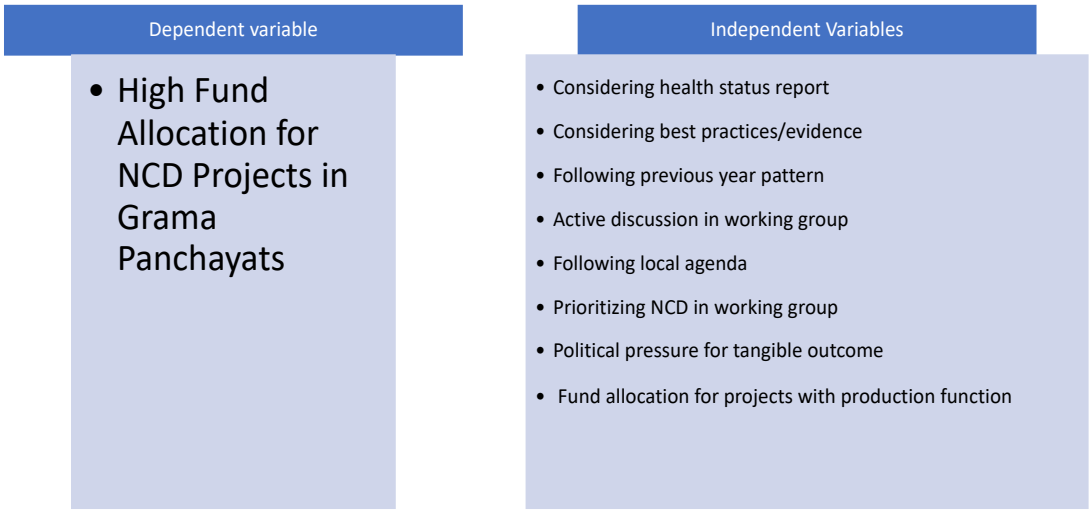


Fig 3.3: Variables for Multivariable analysis

3.9. FRAMEWORK

3.9.1. Framework for Budget Analysis

The framework for budget analysis is presented in figure:3.3. The framework used in this study employs the following approaches in budget analysis;

1. Sectoral Analysis - Evaluation of the inadequacy of the allocations made towards the particular health programs. Comparison of allocations made for different programs are done for deriving meaningful conclusions.

2. Analysis through specific lens – Budget is assessed from the perspective of a disadvantaged section of the population, priority problem, or neglected areas. Here we are taking NCD projects as reference for assessing the appropriateness of allocation.
3. Analysis of trends in budget allocations over time is also done.

This study does not include revenue analysis.

Budget allocation is analysed using following dimensions;

1. Budget for NCD projects Vs Other Health Projects
2. Budget for type of NCD projects
3. Budget for types of Community Interventions
4. Line-item wise Budget
5. Program wise Budget
6. Budget for each Level of Intervention
7. Agenda wise Budget
8. Objective wise Budget
9. Budget for functions of production Vs Consumption

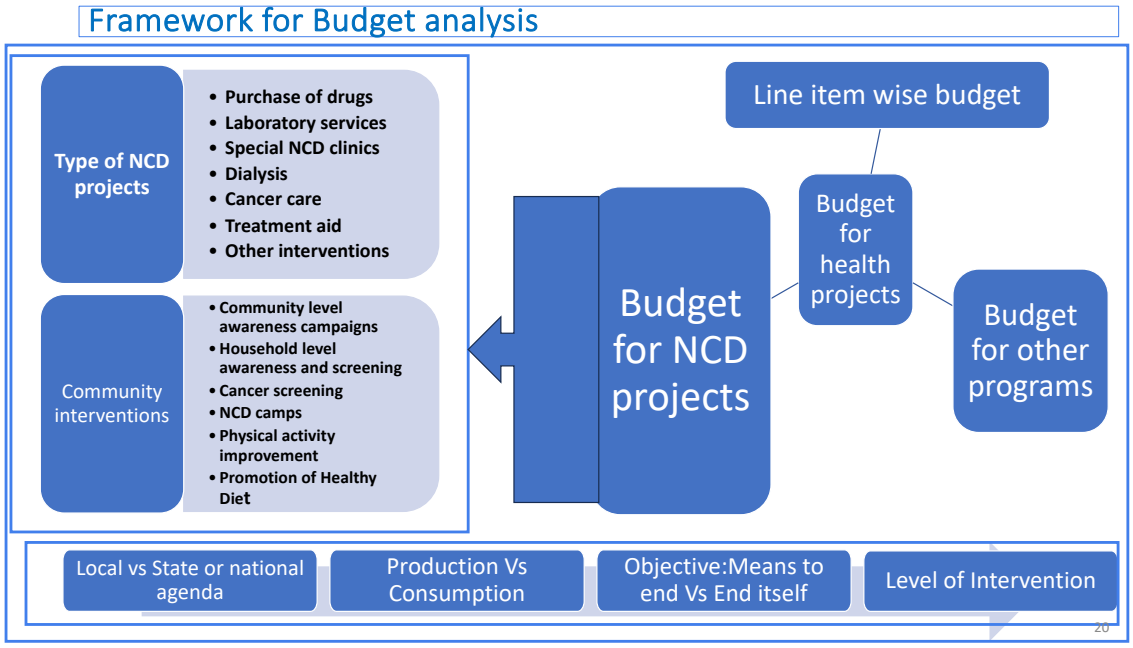


Figure 3.4: Framework for Budget Analysis

3.9.2. Framework for understanding decision making process and factors influencing resource allocation

The present study adopts a policy framework that was applied in public health-related policy processes (Moloughney et al., 2013). The framework follows a descriptive analysis based on stages heuristic. The stages followed are, agenda setting; how problems have been recognized and how they have been framed, project formulation; how options are considered and decided upon and communicated, project adoption; and what decisions are made. Using this approach, the multiple dimensions of priority setting and allocation process were examined. Explanatory analysis for understanding the why and how of resource allocation adopted Kingdon's multiple streams framework(Zahariadis, 2007; De Wals, Espinoza-Moya and Béland, 2019; Sabatier,

2019; *Kingdon 1984: Agendas, alternatives, and public policies*). Please refer Figure3.4.

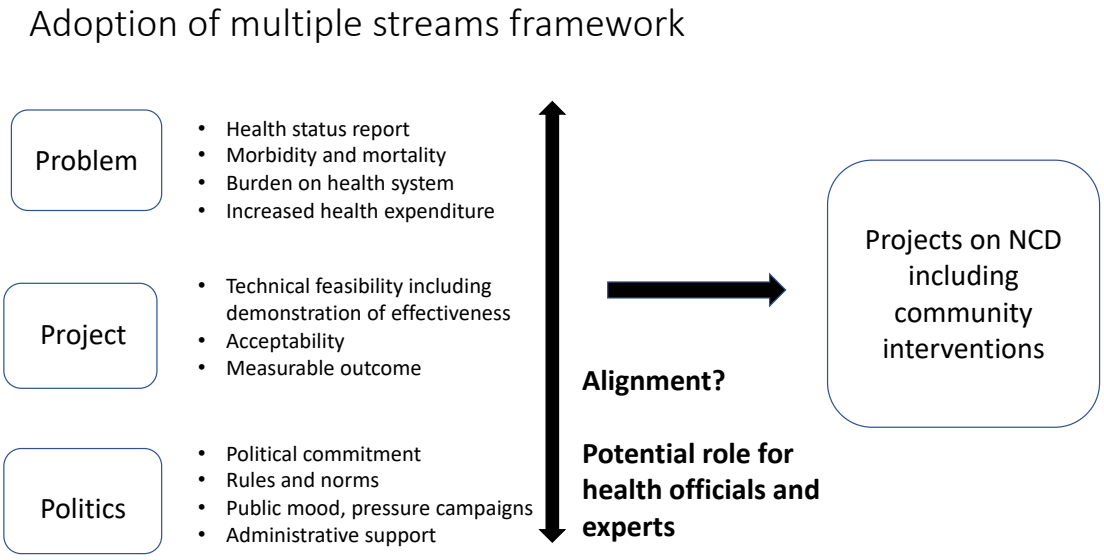


Figure 3.5: Adopted Multiple streams framework.

3.10. DATA MANAGEMENT AND ANALYSIS

Data was extracted from the Microsoft excel sheets accessed from Information Kerala Mission. Extracted data was entered in Microsoft excel. During data cleaning incomplete entries and duplications were removed, which was less than 1% of total entries. Classification, labelling and organization of data was done for budget analysis. Each health project was categorized and coded based on various dimensions used in budget analysis.

3.10.1. Measurement: Budget for each category under the dimensions studied were summarized as mean (SD) allocation for a district in a year, for the first phase of the analysis. In the second phase, as detailed data for each GP was available, the unit of analysis was a GP and amount allocated was summarized as mean (SD) for a Grama Panchayat. Proportion of allocation for each type of intervention was summarized as percentage. Percentages in terms of actual amount and number of projects was estimated for outcome variables. For measuring the mean amount of budget allocated and percentage share of allocation in different categories under the five dimensions studied, the items and projects as defined by the operational definitions were adhered to. For categorizing GPs into those with high and low allocation for NCD, a cut-off was used. Cut-off was determined as the mean allocation for NCD in a Grama Panchayat. This mean was estimated for all the Grama Panchayats for the total four years of study.

3.10.2.Statistical analysis:

Statistical analysis was done using SPSS version 25.0 (SPSS IBM, Armonk, NY). Continuous variables were expressed as means with standard deviations (SD), and categorical variables were presented as frequencies and percentages. Estimation of percentage share of allocation for each category was done. Trend was analyzed for allocation over years with the help of a mean line. Correlation between quantitative variables were studied using Pearson's correlation. To identify the factors associated with high allocation for NCD, univariable analysis was done. Chi square test was used for testing the significance of association between categorical variables. Independent

sample t test was used for comparison of mean allocation between groups. Paired t test was used for comparison of mean allocation over two years.

Variables with a p-value of less than 0.05 in the univariable analysis were included in the multivariable binary logistic regression model to examine their independent associations with high allocation for NCD. The multivariable model was constructed using the enter method, whereby all selected variables were simultaneously included in the model to adjust for potential confounders. The outcome variable, high allocation for NCD, was modeled as a binary variable, with high allocation (yes/no) as the dependent variable. For each of the selected independent variables, the odds ratio (OR) and its associated 95% confidence interval (CI) were computed. The adjusted odds ratios (AOR) provided a measure of the strength and direction of the association between each independent variable and the outcome, after adjusting for the effects of other variables in the model. Statistical significance was determined by evaluating whether the 95% CI for the adjusted odds ratio excluded the null value (OR = 1), with a p-value of less than 0.05 considered statistically significant. All statistical tests were two-tailed, and the significance threshold for all analyses was set at a p-value of less than 0.05.

3.11.ETHICAL CONSIDERATIONS

The study proposal has been cleared by the Institutional ethics committee of SCTIMST, Thiruvananthapuram (No: SCT/IEC/1849/FEBRUARY/2022). Data collection was scheduled based on the convenience of the participants. Investigator followed the informed consent process before collecting data. The participants were

briefed on the study objectives, purpose, benefit, risks and voluntariness to decide participation. The privacy, and confidentiality of the data was ensured at all levels. Anonymity was maintained throughout the study.

RESULTS

CHAPTER 4

RESULTS

Organization of results

1. Profile of Districts, local bodies and health projects
2. Allocation for health and NCD projects
3. Proportion of allocation for NCD projects
4. Allocation for NCD Community interventions
5. Pattern of allocation for NCD projects based on major dimensions
6. Pattern of allocation for Health projects
7. Detailed analysis of Grama Panchayat (GP) projects of 2021-22
8. Comparison of Allocation between different type of projects
9. Association of NCD projects and project characteristics
10. Comparison of GP projects 2021-22 with 2018-19
11. Factors associated with allocation for NCD in Grama Panchayats

4.1: ANNUAL HEALTH PROJECTS WITH SPECIFIC REFERENCE TO NON-COMMUNICABLE DISEASES DURING FINANCIAL YEARS 2018-2022 IN LOCAL BODIES OF KERALA: BUDGET ALLOCATION AND TRENDS

Under the LSG department of Kerala, there are rural LSGs at three levels, Grama Panchayats (GPs), Block Panchayats and District Panchayats. Grama Panchayats are at the grass root level, governing a Panchayat, the lowest level of administration in decentralized planning. Grama Panchayats generally cater to a population of 20,000-50,000 with some outliers. A group of GPs, mostly three to seven form a Block and are governed by Block Panchayats. All the block panchayats in the rural division of a district are governed by the district panchayats. The urban areas of a district have municipalities for towns and municipal corporations for cities. The dataset analyzed included details of annual health projects implemented by all the local bodies of Kerala. Under the plan fund of local bodies projects are planned for each sector including health. For this study, health projects were included from selected three districts. Except for Grama Panchayats, all the local bodies of these three districts at Block, District and Municipal or Corporation level were made part of the study. For GPs, 30 local bodies were selected randomly from each district. Pattern of budget allocation in terms of rupees in lakhs was summarized, considering data for each district for each financial year as a unit. This work was done during the thirteenth five-year plan spanning financial years 2018-2022. Kerala is the only state which has

committed to continue with the five-year plans after the constitution of Niti Ayog. Before constitution of Niti Ayog in 2015, the apex body in India planning was the planning commission. Under the planning commission development plans were implemented in all sectors as five year plans.

4.1.1: Profile of Districts, Local Bodies and Health Projects

The estimated budget amount for the state for the thirteenth five-year plan was two lakhs crore INR, of which Rupees 60,000 crores was allocated for the local self-governments. This analysis included only the budget under Plan fund (Grant-in-Aid) of LSGs for the financial years, 2018-22. During this period, the distribution of plan fund allocation for productive sector was 14%, 58% for service and 28% for infrastructure. Production sector included development sectors of agriculture, animal husbandry, fisheries, dairy development, irrigation, industry, small business and energy generation. Infrastructure sector comprise of transport, public buildings not included in the productive and service sectors, street light, office electrification, other construction works, and purchase of vehicles. Service sector includes education, health, libraries, arts, culture and sports development, youth welfare, drinking water, sanitation, waste processing, housing, social welfare, social security, nutrition, anganwadis, vocational expertisation, energy protection, tourism, computerization, and plan formulation, implementation and monitoring. Budget allocated for health projects comprised 3.4% of total plan fund, which in turn was 6% of allocation for service sector.

Table 4.1: Profile of districts under study.

District	**Kottayam**	**Kozhikode**	**TVPM**	**Total**
Population	1979384	30,86,293	3301427	83,67104
District Panchayat	1	1	1	3
Corporations	0	1	1	2
Municipalities	6	7	4	17
Block Panchayats	11	12	11	34
Grama Panchayats	30/71	30/70	30/73	90/214

Table 4.1 describes the profile of districts under study. Kottayam, Kozhikode and Thiruvananthapuram (TVPM) districts represent the central, northern and southern region of Kerala state respectively. Kozhikode and Thiruvananthapuram have a population above 30 lakhs whereas Kottayam relatively is less populous. The number of Grama Panchayats (GPs) were 71 for Kottayam, 70 for Kozhikode and 73 for Thiruvananthapuram. There were 12 Block Panchayats (BPs) for Kozhikode district and 11 each for the other two districts. Only Kozhikode and Thiruvananthapuram districts were having Municipal corporations. Urban Local bodies (ULBs) were six for Kottayam, eight for Kozhikode and five for Thiruvananthapuram. We studied 146 Local Self-Governments (LSGs), which included 90 GPs, 34 BPs, three District panchayats (DPs) and 19 ULBs (2 corporations and 17 municipalities)

Table 4.2 shows the number of health projects and NCD projects implemented at different levels of LSGs for the four years under study. In this study we analyzed 8139 health projects from 146 LSGs planned for four financial years from 2018-19 to 2021-22. This included 795 projects for Non- communicable Diseases (NCD projects). The percentage share of plan fund between different levels of LSGs are 49% for GPs, 12% for BPs, 13% for DPs, 16% for municipalities and 11% for corporations.

Table 4.2: Number of health and NCD projects at different levels of LSGs in Kerala

Type of Local Body	**No of LSG institutions**	**Total no of projects for four years (2018-22)**	**Total no of NCD projects for four years (2018-22)**
Grama Panchayat	90	4286	434
Block Panchayat	34	1758	199
District Panchayat	3	662	35
Urban Local Bodies	19	1433	127
Total	146	8139	795

4.1.2: Budget allocation for health and NCD projects

The total budget allocated for 8139 health projects in 146 LSGs for four financial years was Rs 59000.99 lakhs. The lowest mean (SD) allocation per year per district was for BPs, Rs 884.44 (258.78) lakhs, and highest was Rs 1602.98 (916.87) lakhs for ULBs. Grama Panchayats had a mean (SD) allocation of Rs 1329.66 (506.13) lakhs per year per district for health projects. The Mean (SD) of number of health projects

per year per district varied between 55 (36) in DPs to 357 (73) for GPs. Details are presented in Table 4.3

Table 4.3: Budget allocation for health projects at different levels of LSG in Kerala

Type of Local Body	**Mean (SD) allocation per year per district for health projects (Amount in lakhs rupees)**		**Mean (SD) no of health projects per year per district**	**Total allocation for four years (Amount in lakhs rupees)**	**Total no of projects for four years**
Grama Panchayat	1329.66	506.13	357 (73)	15955.90	4286
Block Panchayat	884.44	258.78	146 (36)	10613.29	1758
District Panchayat	1099.68	612.67	55 (36)	13196.10	662
Urban Local Bodies	1602.98	916.87	119 (33)	19235.70	1433
All Local bodies combined	1229.19	658.11	170 (123)	59000.99	8139

The total budget allocated for 795 NCD projects in 146 LSGs for four years was Rs 5090.66 lakhs. The mean (SD) allocation per year per district for NCD projects varied from Rs 85.01 (36.91) lakhs for GPs to Rs 127.43 (110.21) lakhs for DPs. The total budget allocated for NCD projects for four years at all LSGs together varied between

Rs 1020.16 lakhs in the 90 selected GPs to Rs1529.17 lakhs in the three selected DPs. Mean (SD) of number of NCD projects per year per district ranged from 3 (2) in DPs to 36 (13) for GPs. Total number of NCD projects for the four years studied ranged from 35 NCD projects for DPs to 434 NCD projects for GPs. Details are given in Table 4.4

Table 4.4: Budget allocation for NCD projects at each level of LSG in Kerala

Type of LB	**Mean (SD) allocation per year per district for NCD projects (Amount in lakhs rupees)**	**Mean (SD) no of NCD projects per year per district**	**Total allocation for four years (Amount in lakhs rupees)**	**Total no of projects for four years**
Grama Panchayat	85.01 (36.91)	36 (13)	1020.16	434
Block Panchayat	102.07 (40.24)	17 (6)	1224.83	199
District Panchayat	127.43 (110.21)	3 (2)	1529.17	35
Urban Local Bodies	109.71 (50.84)	10 (3)	1316.50	127
All Local bodies combined	106.06 (66.20)	17 (14)	5090.66	795

4.1.3: Proportion of allocation for NCD projects among health projects

The primary objective of this study was to estimate the proportion of allocation for NCD projects among health projects.

4.1.3.1: Proportion of amount in lakhs rupees allocated for NCD projects among budget for health projects

Proportion of health budget allocated for NCD projects was estimated for each level of LSG. It was expressed as percentage share. Figure 4.1, Fig 4.2 and Table 4.5 presents the proportion of allocation for NCD Projects. The proportion of budget allocation for NCD projects among health projects varied from 6.39% in GPs to 11.59% in DPs.

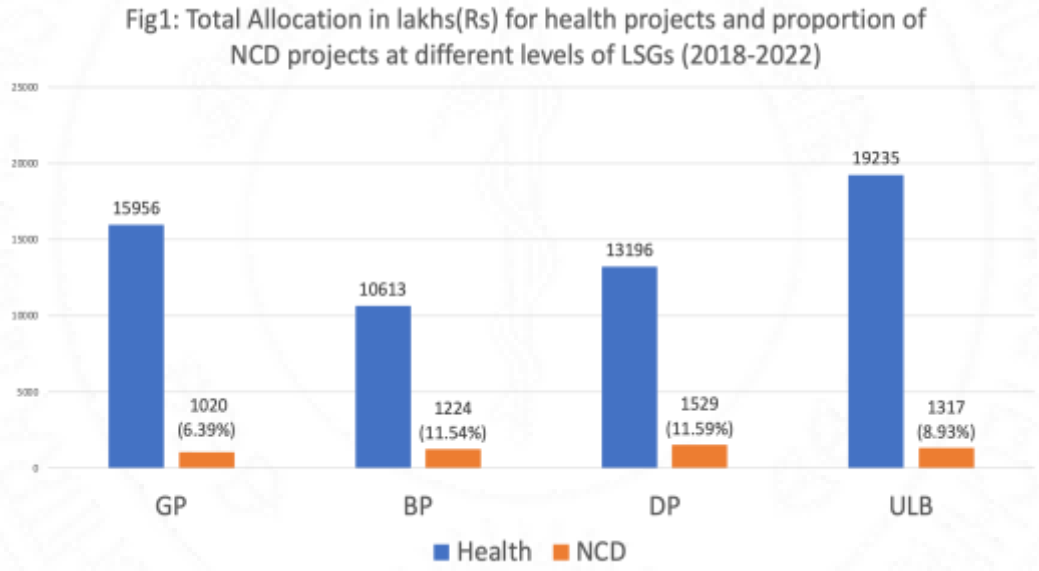


Fig 4.1. Total allocation in lakhs (Rs) for health projects and proportion of NCD projects at different levels of LSGs in Kerala (2018-2022)

Table 4.5: Proportion of budget allocation for NCD projects at LSG levels (2018-22)

Type of Local Body	Percentage allocation for NCD projects among total budget allocation for health projects
Grama Panchayat	6.39 %
Block Panchayat	11.54 %
District Panchayat	11.59 %
Urban Local Bodies	8.93 %
All Local bodies combined	8.63 %

Percentage share of total budget for health projects allocated for NCD projects was estimated and is presented in Fig 4.2

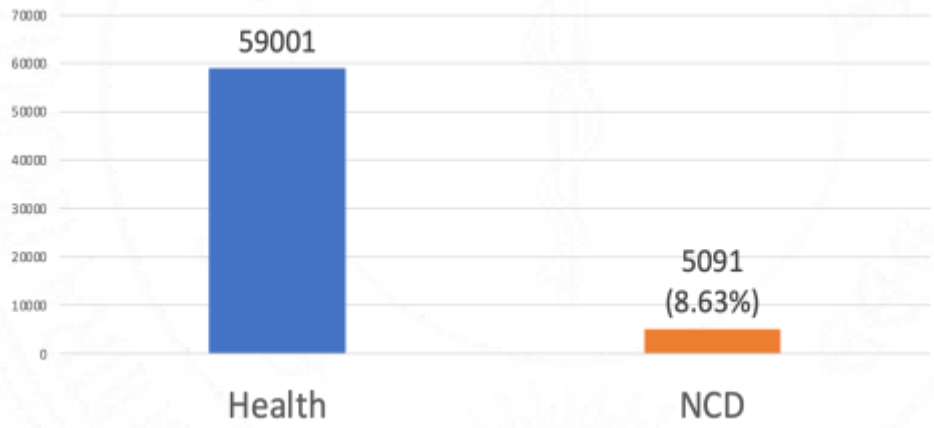


Fig 4.2: Proportion of budget allocation (in lakhs Rs) for NCD projects among health projects in LSGs of Kerala (2018-22)

Proportion of budget allocation for NCD projects among total allocation for LSG health projects in Kerala during 2018-2022 was 8.63%. District Panchayats and Block Panchayats have allocated more than 10% of their health budget for NCD projects, that is 11.59% and 11.54% respectively. While, Grama Panchayats had the lowest percentage allocation for NCD (6.39%). Allocation for NCD in urban local bodies was 8.93%.

4.1.3.2: Proportion of NCD projects among total number of health projects

Table 4.6: Proportion of NCD projects among total no of health projects (2018-22)

Type of Local Body	Proportion of NCD projects among total no of health projects
Grama Panchayat	10.13 %
Block Panchayat	11.32 %
District Panchayat	5.29 %
Urban Local Bodies	6.24 %
All Local bodies combined	9.78%

Percentage share of NCD projects in terms of number of projects among health projects was estimated and is presented in Table 4.6 The percentage of NCD projects among total number of health projects in local bodies of Kerala is 9.78%. Though the proportion of budget amount allocated for NCD projects is less in Grama Panchayats, in terms of number of projects, 10% are NCD projects. Whereas for District Panchayats and ULBs, the amount allocated per NCD project is higher compared to

non-NCD projects. Hence, the decrease in proportion of number of NCD projects.

4.1.3.3: Percentage allocation for NCD among health sector projects over the years

The total budget allocation for health sector projects in local bodies of Kerala shows a steady increase from 2018-19 to 2021-22 as shown in Fig 4.3. From Rs 10898 lakhs in 2018-19, allocation for health projects increased to Rs19326 during 2021-22. The amount allocated for NCD projects are not showing an increasing trend. Alternate years have decreased and increased allocation than previous year showing a tendency to regress to mean. But the amount allocated increased from Rs 964 lakhs during 2018-19 to Rs 1567 lakhs during 2021-22. The highest allocation was found during year 2020-21, when Rs 1654 lakhs was allocated for NCD projects.

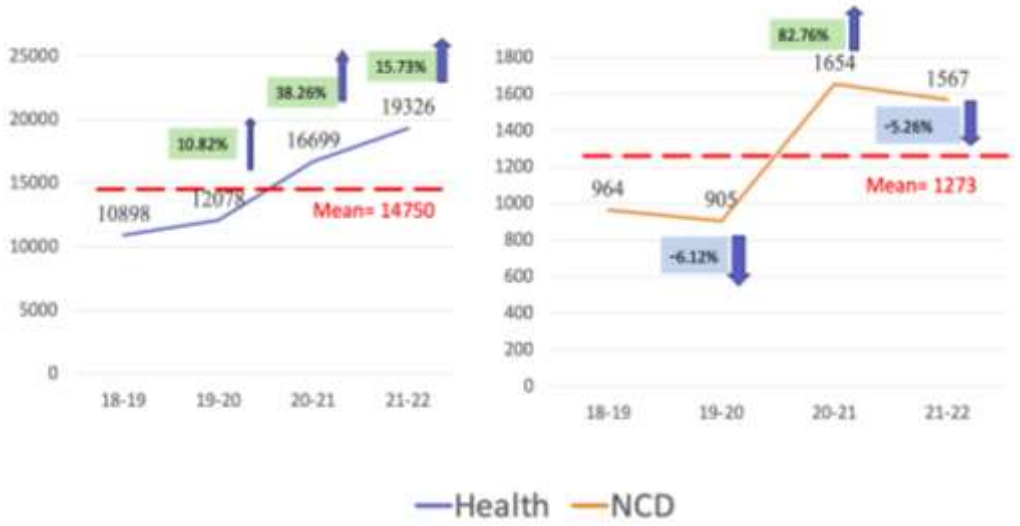


Fig 4.3: Budget allocation for health projects and NCD projects over the years

Fig 4.4 presents the trend in percentage share of health sector allocation for NCD over the four years under study. The highest percentage allocation for NCD projects, 9.9%, happened during 2020-21 and the lowest allocation, 7.49 % during 2019-20.

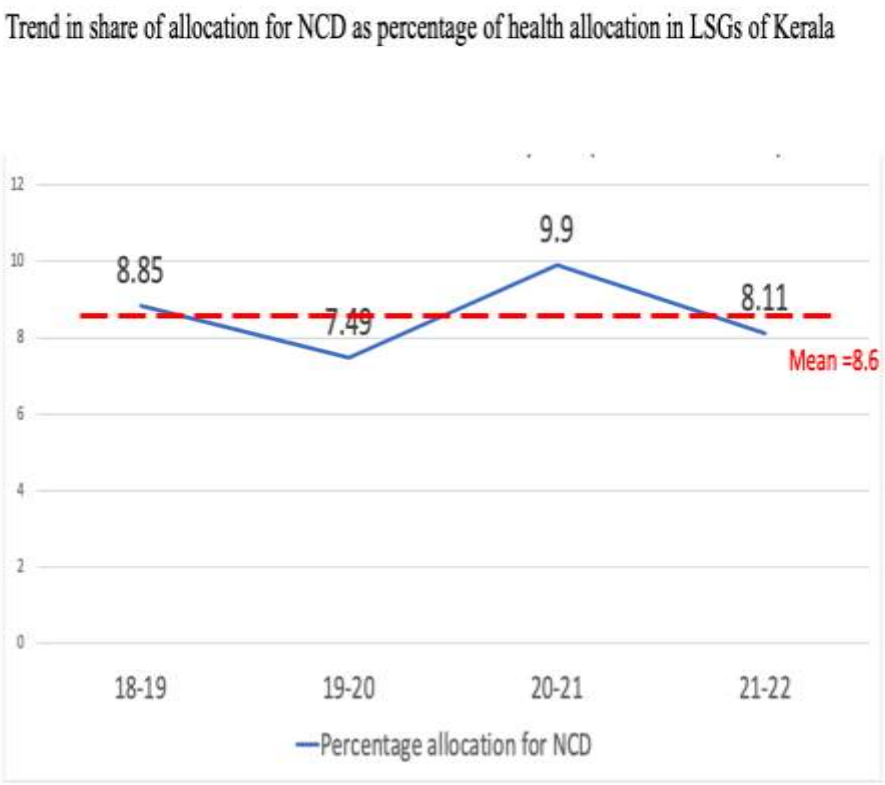


Fig 4.4: Percentage allocation for NCD among health sector projects over the years

Table 4.7: Percentage difference in amount allocated for Health projects over the years

Year	Amount for Health projects	Percentage change from previous year	Amount for NCD Projects	Percentage change from previous year
2018-19	10898	-	964	-
2019-20	12078	10.82	905	-6.12
2020-21	16699	38.26	1654	82.76
2021-22	19326	15.73	1567	-5.26

Table 4.7 presents the percentage difference in amount allocated for health and NCD projects between years. There was an increase in allocation for health projects over the four-year period, with a percentage increase of 10.82% during 2019-20 and 15.73% during 2021-22. The highest percentage increase in allocation for health sector projects happened in 2020-21, which was 38.26%. Whereas for NCD there was a cyclical change in allocation with alternate years recording a percentage decrease of 6.12% and 5.26%. Yet, during the year 2020-21, there was a percentage increase of 82.76% in allocation for NCD. Year 2020-21 coincided with the period of COVID-19 pandemic. The increase in budget amount for health and NCD projects can be attributed to it.

4.1.4: Allocation for NCD Community interventions

Among NCD projects, the evidence-based approach found to be most cost -effective is community-based interventions, given the importance of lifestyle and environment modification for control of NCDs. In this section we estimated the share of budget allocated for such community interventions.

4.1.4.1: Proportion of budget allocated for NCD Community Interventions

Table 4.8: Budget allocation for NCD Community interventions (2018-22)

Type of Local Body	Mean (SD) allocation per year per district for NCD community interventions (Amount in lakhs)	Total allocation for NCD community interventions for four years (Amount in lakhs)	Proportion of allocation for NCD Community interventions among NCD projects	Proportion of allocation for NCD Community interventions among Health projects
Grama Panchayat	18.20 (10.18)	227.99	22.35%	1.43 %
Block Panchayat	25.25 (26.19)	303.04	24.74%	2.86 %
District Panchayat	18.38 (41.08)	220.50	14.42%	1.67 %
Urban Local Bodies	10.79 (10.81)	129.49	9.84%	0.67 %
All Local bodies	18.35 (25.18)	881.02	17.31 %	1.49%

Budget allocation for NCD Community Interventions is presented in table 4.8. Percentage share for community interventions (CI) was 17.31% of total allocation for NCDs. This amounts to only 1.49% of total allocation for health. In LSGs of rural areas, allocation for community interventions was more than one-fifth of total allocation for NCDs, 22.35% in GPS and 24.74% in BPs. But the allocation for community interventions by urban local bodies was only 9.84%.

4.1.4.2: Allocation for different types of NCD Community Interventions

In this section we are looking at the pattern of allocation for different types of community interventions like awareness campaigns, household level awareness creation and disease screening activities, community-based cancer screening camps, community level camps for NCD, and interventions for improving physical activity or healthy diet in the community.

Table 4.9: Allocation among different types of NCD community intervention projects

Type of NCD community intervention	**Mean allocation per year per district (Amount in lakhs)**	**Total allocation for four years (Amount in lakhs)**	**Percentage allocation among community interventions**
Community level awareness campaigns	3.17	152.1	17.26
Household level awareness and screening	5.17	248.17	28.17
Cancer screening	8.05	386.4	43.86
NCD camps	1.30	62.32	7.07
Physical activity improvement	0.67	32	3.63
Total	18.35	880.99	100.00

Table 4.9 presents allocation for different types of community interventions. Only a mean amount of Rs 18.35 lakhs were allocated per year per district for NCD community interventions. A total of Rs 880.99 lakhs were allocated in four years in three districts together. Among NCD community interventions, Rs 386.4 lakhs (43.86%) of allocation was for cancer screening. Another frequent CI project was Household level awareness and screening activities which got Rs 248.17llakhs (28.17%) of allocation. Rs 152.1 lakhs (17.26%) was allocated for Community level awareness campaigns. An amount of Rs 62.32 lakhs (7.07%) was spent for community level NCD camps. Only Rs 32 lakhs (3.63%) was allocated for four years

in three districts together for community interventions for improving physical activity. There were no projects for promoting healthy eating or reducing unhealthy food habits.

4.1.4.3: Local body wise allocation for NCD Community Interventions

Is there a difference in type of community interventions (CI) funded at each level of local bodies? Table 4.10 presents the details of local body wise allocation for NCD community interventions.

Table 4.10: Local body wise allocation for different types of NCD community intervention projects per district per year

Type of NCD community intervention	**Grama Panchayat**		**Block Panchayat**		**District Panchayat**		**Urban Local Body**	
	Mean amount	%	Mean amount	%	Mean amount	%	Mean amount	%
Community level awareness campaigns	5.83	30.68	1.91	7.56	0.25	1.36	4.69	43.47
Household level awareness and screening	3.26	17.16	14.90	59.01	0	0	2.52	23.35
Cancer screening	6.26	32.95	5.72	22.65	17.71	96.35	2.50	23.17
NCD camps	3.11	16.37	1.04	4.12	0	0	1.04	9.64
Physical activity improvement	0.54	2.84	1.68	6.65	0.42	2.29	0.04	0.37
Total	19	100	25.25	100	18.38	100	10.79	100

From table 4.10 we can understand that among the CI projects, Cancer screening camps were the priority community intervention in district Panchayats with 96.35% of allocation and in Grama Panchayats with proportion of allocation, 32.95%. Block Panchayats and urban local bodies also allocated considerably for cancer screening, 22.65% and 23.17% respectively. Though projects on community interventions were less in urban local bodies, out of the mean allocation per district per year of 10.79 lakhs, 4.69 lakhs (43.47) were for community level awareness campaigns. Grama Panchayats also allocated 30.68% for such campaigns. Community level awareness campaigns mainly include elements of Information Education and Communication activities. Among the mean allocation per district per year of Rs 25.25 lakhs for community level NCD interventions at Block Panchayat level, 14.90 (59.01%) was for conducting household level, door to door NCD awareness and screening campaigns. ULBs allocated 23.35% and GPs 17.16% for household level interventions. GPs and ULBs allocated 16.37% and 9.64% respectively for conducting community level NCD Camps. Among different levels of LSGs, block Panchayats allocated highest proportion of 6.65%, for projects to improve physical activity. Yet, the average amount allocated for physical activity projects by BPs in a district for one year was only 1.68 lakhs. The mean amount allocated for physical activity by 30 GPs per district for one year was only 0.54 Lakhs (2.84%). For district Panchayats it was only 0.42 L (2.29%) and ULBs, 0.04 L (0.37%).

4.1.5: Allocation for NCD projects based on major dimensions

Budget allocation for NCD projects was analyzed based on five dimensions, namely, type of project, level of intervention, agenda behind the project, function and objective of the project. In this section with five sub-sections, the results of analysis based on these five dimensions are presented.

4.1.5.1: Budget allocation for different types of NCD projects

NCD projects can be categorized into different types. Hospital based NCD projects include mainly projects for purchase of medicines, maintaining laboratory services for NCD screening and care and for special NCD clinics conducted in the hospital. With the rise in morbidity due to complications of diabetes like chronic kidney disease, the number of patients in need of dialysis have increased drastically. Hence, many local bodies are allocating funds for establishing and maintaining dialysis units in hospitals under their jurisdiction. In addition, due to the huge expenses related with management of complications of NCD, and cancer care, some local bodies allocate funds for projects aimed at direct cash transfer to patients in need. With the increasing incidence of cancer in Kerala, specific projects for cancer screening and care are planned by more and more local bodies. As discussed in section 4.1.4, community-based interventions form another important category of NCD projects.

Table 4.11: Budget allocation among different types of NCD projects

Type of NCD Project	**Mean allocation per year per district in lakhs**	**Total allocation for four years (Amount in lakhs)**	**Percentage allocation among NCD projects (5090.66 lakhs)**
Purchase of drugs	21.96	1053.86	20.70
Laboratory services	2.81	134.92	2.65
Special NCD clinics	2.29	109.73	2.16
Dialysis	26.97	1294	25.42
Cancer care*	11.04	530.0	10.41
Treatment aid	25.58	1227.91	24.12
Other interventions**	14.93	716.71	14.08

* Includes cancer screening and treatment

**NCD community interventions excluding cancer camps

Table 4.11 presents the budget allocation for different types of NCD projects. Among total budget allocated for NCD projects, 25.42% was for dialysis services and 24.12 % was for projects on direct cash transfer as financial aid for patients on treatment for NCD complications. For cancer screening and care 10.41% of NCD fund was allocated. Purchase of medicines for NCD treatment got 20.70% of allocation. Laboratory services (2.65%) and hospital based special NCD clinics (2.16%) got the least allocation.

Table 4.12: Local body wise allocation for different types of NCD projects

Type of NCD Project	**Grama Panchayat**		**Block Panchayat**		**District Panchayat**		**Urban Local Body**	
	Mean amount	%	Mean amount	%	Mean amount	%	Mean amount	%
Purchase of drugs	24.21	27.81	27.08	26.88	2.92	2.29	33.61	31.40
Laboratory services	3.69	4.24	5.17	5.13	0	0.00	2.39	2.23
Special NCD clinics	4.27	4.90	0.72	0.71	0	0.00	4.16	3.89
Dialysis	5.24	6.02	18.67	18.53	44.74	35.11	39.22	36.64
Cancer care	7.93	9.11	2.52	2.50	31.13	24.43	2.59	2.42
Treatment aid	29.12	33.44	26.35	26.15	30.27	23.75	16.58	15.49
Other interventions	12.61	14.48	20.24	20.09	18.38	14.42	8.50	7.94
Total	87.07	100	100.75	100	127.44	100	106.06	100

Table 4.12 presents local body wise allocation for different types of NCD projects. In Grama Panchayat's, highest proportion of allocation among NCD projects was for treatment aid, 33.44%, followed by purchase of drugs, 27.81%. Block Panchayat's spent 26.88% of their allocation for NCD projects in purchase of drugs, very closely followed by 26.15% for treatment aid. BPs allocate 18.53% for Dialysis services. DPs and urban local bodies allocate more than one-third of their NCD fund for dialysis

services, 35.11% and 36.64% respectively. Among allocation for NCD in District panchayat's, 31.13% was for cancer screening and care, and 30.27% for treatment aid. In Urban local bodies, after dialysis, highest proportion of allocation was for purchase of drugs, 31.40%, and then treatment aid, 15.49%.

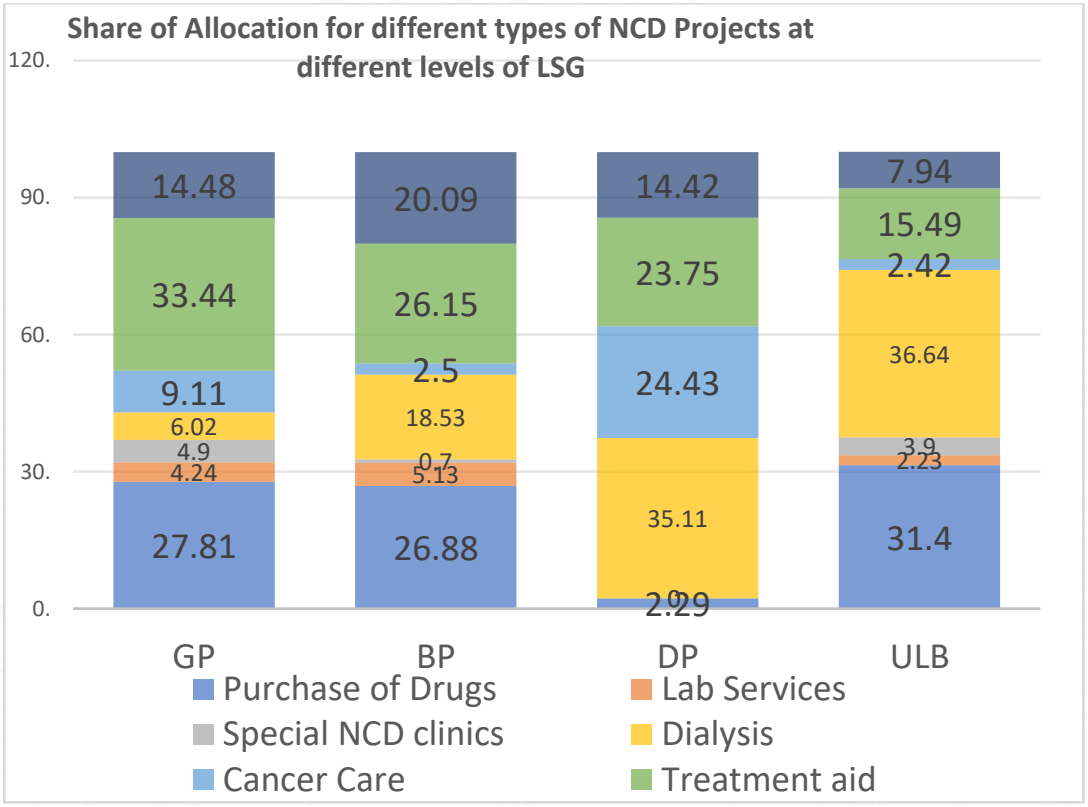


Fig 4.5: Share of Allocation for different types of NCD projects at different levels of LSGs

Figure 4.5 presents share of allocation for different types of NCD projects at each level of LSG. From the figure, it is clear that at all levels of LSGs, projects on cash transfer for treatment of NCD complications or Cancer care had a share of more than 15%,

highest being 33.4% at GP level and lowest, 15.49% at ULB level. District Panchayats and ULBs allocate more than 35% of NCD funds for dialysis units. As GPs, BPs and ULBs have to respectively manage PHCs, CHCs and Urban Health Centers, under their jurisdiction, they allocate more than one-fourth of their NCD funds for purchase of NCD medicines. Conducting Cancer screening camps has been taken up in a campaign mode by District Panchayats studied and hence 24.43% of their NCD funds is for Cancer Screening and Care.

4.1.5.2: Pattern of budget allocation for NCD projects based on level of intervention

All health interventions are conventionally classified into three levels of prevention, primary secondary and tertiary. Under primary level of prevention/ intervention we have all activities/projects aimed at Health promotion including awareness campaigns, physical activity improvement and projects promoting healthy diet, or activities for providing specific protection like immunization. Under the secondary level of prevention, we have early diagnosis and management. Projects for disease screening and curative services comes under secondary level. The modes of intervention under tertiary level of prevention are disability limitation and rehabilitation. Hence projects on management of complications comes under tertiary level. In this section we are analyzing fund allocation for NCD projects based on the dimension of levels of intervention.

Table 4.13: Budget allocation for different levels of NCD interventions

Level of intervention among NCD projects	**Mean allocation in lakhs**	**Total allocation for four years (Amount in lakhs)**	**Percentage allocation among NCD projects**
Primary Prevention	9.64	462.5	9.08
Disease Screening	12.86	617.16	12.12
Curative services	29.48	1415.06	27.79
Management of Complications	54.12	2597.65	51.01
Total	106.06	5092.37	100

From table 4.13, we can see that, of the total amount of Rs 5092.37 lakhs allocated for NCD projects, more than half, Rs 2597.65 Lakhs (51.01%) was for projects related to management of NCD complications, especially, those for dialysis and distributing financial aid for chronic patients. Curative services were allocated Rs1415.06 Lakhs (27.79%). This was followed by Rs 617.16 lakhs (12.12%) for screening services and the lowest share of NCD funds was for primary prevention of NCDs, Rs 462.5 lakhs (9.08%).

Table 4.14: Local body wise allocation for different levels of NCD interventions

Level of intervention among NCD projects	**Grama Panchayat**		**Block Panchayat**		**District Panchayat**		**Urban Local Body**	
	Mean amount	%	Mean amount	%	Mean amount	%	Mean amount	%
Primary Prevention	11.63	13.66	19.07	18.68	0.67	0.53	7.17	6.54
Disease Screening	8.33	9.78	3.44	3.37	29.38	23.05	10.29	9.38
Curative services	31.63	37.14	32.48	31.82	22.05	17.30	31.76	28.95
Management of Complications	33.57	39.42	47.09	46.13	75.34	59.12	60.48	55.13
Total	85.16	100	102.08	100	127.44	100	109.7	100

Table 4.14 presents local body wise allocation for different levels of NCD interventions. More than 50% of budget allocated was for projects on management of NCD complications, in DPs (59.12%) and ULBs (55.13%). BPs and GPs also allocated the highest share of funds for patients with complications of NCD, 46.13% and 39.42% respectively. Curative services were allocated the next higher proportion, ranging from 37.14% in GPs to 17.30% in DPs. ULBs allocated 28.95% for curative services. Projects on primary prevention of NCD got least allocation, ranging from 0.53% in DPs to 18.68% in BPs. A substantial proportion was allocated by DPs for projects on NCD screening.

4.1.5.3: Pattern of budget allocation for NCD projects based on agenda

During selection and finalization of projects, committee members take into consideration agendas set by national and state governments by means of existing guidelines and circulars. Projects formulated can also be based on specific local agenda. What type of agenda setting is behind fund allocation for each NCD projects was studied and is presented in table 4.15. Among amount allocated for NCD projects, 81.96% projects were for projects formulated based on local agenda. Allocation for NCD projects based on State or National agenda was relatively less.

Table 4.15: Budget allocation based on agenda setting for NCD Projects

Agenda	**Mean allocation in lakhs**	**Total allocation for four years (Amount in lakhs)**	**Percentage allocation among NCD projects**
Local agenda	86.92	4172.17	81.96
State/National	19.14	918.50	18.04

Table 4.16: Local body wise allocation based on agenda setting for NCD Projects

Agenda	**Grama Panchayat**		**Block Panchayat**		**District Panchayat**		**Urban Local Body**	
	Mean amount	%	Mean amount	%	Mean amount	%	Mean amount	%
Local	76.89	90.45	87.83	86.04	94.90	74.47	88.06	80.27
State/ National	8.12	9.55	14.25	13.96	32.53	25.53	21.65	19.73
Total	85.01	100	102.08	100	127.43	100	109.71	100

Table 4.16 shows that highest proportion of NCD allocation based on local agenda was done at GPs (90.45%). For DPs the proportion allocated based on local agenda was the least among LBs at 74.47%.

4.1.5.4: Pattern of budget allocation for NCD projects based on function

Projects can serve the function of production such as infrastructure or asset creation or can be for consumption like services and medicines for the beneficiary. Table 4.17 presents the allocation for NCD projects based on this dimension.

Table 4.17: Budget allocation for NCD based on Production vs consumption function

Function	**Mean allocation in lakhs**	**Total allocation for four years (Amount in lakhs)**	**Percentage allocation among NCD projects (Rs 5090.66)**
Production	29.37	1409.96	27.70
Consumption	76.73	3682.96	72.35

Among the total amount allocated for NCD projects, Rs 3682.96 lakhs (72.35%) was for consumption, with only Rs1409.96 lakhs (27.70%) allocated for productive activities like construction and purchase of assets/equipment.

Table 4.18: Local body wise allocation for NCD based on Productive vs consumption function

Function	**Grama Panchayat**		**Block Panchayat**		**District Panchayat**		**Urban Local Body**	
	Mean amount	%	Mean amount	%	Mean amount	%	Mean amount	%
Production	6.56	7.70	27.05	26.50	50.80	39.85	33.08	30.15
Consumption	78.59	92.30	75.01	73.50	76.68	60.15	76.63	69.85
Total	85.15	100	102.06	100	127.48	100	109.71	100

Table 4.18 presents local body wise allocation for NCD based on Productive vs consumption function. Projects based on consumption functions ranged from 60.15% in DPs to 92.30% in GPs. The higher proportion of allocation for production activities

as part of NCD projects done in District Panchayats and ULBs can be attributed to asset creating projects like installation of mammography machines and dialysis units.

4.1.5.5: Pattern of budget allocation for NCD projects based on Objective

Projects can have the objective of being end itself, that is directly giving services to the beneficiaries, or can be means to end like projects on infrastructure, assets and salary to staff.

Table 4.19: Budget allocation based on objective for NCD projects

Purpose	**Mean allocation in lakhs rupees**	**Total allocation for four years (Amount in lakhs rupees)**	**Percentage allocation among NCD projects (Rs 5090.66)**
Means to end	17.38	834.20	16.38
End itself	88.69	4257.00	83.62
Total	106.07	5091.2	100

Table 4.19 presents budget allocation based on objective for NCD projects. Only Rs 834.2 lakhs (16.39%) of amount allocated for NCD projects were having the purpose of being means to end. Rs 4257.00 lakhs (83.62%) was allocated for projects which were end itself. Majority of NCD projects were delivering direct services or medicines to the patients. Even projects aimed at transferring direct financial support for patients with NCD complications were a practice. The higher burden of NCD complications warrants higher allocation for end itself projects directly benefiting the beneficiaries.

Table 4.20: Local body wise allocation (lakhs rupees) based on objective

Purpose	**Grama Panchayat**		**Block Panchayat**		**District Panchayat**		**Urban Local Body**	
	Mean amount	%	Mean amount	%	Mean amount	%	Mean amount	%
Means to end	3.11	3.66	19.99	19.58	7.80	6.12	38.61	35.19
End itself	81.90	96.34	82.08	80.42	119.67	93.88	71.10	64.81
Total	85.01	100	102.07	100	127.47	100	109.71	100

In ULBs proportion of projects which were means to end were higher (35.19%), closely followed by BPs (19.58%). Whereas at GP level 96.34% projects were end itself directly benefiting the NCD patients.

4.1.6: Pattern of budget allocation for health projects

For understanding the pattern of budget allocation among health projects implemented at LSGs of Kerala, we used the three dimensions of line-item, program and level of intervention. These dimensions helped us in identifying the specific areas and health issues which were prioritized by the local planning process of Kerala during 2018-22.

4.1.6.1: Line-item wise budget allocation for health projects

Line -item wise budget as explained in the methods section, include amount allocated for construction activities, purchase of equipment and other assets, salary for human resource, purchase of medicines, transportation, maintenance and purchase of

furniture. In addition, one line item included in this study was multicomponent activities. This was particularly needed as health projects meant for conducting medical and screening camps, awareness classes and other community health campaigns often have a mix of other line items, without specific allocations for each head.

Table 4.21: Pattern of budget allocation based on line items among health projects (2018-22)

Line item	**Mean allocation in lakhs rupees**	**Mean allocation per LSG per year in lakhs rupees**	**Percentage allocation among health projects**
Total	3687.57	25.26	100
Construction	1305.72	8.94	35.44
Assets	366.57	2.51	9.95
Salary	147.33	1.01	4.00
Medicines	744.36	5.10	20.21
Transport	34.32	0.24	0.93
Multicomponent	864.39	5.92	23.46
Maintenance	199.38	1.37	5.41
Furniture	21.75	0.15	0.59

Table 4.21 shows the pattern of budget allocation based on line items among health projects.Among the total amount allocated for health sector projects, 35.44% was earmarked for infrastructure or construction activities. Multicomponent projects including camps, campaigns, and awareness classes had 23.46% of allocation. This was followed by fund for purchase of medicines, 20.21%. Routinely medicines for

health centers are supplied by the line department through Kerala Medical Services Corporation Ltd (KMSCL). But the estimated annual need for medicines often exceeds the department supply. Hence, most of the LSGs allocate funds for meeting additional requirement of medicines. Among total health allocation, 4% was for salary of temporary staff. Salary for staff in health centers and hospitals under LSGs are paid by the line department itself. Support from LSG health projects were needed only for additional recruitment of human resource for specific purposes. For example, under the Ardram program meant for improving the quality of services delivered by public hospitals, additional doctors, nurses and paramedics were recruited. For establishment and maintenance expenses including water and electricity charges and other daily expenses, 5.41% of the total amount was allocated. Details are shown in table 4.21.

Table 4.22: Local body wise budget allocation per line item among health projects

Line Item	**Grama Panchayat**		**Block Panchayat**		**District Panchayat**		**Urban Local Body**	
	Mean amount	%	Mean amount	%	Mean amount	%	Mean amount	%
Total	1325.12	100	884.44	100	1099.26	100	1602.98	100
Construction	356.26	26.89	319.90	36.17	548.33	49.88	516.45	32.22
Assets	43.21	3.26	100.18	11.33	164.48	14.96	180.90	11.28
Salary	71.20	5.37	36.61	4.14	0.00	0.00	88.63	5.53
Medicines	457.98	34.56	111.76	12.64	95.88	8.72	326.88	20.39

Line Item	Grama Panchayat		Block Panchayat		District Panchayat		Urban Local Body	
	Mean amount	%	Mean amount	%	Mean amount	%	Mean amount	%
Transport	13.48	1.02	4.79	0.54	22.89	2.08	4.60	0.29
Multicompo-nent	336.22	25.37	215.87	24.41	185.68	16.89	414.78	25.88
Maintenance	38.37	2.90	89.72	10.14	76.54	6.96	61.21	3.82
Furniture	8.40	0.63	5.61	0.63	5.46	0.50	9.54	0.60

Table 4.22 shows local body wise budget allocation for line items among health projects. In GPs, highest proportion of allocation was for purchase of medicines (34.56%). This was closely followed by allocation for construction activities (26.89%). Multicomponent projects had 25.37% of allocation among health projects in GPs. The highest proportion of budget was allocated for construction projects, in BPs (36.17%), DPs (49.88%) and ULBs (32.22%).

4.1.6.2: Pattern of budget allocation among different health programs

In this section, we tried to understand the priority given to different health issues, or specifically the programs under which interventions were planned. For this, the pattern of allocation for health projects under different health programs was studied. Programs listed were NCD, Palliative care, Reproductive and Child Health (RCH), Communicable Diseases, Ardram (Health and Wellness Centers), Mental Health,

COVID-19 and Tribal Health. Delivering hospital services was considered a program and it included projects on purchase of medicines and equipment, maintenance charges, and salary for additional staff. As per state government rules, it was mandatory that all local bodies implemented projects for palliative care. Less common projects planned by some local bodies were those on quality improvement for applying for hospital accreditation processes and quality assurance, maintaining green protocol in hospitals, climate change action and other projects on environment modification. They were group together in the other programs category. All these programs including hospital services are primarily funded by health department of State government. In addition, national programs receive central share. Local Self-Governments role is in implementing projects for development of health sector, including health promotion of the community, prevention of specific diseases, and strengthening hospital services.

Table 4.23: Health Program wise allocation of Budget

Program	**Mean allocation per year per district in lakhs**	**Mean allocation in lakhs**	**Percentage allocation among health projects**
NCD	106.06	318.18	8.63
Palliative	136.71	410.13	11.13
Hospital services	666.27	1998.81	54.26
RCH	24.47	73.41	1.99
CD	35.12	105.36	2.86
Mental Health	1.91	5.73	0.16

Program	Mean allocation per year per district in lakhs	Mean allocation in lakhs	Percentage allocation among health projects
Ardram (HWC)	56.30	168.9	4.58
COVID-19	144.61	433.83	11.78
Tribal health	1.37	4.11	0.11
Others*	55.37	166.11	4.61
Total	1229.19	3687.57	100

*Projects on Quality improvement, accreditation, green protocol, climate change, environment.

Table 4.23 presents the program- wise budget allocation for LSG health projects. The highest proportion of allocation for health sector went for projects on maintaining hospital services like construction, purchase of medicines and equipments, salary, and daily expenses. The mean amount allocated for a district in a year during the period of 2018-22 for projects related to hospital services was Rs 666.27 Lakhs (54.26%). Even though, COVID-19 projects were implemented following the pandemic only for two years (2020-2022) of period under study, 11.78% of total allocation was for projects on pandemic control. Palliative projects, which were mandatory for all local bodies, had 11.13% of allocation. NCD projects were allocated 8.63% of amount and the state governments program on mission mode for improving quality of public hospitals, ‘Ardram’, was assigned 4.58% of the budget. Communicable diseases excluding COVID-19 (2.86%), Maternal and Child health (1.99%), Mental health (0.16%) and tribal health (0.11%) were the other important programs.

Table 4.24: Local body wise budget allocation among different health programs

Program	**Grama Panchayat**		**Block Panchayat**		**District Panchayat**		**Urban Local Body**	
	Mean amount	%	Mean amount	%	Mean amount	%	Mean amount	%
NCD	85.07	6.66	101.04	11.42	127.43	12.01	109.71	6.97
Palliative	240.91	18.87	126.19	14.27	60.15	5.67	119.58	7.60
Hospital services	615.25	48.18	496.94	56.19	680.23	64.09	872.62	55.46
RCH	11.59	0.91	17.40	1.97	45.22	4.26	23.68	1.51
CD	19.96	1.56	3.86	0.44	14.69	1.38	101.96	6.48
Mental Health	1.80	0.14	5.84	0.66	0.00	0.00	0.00	0.00
Ardram (HWC)	128.28	10.05	15.79	1.78	41.73	3.93	39.41	2.50
COVID-19	169.30	13.26	79.92	9.04	89.21	8.40	240.02	15.25
Tribal health	2.25	0.18	0.53	0.06	2.72	0.26	0.00	0.00
Others*	2.46	0.19	34.93	3.95	0.00	0.00	66.39	4.22
Total	1276.88	100	884.44	100	1061.38	100	1573.36	100

*Projects on Quality improvement, accreditation, green protocol, climate change, environment

Table 4.24 give details of program wise budget allocation for each level of LSG. At every level, highest proportion of funds was allocated for hospital services. Strengthening hospital services, asset creation, meeting additional requirements for medicines, and maintenance of hospitals are primary function of LSGs. Hence the

proportion allocated for such activities ranged from 48.18% in GPs to 64.09% in DPs. Higher proportion of allocation was given for palliative projects, ranging from 5.67% in DPs to 18.87% in GPs.

4.1.6.3: Budget allocation based on level of intervention among health projects

Table 4.25: Budget allocation among different levels of intervention

Level of intervention	**Mean allocation per year per district in lakhs**	**Mean allocation in lakhs**	**Percentage allocation among health projects**
Total	1229.19	3687.57	100
Primary Prevention	75.92	227.76	6.18
Disease Screening	13.73	41.19	1.12
Curative services	961.81	2885.43	78.25
Management of Complications	177.72	533.16	14.46

Table 4.25 presents pattern of allocation based on level of intervention. The major proportion of budget for health sector was allocated for curative services alone (78.25%), under secondary and tertiary level of prevention. An additional, 14.46% was allocated for projects specifically for tertiary prevention, which includes management of complications, palliation and rehabilitation. For specific projects on disease screening, 1.12% of total amount was allocated. For projects on primary prevention of diseases, only 6.18% of the budget amount was allocated.

Table 4.26: Local body wise budget allocation among different levels of intervention

Level of intervention	**Grama Panchayat**		**Block Panchayat**		**District Panchayat**		**Urban Local Body**	
	Mean amount	%	Mean amount	%	Mean amount	%	Mean amount	%
Primary Prevention	104.15	7.83	27.09	3.06	83.44	7.59	89.00	5.55
Disease Screening	9.79	0.74	4.31	0.49	29.38	2.67	11.46	0.72
Curative services	950.93	71.52	697.78	78.90	838.00	76.20	1360.52	84.87
Management of Complicatio-ns	264.79	19.91	155.25	17.55	148.86	13.54	141.99	8.86
Total	1329.66	100	884.44	100	1099.68	100	1602.98	100

Highest proportion of allocation at all levels of LSGs is for curative services ranging from71.52% in GPs to 84.87% in ULBs. Second highest allocation is for management of complications ranging from 8.86% in ULBs to19.91% in GPs. Projects on Primary prevention has lower allocation than desired ranging from3.06% in BPs to7.83% in GPs.

4.2. ANNUAL HEALTH PROJECTS WITH SPECIFIC REFERENCE TO NCD DURING FINANCIAL YEARS 2021-2022 IN GRAMA PANCHAYATS OF KERALA: BUDGET ALLOCATION AND ASSOCIATED FACTORS

For the purpose of detailed analysis to determine the factors associated with allocation for NCD, in the second phase of the study, additional information was obtained from the selected 90 Grama panchayats. Primary data was collected by means of interviews among members of health sector working group for local planning in the selected GPs. One to two members were contacted to get a general idea regarding the priority setting process in their working groups. Doctors, field health workers and elected representatives were chosen as respondents as they were involved in the whole planning process. We chose the latest year of 2021-22 for the detailed analysis.

In this section results of analysis of primary data collected from 90 selected grama panchayats is presented. In addition to the dimensions explored in secondary data analysis, more information on associated factors could be included in primary data analysis. With disaggregate data available for each GP from primary data collection, detailed analysis with each GP as sampling unit was done. A total of 1269 health projects and 83 NCD projects were included in the analysis. A region wise analysis was also done for the pattern of allocation.

4.2.1: Profile of Primary respondents

One member each from 90 GPs were included in the final list of respondents, after the initial discussions with one to two members of the working group for health planning. Medical officer, Health supervisor/ Inspector, Chairman of health standing committee of all Grama panchayats were contacted initially. One among them was selected as the primary respondent based on their willingness and enthusiasm to provide more information. Wherever needed additional information was obtained by contacting other members of the working group.

Characteristics (N=90)		**N (%) / Mean (SD)**
Age	Range;28-58	46.08 (7.88)
Experience in years	Range; 1- 20	9.49 (4.90)
Gender	Female	45 (50%)
	Male	45 (50%)
Designation	Medical officer	40 (44.4%)
	Health supervisor/Inspector	28 (31.1%)
	Elected representative	22 (24.4%)

Mean (SD) of age of respondents was 46.08 (7.88), with minimum age 28 and maximum age 58 years. Male and female respondents were equal in number and their mean years of experience in local planning was 9.5 years. Medical officer comprised

44% of respondents, 31% were health supervisors or inspectors and 24% were elected representatives.

4.2.2: Analysis of Grama Panchayat projects for the year 2021-22

Grama panchayats were selected for detailed analysis due to two reasons. There are greater number of Grama panchayats than local bodies at all other levels, which meets the sample size requirement for inferential analysis. GPs being the lowest level of local governance, the pattern and factors associated with local planning can be better analyzed at this level. Financial year 2021-22 was the latest year under study and hence included for inferential analysis to better understand factors associated with allocation for NCD projects.

4.2.2.1: Budget Allocation for Health and NCD projects in Grama Panchayats (2021-2022)

Table 4.27 shows allocation for health projects in the Grama Panchayats during 2021-22. District wise distribution of allocation is also presented. A total of 1269 health projects were implemented in 90 GPs during the financial year 2021-22. GPs from Thiruvananthapuram (TVPM) had highest number of health projects, 464, while Kottayam district implemented lowest number of 345 projects. Mean (SD) of the budget allocation in lakhs rupees for each health project in a GP was 4.39 (6.25), which varied from 3.44(3.61) in Kozhikode to 4.87 (9.5) in Kottayam. The mean number of health projects in a GP during 2021-22 was 14.10. The mean (SD) amount allocated by a GP for health projects in a year was 61.34 (31.76). It was highest for

Thiruvananthapuram, 75.23 (26.34) lakhs rupees and lowest for Kozhikode, 52.74 (19.53) lakhs rupees. The minimum allocation for health for a GP was Rs 18.70 lakhs and maximum was Rs 245.80 lakhs. The total amount allocated for the year in all 90 GPs combined was Rs 5520.32 lakhs, The highest allocation was for Thiruvananthapuram, Rs 2256.94 lakhs and lowest for Kozhikode, Rs1582.19 lakhs.

Table 4.27: Allocation for Health in Grama Panchayats (N=90); Amount in lakhs (Rs) for year 2021-22

District	**No of projects**	**Mean amount for a health project (lakhs rupees)**	**Mean number of health projects in a GP**	**Mean amount for a GP (lakhs rupees)**	**SD**	**Sum**
Kottayam	345	4.87	11.50	56.04	41.42	1681.24
Kozhikode	460	3.44	15.33	52.74	19.53	1582.19
TVPM	464	4.86	15.46	75.23	26.34	2256.96
Total	1269	4.39	14.10	61.34	31.76	5520.39

Table 4.28 presents district wise allocation for NCD projects in the GPs during 2021-22. A total of 83 NCD projects were implemented in 90 GPs during the financial year 2021-22. GPs from Kozhikode implemented highest number (42) of NCD projects, and Kottayam had lowest number (14) of projects. Mean (SD) of the budget allocation in lakhs rupees for the each NCD projects was 2.60 (2.66), which ranged from 2.25(3.6) in Kottayam to 2.79 (2.39) in TVPM. The mean number of NCD projects in

a GP during 2021-22 was 0.92, with a minimum of zero and maximum of three NCD projects. The mean (SD) amount allocated by a GP for NCD projects in a year was 2.48 (3.61). It was highest for Kozhikode, 3.87 (3.33) lakhs rupees and lowest for Kottyam, 1.05 (2.69) lakhs rupees. The minimum allocation for NCD for a GP was zero and maximum was Rs 14 lakhs. The total amount allocated for the year in all 90 GPs combined for NCD projects was Rs 222.97 lakhs, The highest allocation was for Kozhikode, Rs 116.04 lakhs and lowest for Kottayam, Rs 31.48 lakhs.

Table 4.28: Allocation for projects for NCD control in Grama Panchayats (N=90); Amount in lakhs (Rs) for year 2021-22

District	No of projects	Mean amount for a project	Mean number of NCD projects in a GP	Mean amount for a GP	SD	Sum
Kottayam	14	2.25	0.47	1.05	2.69	31.48
Kozhikode	42	2.76	1.40	3.87	3.33	116.04
TVPM	27	2.79	0.90	2.52	4.18	75.45
Total	83	2.60	0.92	2.48	3.61	222.97

4.2.2.2: Proportion of Budget Allocation for NCD projects in Grama Panchayats

Percentage allocation for NCD projects among health projects for GPs was only 4.04%. In terms of number, the percentage of health projects which were for NCD was 6.54%. The highest percentage allocation was in North zone, 7.33% and the least percentage allocation was in central zone, 1.87%. Details are given in table 4.29. In all the three zones percentage allocation for NCD was lowest during year 2021-22. The

highest allocation happened during year 2020-21. The trend of percentage allocation for NCD from 2018-2022 is shown in figure 4.6.

Table 4.29: Percentage allocation for NCD projects (amount in lakhs (Rs)) among health sector projects under Grama Panchayats for year 2021-22

District	**Allocation for Health Projects Amount (No of Projects)**	**Budget allocated for NCD projects Amount (%)**	**No of NCD projects (%)**
Kottayam	1681.21 (345)	31.48 (1.87)	14 (4.06)
Kozhikode	1582.17 (460)	116.04 (7.33)	42 (9.13)
TVPM	2256.94 (464)	75.45 (3.34)	27 (5.82)
Total	5520.32 (1269)	222.97 (4.04)	83 (6.54)

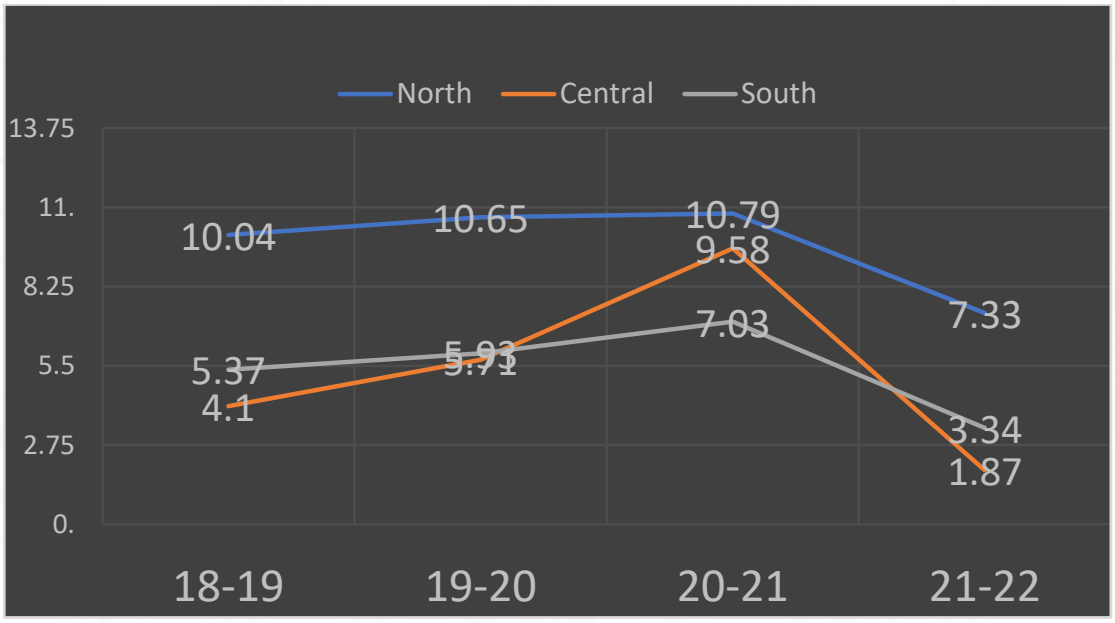


Fig 4.6: Trend in share of allocation for NCD as percentage of total allocation for health in GPs at different regions (2018-2022).

4.2.2.3: Amount allocated for different types of projects and its relationship

We tried to estimate the mean (SD) allocation for different types of health projects in GPs during 2021-22 (Table 4.30). Mean (SD) of budget allocation for all health projects together in a Grama Panchayat was 61.34 (31.76), and that of NCD projects was 2.48 (3.61) lakhs rupees. Mean amount of allocation for a Grama Panchayat for NCD community interventions was 0.55 lakhs rupees and that for NCD projects on primary prevention was only 0.27 lakhs rupees. Budget allocation for health projects on primary prevention was 5.05 lakhs for a grama panchayat. Mean allocation in a GP for health projects with production function was Rs 10.62 lakhs

Table 4.30: Allocation in lakh rupees for health projects in Grama Panchayats during 2021-2022

Allocation in lakhs	**Mean**	**Std. Deviation**	**N**
Health Projects	61.34	31.76	90
NCD projects	2.48	3.61	90
NCD Community interventions	.55	2.09	90
NCD projects on primary level prevention	.27	1.56	90
Health projects on primary prevention	5.05	9.37	90
Health projects with production function	10.62	12.28	90

Table 4.31: Relationship between amounts allocated for different projects in GPs during 2021-22

Allocation in lakhs		**Health Projects**	**NCD Community intervention**	**NCD primary prevention**	**Health projects on primary prevention**	**Health projects on production**
NCD projects	r	.032	.546**	.453**	.201	.062
	p	.764	<.001	<.001	.057	.561
Health Projects	r	1	-.063	.047	.287**	.401**
	p		.558	.663	.006	<.001
NCD Community interventions	r		1	.618**	.087	-.078
	p			<.001	.415	.467
NCD projects on primary level prevention	r			1	.364**	-.023
	p				<.001	.829
Health projects on primary prevention	r				1	.044
	p					.683

** p<0.05

r- pearson correlation coefficient, p- p value

Table 4.31 presents the correlation between amount allocated and type of project. Allocation for NCD community intervention and NCD projects on primary prevention positively correlated with allocation for NCD. If higher amount is allocated for NCD, there is chance of more allocation for community interventions and projects on

primary prevention. More allocation for health projects increased allocation for projects on primary prevention and production activities. There was inverse relationship between allocation for health projects for production activities and both NCD community interventions and NCD primary prevention projects.

Table 4.32: Grama Panchayat's with at least a single health project for primary prevention (2021-2022)

Type of project	**No of GPs with at least a single project (N=90)**	**Percentage**
Health project on primary prevention	60	66.7
NCD project on primary prevention	7	7.8
NCD community intervention	19	21.1

Table 4.32 presents the proportion of Grama Panchayats with at least a single health project for primary prevention. Interventions for primary prevention of diseases need to be planned at local level. Health projects of LSGs is an opportunity for strengthening primary prevention in the community. Implementing projects for primary prevention being the mandate of Grama Panchayats, only 66.7% of GPs had such projects. When it comes to projects on primary prevention of NCD, only 7.8% GPs implemented them. And 21.1% of GPs had projects on NCD Community interventions.

4.2.2.4: Association between NCD projects and project profile for Grama Panchayats during 2021-22

Inferential analysis using chi square test to find out the association between NCD projects and project profile gave following results. P<0.05 was considered significant.

Table 4.33: Association between number of NCD projects and district

District		**Type of Project**		**Total**
		NCD	**Non-NCD**	
Kottayam	N	14	331	345
	%	16.9%	27.9%	27.2%
Kozhikode	N	42	418	460
	%	50.6%	35.2%	36.2%
TVPM	N	27	437	464
	%	32.5%	36.8%	36.6%
Total	N	83	1186	1269
	%	100.0%	100.0%	100.0%

P=.012

Among NCD projects, 50.6% were from Kozhikode district, whereas only 16.9% projects were from Kottayam (Table 4.33). There was significant association between district and allocation for NCD project.

Table 4.34: Association between NCD project and category of allocation

Category of allocation		Type of Project		Total
		NCD	Non-NCD	
Production	N	0	250	250
	%	0.0%	21.1%	19.7%
Consumption	N	83	936	1019
	%	100.0%	78.9%	80.3%
Total	N	83	1186	1269
	%	100.0%	100.0%	100.0%

P<.001

All NCD projects were for consumption category. Whereas for non-NCD projects 21.1% were for production (Table 4.34)

Table 4.35: Association between NCD project and objective of allocation

Objective		Type of Project		Total
		NCD	Non-NCD	
End itself	N	82	552	634
	%	98.8%	46.5%	50.0%
Means to End	N	1	634	635
	%	1.2%	53.5%	50.0%
Total	N	83	1186	1269
	%	100.0%	100.0%	100.0%

P<0.001

Majority (98.8%) of NCD projects were for end itself, directly benefiting the clients, whereas for non-NCD projects only 46.5% were end itself projects (Table 4.35). The difference was statistically significant.

Table 4.36: Association between NCD project and setting of intervention

Activity		**Type of project**		**Total**
		NCD	**Non-NCD**	
Community-based	N	22	153	175
	%	26.5%	12.9%	13.8%
Facility -based	N	61	1033	1094
	%	73.5%	87.1%	86.2%
Total	N	83	1186	1269
	%	100.0%	100.0%	100.0%

P<0.001

NCD projects were more likely to be community-based interventions (26.5%), compared to 12.9% of non-NCD projects. The association was statistically significant. (Table 4.36)

Table 4.37: Association between NCD project and level of intervention

Level of Intervention		**Type of Project**		**Total**
		NCD	**Non-NCD**	
Primary prevention	N	7	120	127
	%	8.4%	10.1%	10.0%
Disease screening	N	17	4	21
	%	20.5%	0.3%	1.7%
Curative services	N	26	932	958
	%	31.3%	78.6%	75.5%
Management of Complications	N	33	130	163
	%	39.8%	11.0%	12.8%
Total	N	83	1186	1269
	%	100.0%	100.0%	100.0%

P<.001

Among NCD projects, 39.8% were for management of complications, and 31.3% for curative services. Whereas for non-NCD, 78.6% were for curative services. Projects on primary prevention was only 8.4% of total NCD projects and 10.1% of non-NCD projects. Among NCD projects 20.5% were for disease screening. The association was statistically significant (Table 4.37)

4.2.2.5: Change in pattern of budget allocation for health projects in Grama Panchayats between 2018-19 and 2021-22

A comparison of pattern of budget allocation between the farthest and latest year of study was done. Figure 4.7 and table 4.38 gives the results of comparative analysis.

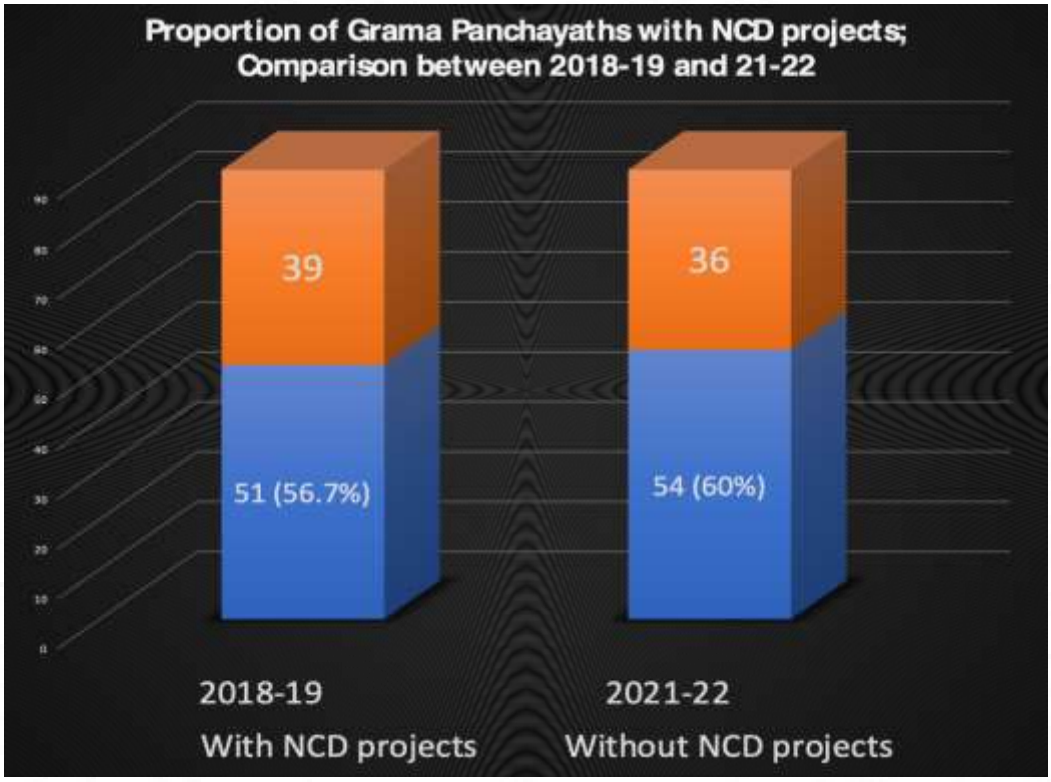


Figure 4.7: Grama Panchayats with NCD projects

During 2018-19, only 51 (56.7%) of Grama panchayats had at least one NCD project, which increased to 54 (60%) by 2021-22.

Table 4.38: Comparison of budget allocation for health and NCD projects between 2018-19 and 2021-22

Allocation in lakhs	Year	Mean	Mean difference	SD	95%CI of difference		P value*
					Lower	Upper	
NCD Projects	2021-22	2.48	0.43	4.76	-.57	1.42	0.397
	2018-19	2.05					
Health projects	2021-22	61.34	29.40	29.54	23.21	35.59	<0.001
	2018-19	31.94					
NCD community interventions	2021-22	.55	0.12	2.24	-0.35	0.59	0.625
	2018-19	.44					

*Independent samples t test, significant at $p<0.05$

There is a significant increase in allocation for health projects in 2021-22 compared to 2018-19. However, there is no significant increase in allocation for NCD during that period.

4.2.3: Factors in planning process associated with resource allocation for NCD projects in Grama Panchayats

For understanding factors associated with prioritization, for resource allocation for NCD projects, analysis of primary data collected from 90 GPs for the year 2021-22 was done. Out of the 90 GPs, only 54 (60%) had at least one NCD project. The mean budget allocation for NCD projects among the 214 Grama Panchayats of selected three districts of Kerala during the period 2018-22 was estimated to be Rs 3 Lakhs. Based

on this mean, GPs were grouped into LSGs with high and low allocation for NCD projects. Further inferential analysis was done based on these two groups. Factors relevant during local level planning process was analyzed.

Table 4.39 shows the association between these factors and chance of high allocation for NCD in the GPs. Among the 90 GPs studied 35 (38.9%) belonged to high allocation group and 55 (61.1%) GPs had low allocation for NCD. Considering health status report for prioritization, considering best practices/evidence, following local agenda and prioritizing NCD during working group discussions were significantly associated with high allocation for NCD projects. Whereas following previous year pattern of budget allocation, and experiencing political pressure for tangible outcome were significantly associated with low allocation for NCD projects. Giving priority for popular projects or active discussions in working group were not associated with allocation for NCD projects.

Among the 35 (38.9%) GPs which considered health status report for prioritization, 65.7% had high allocation, whereas among the rest 61.1% of GPs which did not actually took into consideration health status report for prioritization, only 21.8% had high allocation for NCD. Active discussions in working group were there for 50 (55.6%) GPs. Among them 44% had high allocation, whereas for GPs where active discussions were missing, only 32.5% had high allocation. But this difference was not statistically significant. Only 7 (7.8%) GPs considered best practices or evidence for planning and 6(85.7%) of those GPs had high allocation. Previous year pattern of

allocation was followed by 55 (61.1%) GPs. Among them only 16 (29.1%) had high allocation, whereas for those GPs not following previous patterns, 54.3% had high allocation, making it a significant negative factor. Half of the GPs predominantly followed local agenda, and among them 51.1% had high allocation, significantly higher than 26.7% in the other half. Only 30 (33.3%) GPs took NCD as a priority issue for discussion within working groups. Among them 16 (53.3%) had high allocation, significantly higher than 31.7% in the other group. GPs which reported having political pressure for tangible outcomes upon their working groups were 53 (58.9%). Of which, only 20.8% had high allocation for NCD. But for those GPs without political interference for allocating for tangible outcomes, 64.9% allocated more than the mean allocation for NCD projects. In Figure 4.8, the association discussed in the table 4.39 is represented.

Table 4.39: Factors in planning process associated with high allocation (≧ Rs3 Lakhs) for NCD projects in Grama Panchayats of Kerala (N=90)

Factors influencing allocation		**High allocation 35 (38.9%)**	**Low allocation 55 (61.1%)**	**Total 90 (100)**	**P value***
Considering Health Status report for prioritization	Yes	23(65.7)	12 (34.3)	35 (38.9)	<0.001
	No	12(21.8)	43 (78.2)	55 (61.1)	
Active discussions in working group	Yes	22 (44)	28 (56)	50 (55.6)	0.266
	No	13 (32.5)	27 (67.5)	40 (44.4)	
Considering best practices/evidence	Yes	6 (85.7)	1 (14.3)	7 (7.8)	0.008
	No	29 (34.9)	54 (65.1)	83 (92.2)	
Following previous years pattern	Yes	16 (29.1)	39 (70.9)	55 (61.1)	0.017
	No	19 (54.3)	16 (45.7)	35 (38.9)	
Priority for Popular projects	Yes	17 (44.7)	21 (55.3)	38 (42.2)	0.331
	No	18 (34.6)	34 (65.4)	52 (57.8)	
Following Local agenda	Yes	23 (51.1)	22 (48.9)	45 (50)	0.017
	No	12 (26.7)	33 (73.3)	45 (50)	
NCD was a priority in working group discussion	Yes	16 (53.3)	14 (46.7)	30 (33.3)	0.047
	No	19 (31.7)	41 (68.3)	60 (66.7)	
Political pressure for tangible outputs	Yes	11 (20.8)	42 (79.2)	53 (58.9)	<0.001
	No	24 (64.9)	13 (35.1)	37 (41.1)	

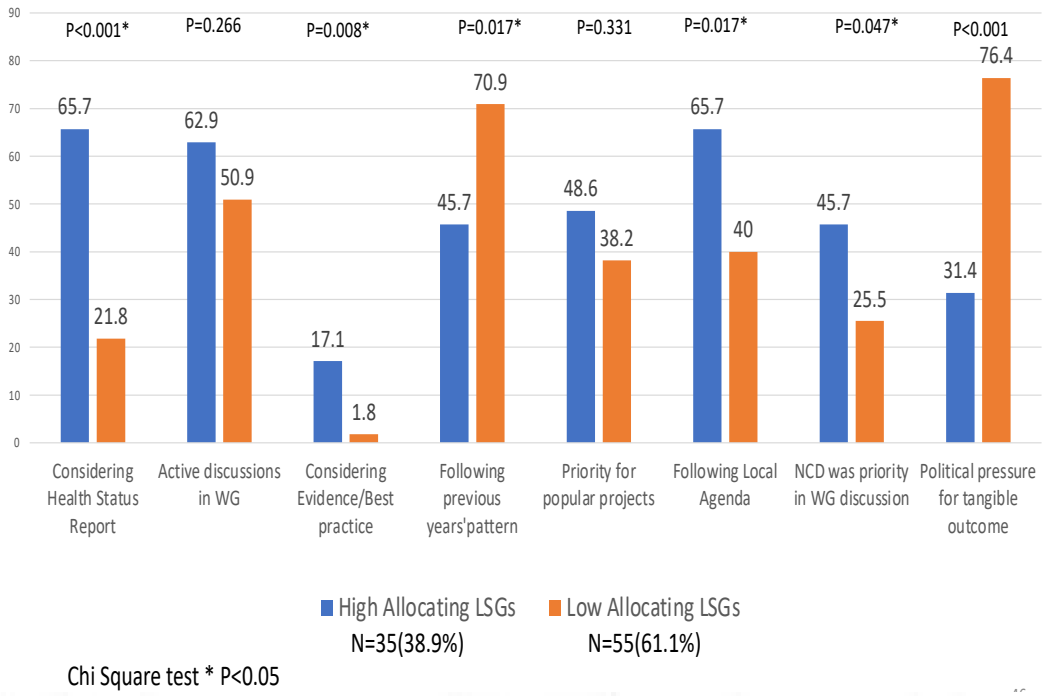


Fig 4.8: Factors in planning process associated with high allocation for NCD projects in Grama Panchayats of Kerala

Univariable analysis done with health system factors as independent variables

The quality of health services in the Government health institutions under each LSG was assessed from the scores obtained by the institutions in any of the accreditation or quality assurance gradings including Kayakalpam, KASH or NQAS. The cut off prescribed by the grading agency was followed for categorizing the institutions with good scores and poor scores for quality assessment. Availability of staff was assessed by vacancy status in the health centres. If only less than 10% positions were vacant in an institution, it was categorized as having adequate staff. Distance of facility or

accessibility was assessed in terms of distance of facility from important roads and bus stops. If public transport facility was available within 500 metres of the health centre it was categorised as accessible.

Health system factors influencing allocation		**High allocation 35 (38.9%)**	**Low allocation 55 (61.1%)**	**Total 90 (100)**	**P value***
Good scores for health institution in quality assessments	Yes	25 (80.6)	6 (19.4)	31 (100)	<0.001
	No	10(16.9)	49 (83.1)	59 (100)	
Adequacy of staff in health institution	Yes	27 (39.7)	41 (60.3)	68 (100)	0.780
	No	8 (36.4)	14 (63.6)	22 (100)	
Accessibility of health institution	Yes	30 (40.5)	44 (59.5)	74 (100)	0.489
	No	5 (31.3)	11 (68.8)	16 (100)	

*Chi square test

Those LSGs having public health institutions with higher quality of health services allocated higher amount of budget for NCDs projects. Only 31 (34.44%) LSGs had institutions with higher scores in quality assessment programs. Among those LSGs, 25 (80.6%) had high allocation for NCD projects, whereas among 59 (65.56%) LSGs with low scores in quality assessment, only 10 (16.9%) had high allocation for NCD. The association between quality of services offered by health centres and high allocation for NCD by respective LSGs was statistically significant (p<.001). Other

two health system factors viz adequacy of staff and accessibility were not significantly associated with high allocation for NCD.

In table 4.40 comparison of mean allocation for different projects between GPs with high and low allocation for NCDs is shown. There was no significant difference in allocation for different type of projects between the two groups except for allocation for production activities (P=0.037). Those GPs which had high allocation for NCD had a mean allocation of Rs 8.47 Lakhs for health projects for production activities. Whereas low allocating GPs had a significantly higher mean allocation of Rs 14 lakhs for projects on production activities.

Table 4.40: Comparison of mean allocation for different projects between GP with high and low allocation for NCDs (N=90) (2021-22)

Factors	**NCD allocation**	**N**	**Mean**	**Std. Deviation**	**P value***
Allocation for health	High	35	60.97	27.10	0.930
	Low	55	61.57	34.63	
No of health projects	High	35	15.14	4.36	0.082
	Low	55	13.44	4.57	
Allocation for primary interventions	High	35	6.51	12.00	0.243
	Low	55	4.13	7.18	
Allocation for productive activities	High	35	8.47	4.68	0.037**
	Low	55	14.00	10.03	

*Independent sample t test, **p<0.05,

From the above given univariable analysis, out of the 12 variables studied, seven factors had statistically significant association (P<0.05) with the outcome variable of

high budget allocation for NCD. The four factors positively influencing allocation for NCD were considering health status report for priority setting by working groups on health planning, considering best practices and evidence while prioritizing interventions as part of project planning by working groups, following local agenda in priority setting, and working group discussions including NCD as a priority topic. Three independent factors were detrimental or negatively influencing budget allocation for NCD. Those LSGs where the members of working group reported that they experienced political pressure for prioritizing certain interventions especially tangible ones, had low allocation for NCD. Allocation of NCD was significantly low in LSGs where previous years' pattern of budget allocation was followed. Those LSGs which allocated higher amount for production functions like construction and assets allocated significantly lower amount for NCD.

To adjust for confounding effect of multiple variables, and to identify the independent association of these factors with outcome of high allocation for NCD, a regression analysis was done using binary logistic regression. All variables found to be statistically significant ($P<0.05$) in univariable analysis was included in the regression model constructed by the enter method. The model included seven variables. Table 4.41 shows results of multivariable analysis.

Considering Health status report for prioritizing was significantly associated with higher allocation for NCD with adjusted Odds ratio of 6.135 ($p=0.005$). Experiencing political pressure for tangible outcome during priority setting meetings negatively

influenced allocation for NCD with odds ratio of 0.144 (p=0.001). Those GPs which considered health status report during the planning process was six times more likely to allocate higher budget for NCD projects. Whereas, those GPs which experienced political pressure for allocating for projects with tangible outcome had an 86% reduction in chance for higher allocation for NCD projects.

Table 4.41: Determinants of High allocation for NCD in Grama Panchayats

Associated Factors	B	P value	Adjusted Odds ratio**	95%C.I.for Odds ratio	
				Lower	Upper
Working groups considering status report for priority setting	1.814	.005*	6.14	1.72	21.87
NCD was a topic given priority in working group discussion	.091	.915	1.09	.204	5.877
Best practices/ evidence was considered for formulation of plans in working groups	1.518	.323	4.56	.224	92.82
Working group members reported that there was political pressure for selecting certain projects with tangible outcome	-1.936	.001*	.144	.044	.470
Decisions were made based on local agenda	-.275	.702	.759	.185	3.11
Higher amount of budget allocation made for projects with production function	-.035	.174	.966	.919	1.01
Budget allocation was made following previous years' pattern	-.019	.981	.982	.213	4.53

*p<0.05 Nagelkerke R square = 0.449

**Reference category for all variables was not following/ not having the process or step in planning.

In the model one factor positively influencing high allocation for NCD and one detrimental factor retained its significance. Considering health status report is a variable which is a proxy for following systematic and scientific method for planning. The other variables like considering best practices/evidence, prioritising NCD as a topic in working group discussion and following the local agenda are also associated with the process of following systematic and scientific methods. From this we can infer that LSGs which follow systematic and scientific methods tend to allocate more for NCD. Whereas undue political influence for prioritising projects with tangible outcome, without following the methods and principles of planning, negatively influences allocation based on actual disease burden and need.

4.2.4 Factors influencing resource allocation in local health planning; multiple streams approach

Based on the study findings a model for aligning the streams of problem, project and politics for appropriate resource allocation in local level planning was created (Fig 4.9). The outcome in the model is high allocation for a high burden problem like NCD which is proxy for appropriate resource allocation in local health planning. The model explores the factors of each stream in local level planning process which can positively or negatively influence appropriate budget allocation.

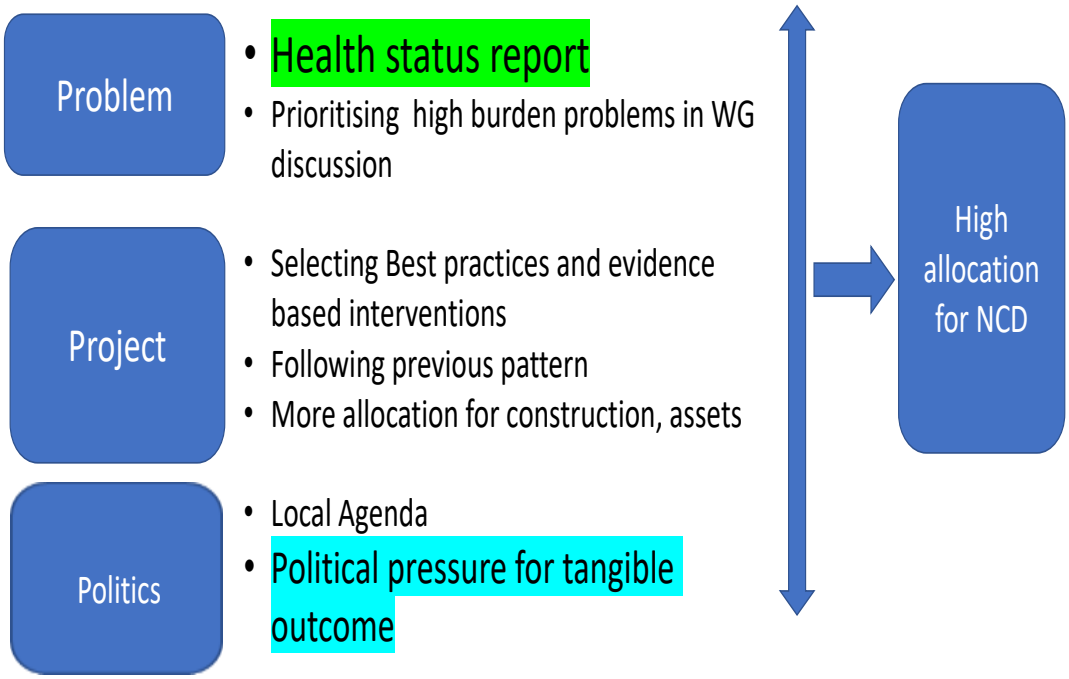


Fig 4.9: Factors influencing resource allocation in local health planning; multiple streams approach

DISCUSSION

CHAPTER 5

DISCUSSION

For studying the effective implementation of projects related to Non-Communicable Diseases (NCD) at the local level, different approaches are followed. The present endeavor studies the problem using budget analysis as an approach to uncover the reasons behind the gaps in prioritization and implementation of NCD related projects in Kerala. This study analyzed the budget allocation for different health projects with specific reference to NCD at all levels of local bodies in the state of Kerala during financial years 2018-19 to 2021-22. The financial data on fund allocation for health has thrown light on the allocation process and the details of the administration of such initiatives. For analysis of prioritization process, the distribution of fund allocation in different health intervention budgets was studied. Additionally, patterns and factors for prioritization process for health projects were also studied focusing on NCD projects.

NCD being the major contributor for the health burden in the state of Kerala, in terms of morbidity, mortality, economic and social costs, it was the focus of the study within local level health projects (Ajisegiri et al., 2021; Puoane et al., 2017; Thakur et al., 2020). The review of literature on the subject too focused on the same. However, there were no studies with budget analysis on the subject as most of them focused either on cost effectiveness of NCD interventions or evaluation of NCD projects and programs.

To fill the gap the present study was conducted to understand the prioritization in decentralized health planning focusing on NCD using budget analysis.

Budget analysis was done as a process of investigating the pattern of budget allocation at the local level. This also contributes in terms of documenting the process of budget allocation for different health programs or interventions. A handful of studies focused on criteria followed by local bodies for health priority setting (Mitchell, 2014; Hipgrave et al., 2014). Using budget analysis for understanding the local planning in India has not been done before.

For the purpose of this budget analysis, we accessed the data set from the report of health sector projects prepared by the Local Self Government (LSG) department. Sulekha* software of LSG department was accessed for retrieving data on decentralized planning and project details. The data set had details on budget allocated for each health project implemented by all the Local self -Governments (LSGs) of Kerala. The budget analysis was performed in the ambit of NCD initiative versus others, health programs, type of NCD projects, type of NCD community interventions, budget based on line item, level of intervention, agenda on which project was based, function of project and objective of project.*

For this afore mentioned analysis, initially the extracted data was analyzed for all levels of local bodies in the selected districts, followed by the detailed analysis of primary data collected from the representing Grama Panchayats. It was appropriate to

analyze the fund allocation and priorities by comparing the mean amount allocated and percentage share of allocation, so as to get a clear idea on the pattern of allocation.

5.1 THE BASIS AND PATTERN OF FUND ALLOCATION AT THE STUDY DISTRICTS

Among the 146 Local Self-Governments (LSGs) studied, there were 90 Grama Panchayats (GPs), 34 Block Panchayats (BPs), three District Panchayats (DPs) and 19 Urban Local Bodies (ULBs), evenly distributed among three study districts selected out of the 14 districts of Kerala. The state was represented by Kozhikode district from north, Kottayam chosen from central region and Thiruvananthapuram from South. The three districts had a total population of around 80,00000, while the population of Kerala was 34000000 (Census,2011). All local bodies were included from the district, block and ULB level and 30 GPs were included from each district. For urban local bodies, municipalities and municipal corporations were included. The representation of rural and urban local bodies from all the regions has given a representative pattern of fund allocation for the study.

In total 8139 health projects from 146 LSGs planned for four financial years from 2018-19 to 2021-22 were analyzed. Less than 10% (795) of the projects were Non-communicable Diseases (NCD projects). The present study included only the project budgets that were prepared under Plan fund*. The projects analyzed in this study were prepared based on the guidelines for 13th five-year plan. The annual plans for LSGs are allocated for three sectors viz production, service, and infrastructure. Health is a part

of service sector (Plan Guideline – KILA, 2018). As per the plan guidelines for 13th five-year plan, rural LSGs had to allocate 30 %, and urban LSGs 10% of their share under General Sector Fund to the production sector. The ceiling for allocation for infrastructure sector is 30% for GP, 25 % for BP and 45 % for District Panchayats. Urban LSGs were free to allocate up to 50% for infrastructure (SPB, 2021). The sector-wise analysis of the data published by LSG department found that the share of fund allocation at the LSG levels for productive sector was 14%, 58% for service sector, and 28% for infrastructure sector, during the four year study period of (2018-19 to 2021-22) (Sulekha, 2022). The present study includes analysis of projects prepared under plan fund for health sector within service sector of LSGs. Other than the above-mentioned ceilings and directions as per the plan guideline, LSGs had the autonomy in prioritizing and decision making regarding the type of interventions they need to implement.[2]

5.2: PATTERN AND PROCESS OF FUND ALLOCATION FOR HEALTH PROJECTS

Out of the total plan fund allocation by LSGs during the four-year period, more than half was allocated for service sector. Out of that only six percent of budget was earmarked for health projects. That works out to be only 3.4% of the total plan fund

[2] Please note: Plan fund is for local development and local governments have autonomy in deciding their priorities, formulating the projects and implementing them subject to plan guidelines issued by the state government.

allocation of LSGs in Kerala. The fund allocated for health sector is distributed for different health interventions, that are decided by the designated working groups for health sector planning. The total budget allocated for 8139 health projects in 146 LSGs for four financial years was Rs 59000.99 lakhs. The budget allocated for 795 NCD projects in 146 LSGs for four years was less than one-tenth of total allocation for health (Rs 5090.66lakhs). For the purpose of studying NCD projects, only those projects that are implementing NCD related activities were included. This is excluding the apportions as per the formula suggested in similar studies. A part of the amount allocated for health projects on general items which are not disease specific like hospital infrastructure and maintenance, can be apportioned for NCD. The usual apportionment formula used in the context of primary and secondary level of health care assigns one-third of such expenditures to NCD (AIHW, 2021; Gupta and Ranjan, 2019). However, in the present study, share of allocation for general health projects which are not disease specific and from which no apportionments have been made to NCD was not included under NCD projects. The methodology adopted by the above-mentioned studies was followed here.

5.3: SHARE OF NON-COMMUNICABLE DISEASES (NCD) IN BUDGET ALLOCATION

All the local bodies in Kerala have autonomy in prioritising and allocating funds for different projects. In other words, the allocation pattern indicates the priorities of the LSGs. The share of budget for NCD projects in Kerala, clearly brings out the basis for prioritization, while NCD being the one of the dominant problems of the state.

The findings suggest that the share of NCD in the budget for health sector projects was less than 10%. This is due to non-availability of guidelines for resource allocation. Economists are of the opinion that decisions may be based on methods that estimate the benefits gained in terms of DALYs gained or out of pocket expenditure averted or equity terms (Banatvala et al., 2023). This made the fund allocation in local bodies in Kerala, not proportionate to the magnitude of the NCD. This pattern is similar to that of studies across the world. Even a longitudinal analysis of funding priority of the World Health Organization reports that non-communicable diseases that account for more than half of global mortality and almost half of global DALYs, received roughly a tenth of all WHO funds. (Nozaki, 2013; Stuckler et al., 2008). Studies appraising global situation finds that countries allocated less than 5% of their healthcare budgets to NCD programs (Henning, 2017; Mendis and Fuster, 2009; WEF, 2022). Among donor funds for countries too, NCDs are under-prioritized, receiving less than 1% of funding from US and UK (Jailobaeva et al., 2021). This disproportionality is clear from the fund allocation for communicable diseases. For instance, WHO report on public spending on health reveals that, 46% of external funds for health and 20% of public spending on health was earmarked for communicable diseases like HIV/ AIDS, malaria and tuberculosis (WHO, 2018). Most of the funding agencies and health systems, specifically fund for conventional health problems such as communicable diseases, and mother and child care (Banatvala et al., 2023).

It is also important to note the variations in fund allocation for health among developed and developing countries. Significant disparities in budget allocation were found among these countries; higher-income nations allocate more for NCD programs compared to lower-middle income countries (Kontis et al., 2015). The 2020 WHO document on global spending on health, reports poor funding for the prevention and control of NCDs. The allocation in low-income countries for NCD was estimated at about 13% of health expenditure, while middle-Income Countries allocated about 30% of total health spending to NCDs (WHO, 2020). The health spending for cardiovascular diseases and cancer in Australia was 8.7% of total spending on specific disease groups (Disease expenditure in Australia 2018-19, 2021). The allocation for NCD in South Africa is less than 1% of national health budget (Puoane et al., 2017). In India, it was estimated that central government spends 20% of its total health spending on NCD and it is significantly low in economically vulnerable states (Gupta and Ranjan, 2019). Many studies have reported low prioritization of NCD in India (mohfw, 2016; NHP 2020). Data on the actual share of budget for health programs are often missing and national health accounts with disease specific data are yet to be published in most countries and contexts including India (AIHW, 2021; Gupta and Ranjan, 2019). From these estimates available, we could infer that the resource allocation in health sector at national and subnational levels is not proportionate to the disease burden. Similarly, it is found among the local bodies as inferred in the present study.

This finding is in confirmation with the other studies which point out that, in spite of the fact that, the share of morbidity and mortality due to NCDs outweigh all other diseases, the funds allocated for NCD projects are disproportionate to the disease burden in local bodies (Ajisegiri et al., 2021; Ohta et al., 2021). In India, Kerala has the highest level of epidemiological transition with over 90% of Kerala's premature mortality attributed to NCD (PHFI, 2018) and NCD risk factors are common in Kerala (Sarma et al., 2019). A state wide study described that, regardless of Kerala performing well in the health indicators such as reproductive and child health and have high indices of development, the risk factor profile for chronic NCDs was poor and comparable with the United States of America (Thankappan et al., 2010). This is a warning for the state of Kerala that if the allocation did not include NCD, it will adversely contribute to the health profile of Kerala, by negatively influencing the overall health status, even with good performance in the maternal and child development indicators.

5.4: TREND OF PROPORTION OF ALLOCATION FOR NCD IN HEALTH SECTOR PROJECTS

The total budget allocation for health sector projects in local bodies of Kerala was increasing steadily from 2018-19 to 2021-22. While, the trend of amount allocated for NCD projects did not increase. The share of allocation for NCD was alternatingly increasing and decreasing every year. There was an increase in the money allocated for health and NCD projects over the years. While the share of allocation for NCD projects among health was not increasing in the similar pattern. LSGs maintained fixed

proportion of allocation for NCD, despite the increase in the burden of NCD. This finding is similar to that of a study on trend of state-wise health care budget allocation in India, which found that the increase seen in the allocation for health is incongruent with the increasing disease burden of NCD (Bagepally et al., 2022).

The present study found an increase in allocation for health projects during the four-year period. The percentage of increase was 10.82% during 2019-20 and 15.73% during 2021-22 compared to the preceding year. The highest percentage increase for health sector projects was during 2020-21, with 38.26%. This was during the COVID-19 pandemic period. The allocation for NCD was following a cyclical pattern (please refer Fig 4.4). However, during the year 2020-21, there was an increase of 82.76% in allocation for NCD. During the COVID-19 pandemic period, Kerala faced difficulties as NCD patients, especially those belonging to low socioeconomic status, found difficulty in accessing healthcare (Revu et al., 2023). Studies from many countries reported that patients with comorbidities, especially NCD experienced higher rate of morbidity and mortality during COVID-19 (Djaharuddin et al., 2021; Emami et al., 2021; Khedr et al., 2020; Sanyaolu et al., 2020), which emphasized the need for targeted interventions (Biswas et al., 2020). More NCD projects were included in the annual plan of LSGs to ensure that all NCD patients receive their medicines without fail. Many LSGs initiated projects on door-to-door services for NCD patients as there was reduced access to healthcare during the pandemic period. This is in contrast to studies from other regions, where they reported difficulties in ensuring continuity of care for patients with NCD (Kiragu et al., 2021; Nath et al., 2022; Sahoo et al., 2021;

Yadav et al., 2021). Nevertheless, there also were many initiatives which successfully deployed mitigation strategies during the pandemic to ensure continuity of care for people with NCDs including triaging patients, telemedicine and teleconsultations, and electronic prescriptions and other novel prescribing practices in some countries (Luciani et al., 2023).

The variations in proportion of allocation for NCD across different levels of LSGs were studied. Among the different LSGs, grama Panchayats allocated the lowest proportion of 6.39%. Grama Panchayats allocate funds for primary level of care, whereas BPs and DPs allocate funds for mostly secondary level and tertiary level care. For prevention of NCDs, more funds need to be allocated at the primary healthcare level (Xiao,2014; Budreviciute et al., 2020; Demaio et al., 2014). The importance of fund allocation for primary level care has been highlighted by WHO with the identification of primary health care as a priority for expenditure tracking (Public Spending on Health, 2018). District Panchayats and Block Panchayats have allocated more than 10% of their health budget for NCD projects, as they implemented certain NCD projects with increased amount of budget, like establishing dialysis units, mammogram facilities and other cancer screening activities. Allocation for NCD in urban local bodies was 8.93%. In urban areas, Urban Primary Health Centers (UPHCs) provide primary health care in the public sector. Increased funding for UPHCs is crucial as several studies have emphasized the need for strengthening UPHCs to meet the healthcare needs of the rapidly growing urban population, especially with regard to addressing the burden of NCD among urban poor (Gangadharan and C, 2019; Kusuma

and Babu, 2019; Patra and Bandyopadhyay, 2020). By increasing the share of allocation for NCDs at level of GPs and ULBs, more NCD interventions at grass root level focusing on primary prevention can be implemented. In addition, the interventions undertaken at this level, mostly benefits the vulnerable and poor sections of the population (Gangadharan and C, 2019; Patra and Bandyopadhyay, 2020; Senanayake et al., 2017)

5.5: ALLOCATION FOR NCD COMMUNITY INTERVENTIONS

Community-based preventive measures are cost effective as well as sustainable for controlling non-communicable diseases (Vartiainen, 2018). In the present context less than 2% of health budget and less than 20% of NCD budget was set aside for community based NCD interventions. This is similar to the pattern seen in low and middle income countries where community interventions are implemented at low levels (Bertram et al., 2018; Khaltaev and Axelrod, 2022). This is in spite of the fact that community interventions constitute a significant part of the list of Best Buy interventions identified by the WHO Secretariat for the prevention and control of NCDs (Bertram et al., 2018). Community level components of NCD interventions include awareness campaigns, house to house screening and awareness campaigns, screening camps, other community NCD camps, specific interventions for improving physical activity and diet.

Facility-based interventions for NCD management and control efforts were prioritized over community based interventions. Having said that, the high burden of people

living with disease conditions, puts pressure on the system to allocate more for curative services. The high morbidity due to NCD is evident from the results of the recent National level NCD Monitoring survey (Anjana et al., 2023). As per this survey the prevalence of diabetes among adult population of Kerala was 23.6% and that of hypertension was 44.3%. Similar pattern of low funding for community interventions was found in South Africa (0.01%)(Puoane et al., 2017). Another reason for lesser community level interventions as reported in other studies include paucity of political commitment and funds (Essue and Kapiriri, 2018; Jailobaeva et al., 2021; Juma et al., 2018; Owusu et al., 2023; Puoane et al., 2017; World Health Organization, 2013). Another reason for the low priority is that community interventions are in general soft in nature by not delivering tangible outputs such as construction of buildings, purchase of equipment, other consumables and so on, which the elected representatives can showcase as their achievement. An exploratory study on priority setting in health sector of Kenya found that less visible community health services that focus on health promotion, disease prevention and referral have been neglected within the prioritization process in favour of more tangible curative health services (McCollum et al., 2018). In agreement with this study findings, reasons stated in the above studies, for lesser allocation in community interventions include intangible nature of outcome of many of these activities, difficulty in implementation, following existing allocation patterns or conventional choices made at national and international levels.

In rural LSGs more than one-fifth of NCD allocation was for community interventions, whereas in urban local bodies it was less than one-tenth. This needs

attention as risk factors for NCD are more common among urban residents, warranting more allocation for LSG initiated community interventions. Studies from India and other low middle income countries report that diabetes, hypertension, dyslipidemia, physical inactivity and overweight are higher in the urban area (Htet et al., 2016; Oommen et al., 2016; Shaikh and Khan, 2021; Van et al., 2012).

Increasing incidence of cancer in Kerala (Mathew et al., 2017) made the local bodies to focus on cancer screening, allocating a major share among NCD community interventions. Investing in early detection of cancer is justifiable as three quarters of cancer expenditures in India are out -of-pocket payments, which is increasingly responsible for catastrophic expenditures that negatively affect not only the patient but also the welfare and education of several generations of their family (Pramesh et al., 2014). Hence, increased allocation for cancer screening services by LSGs, by promoting early detection will lead to better control of the disease burden. In addition, there will be reduction in economic costs associated with cancer care. Another most commonly implemented community intervention for NCD was household level screening and awareness campaigns, followed by community level awareness campaigns. Across the globe, the most common intervention undertaken for prevention of NCDs is awareness and screening campaigns and they are found to be cost-effective (WHO, 2023; Daivadanam et al., 2013; Gabbay and le May, 2004; Juma et al., 2018; Owusu et al., 2023; Shukla et al., 2018; Vartiainen, 2018; World Health Organization, 2013). The community interventions implemented by LSGs were those conventionally recommended by state and central health authorities in accordance with

recommendations from international agencies like WHO. However, increased allocation for cancer screening indicates the initiatives of LSGs to respond to the context specific health challenges.

Activity wise distribution of community interventions shows that a meagre amount was allocated for physical activity and diet related interventions. As per study from South India, physical inactivity was associated with hypertension, body mass index (BMI) ≥25 kg/m2, central obesity and dyslipidemia after adjusting for other factors (Oommen et al., 2016). Although awareness campaigns, disseminate messages on physical activity and diet, evidence suggests need for targeted interventions facilitating adoption of healthy behaviors. This is all the more important as studies confirm that the worldwide increase in the prevalence of chronic lifestyle diseases can be attributed to a more sedentary lifestyle, especially illustrated in the urban study population, and increasing obesity (Van et al., 2012). Many studies have demonstrated effectiveness of community interventions targeting behavioral risk factors like smoking, diet and physical activity (Belal and Al-Hinai, 2009; Nissinen, Berrios and Puska, 2001; NNMS17-18; Kumar and Preetha, 2012; Budreviciuteet al., 2020). Such interventions need to be prioritized in local planning as building a healthy neighborhood and facilitating healthy choices is the primary responsibility of LSGs. Individuals can be held responsible only when structural opportunities for making choices exist (ICRIER,2016; Thaler and Sunstein,2009). This can be achieved by projects on spaces for physical activity, and creating sufficient resources and information for following

healthy diet. Though minimal, the projects on physical activity were for establishing and maintaining gymnasiums in Primary Health centres.

In the present context, we could infer that the share of allocation for community interventions is in general poor. LSGs in Kerala tend to follow conventional patterns and practices seen at national and international levels, and mostly adhere to state and national recommendations. Context specific innovative initiatives were negligible. Core interventions for prevention of NCD viz physical activity and diet modification had been neglected during priority setting at local level. Ease of implementation of conventional projects with less chance of audit objections may be one reason preventing innovations during project planning process.

5.6. FIVE DIMENSIONS OF FUND ALLOCATION FOR HEALTH

The budget allocation was analyzed using a framework with five dimensions. They are type of project, level of intervention, agenda followed, functional aspects and objective of the project

5.6.1. Dimension of type of project

We estimated percentage share of allocation for different type of NCD projects. Based on the findings it is clear that one fourth of the total budget for NCD was allocated for installing dialysis services and another one fourth for financial support to patients on treatment for complications of NCD, mostly as cash transfer. One-tenth of allocation was for cancer screening and care. This pattern seems to be a way in which

LSGs are responding to the high morbidity in Kerala due to complications of NCDs including chronic kidney diseases, cardiovascular disease and cancer. By means of providing financial assistance to patients on treatment for NCD complications, LSGs aim to improve financial protection for individuals and households. Scaling up of resource allocation to achieve Universal health coverage is a challenge at all levels of health planning (Bagepally et al., 2022). The LSGs of Kerala, by allocating major share for such interventions are trying to address the issue of high out of pocket (OOP) expenditure, and averting catastrophic health expenditure. It has been estimated that catastrophic household expenditure from OOP on NCD could plunge 150 million people into poverty worldwide (Jakovljevic et al., 2019). NCD patients like those with cancer and stroke require treatment and care over many years. Rates of catastrophic health expenditure among low-income patients with cardiovascular disease were 92% in Tanzania, 92% in India, and 79% in China. Similar levels (68%) were observed among cancer patients in Iran and Vietnam and stroke patients in China (71%). (Banatvala et al., 2023). When we studied the pattern of allocation at different levels of LSGs, the projects for financial support to patients was given priority at all levels. From these findings we can conclude that providing financial protection to chronic patients had been prioritized by all local bodies. More than the commitment of local bodies towards achievement of universal health coverage, this pattern is an indication of the tremendous burden of NCD complications among Kerala population.

District panchayats and urban local bodies allocate more than one-third of their NCD fund for dialysis services. They are either installing dialysis units at district and taluk

hospitals or are giving assistance to patients on dialysis for chronic kidney disease. Dialysis is a very expensive treatment modality and governments at all levels are trying hard to increase availability of dialysis services (Morad et al., 2015; Tantivess et al., 2013). The demand for dialysis is increasing with estimates of chronic kidney disease prevalence in India ranging from 9% to 17% (Anand et al., 2017, 2015; Ene-Iordache et al., 2016). Chronic kidney disease as a complication of NCD, especially diabetes, is increasing in Kerala (Bradshaw et al., 2019; Jacob et al., 2019; Soman et al., 2018). With the pressure due to demand from the community and visibility of such interventions, LSGs tend to allocate a greater share for dialysis units. But the effectiveness of such interventions in addressing the NCD burden of the community is doubtful. Even in terms of reducing catastrophic expenditure, these measures are not helping as evidenced from a study on patients on maintenance hemodialysis at 15 facilities in Kerala. They concluded that provision of medical subsidy was not associated with lower rates of household financial hardship related to long-term hemodialysis therapy (Bradshaw et al., 2019). Another one-fourth share of allocation among budget for NCDs was for purchase of medicines for NCD patients registered with NCD clinics of health centres. This fund was for requirement of drugs and pharmaceuticals in addition to the existing drug supply of state health department. This again is due to the greater number of NCD patients registered with the NCD clinics of the hospitals and health centers. Many of the above initiatives are demand driven and continuance of them will downplay the importance of community interventions.

5.6.2: Dimension of level of intervention

Here the interventions were assessed based on whether they fall under primary, secondary or tertiary level of prevention. From the findings it emerged that interventions under tertiary level of prevention dominated with more than half of budget allocation for NCD. That accounted for projects related to management of NCD complications, especially, those for dialysis and distributing financial aid for chronic patients. More than one quarter of fund was allocated for curative services, especially the functioning of NCD clinic, and around 12% share was for disease screening services. Only less than one-tenth portion was allocated to projects on primary prevention of NCDs. This reveals the skewing of the priorities towards curative services, with only minimal resource allocated for primary prevention. The lower allocation for NCD projects on primary prevention is a matter of concern. The pattern shows the reaction of local bodies to provide curative services as the solution for high burden of diseases. They were not focusing on proactive interventions with a future development perspective. The present context is similar to the pattern observed in other studies. Studies report that although initiatives of LSGs engaging with the NCD control program for screening and treatment is successful in terms of program outcome, they were not helpful in achieving complete NCD prevention (Ahmad and Talib, 2016; Wickramasinghe et al., 2018; Pati et al., 2020; Thakur, Paika and Singh, 2020; Ohta et al., 2021). Strategies focussing on prevention, applying principles of Primary Health care need to be implemented by local bodies (Narain, 2011; ICRIER,2016; NHP 2020; Kumar and Preetha, 2012; Budreviciuteet al., 2020). Projects on primary prevention can include Schools, work sites and community

interventions (Lv *et al.*, 2014). Study on budgetary allocation in Community-based Health Planning and Services (CHPS) program in Ghana observes that primary prevention interventions like education programs on NCDs are erratic and confined to a few municipalities. NCD services in Ghana was more clinical and less preventative (Owusu et al., 2023). Recent studies from South India, emphasizes urgent need to address behavioral risk factors such as smoking, alcohol consumption, physical inactivity and inadequate intake of fruits and vegetables through primary prevention (Oommen et al., 2016). There were a handful of grey literature and reports which highlights innovative community interventions for primary prevention of NCD, implemented by certain local bodies in Kerala (Thomas and Rajesh, 2013). The paucity of such interventions can be attributed to the fact that the acceptance of promotive and preventive interventions among community members is variable. The health seeking behavior of Keralites focuses on curative services (Jana and Basu, 2017). “Treating our way out” of the NCDs may not be the efficient way, it has to be strongly supplemented with population-based services aimed at health promotion and action on social determinants of health along with individual services (Thakur et al., 2011). Implementing projects for primary prevention being the mandate of Grama Panchayats, only two-third of GPs had at least one projects on primary prevention and less than one-tenth of GPs implemented projects on primary prevention of NCD and about one-fourth of GPs had Community interventions for NCD.

The findings from this study are in agreement with the general pattern of resource allocation seen in other regions with lesser share of allocation for interventions aimed

at primary prevention of NCD. This pattern in turn will contribute to increase in burden of NCD and its complications, further increasing the economic costs of NCD. If planning has to be done with future development perspective, investment in primary prevention is crucial.

5.6.3: Dimension of Agenda

When studying fund allocation, it is always important to find who sets the agenda. In the present context, the agenda is either set by central government or by the state government or local bodies or combination of all the three levels. Interestingly, when it comes to NCD projects, more than three-fourth of fund allocation are set by local bodies. Sometimes central or state governments grant tied funds or funds earmarked for specific interventions. In those cases, local bodies will have to implement projects based on state or national agenda. There are studies reporting influences by funding agencies where misalignment of priorities delayed implementation of NCD priorities based on local agenda (Essue and Kapiriri, 2018). When there is a national action plan, or state government initiatives, or directives to align with global agenda like sustainable development goals, projects prioritized will be based on those agenda. Many countries prioritize NCD interventions based on national and global agenda (Amerzadeh et al., 2020). There were suggested interventions strategized by national program for NCD (NP NCD), as well as the state NCD control program, Amrutham Arogyam. But our LSGs predominantly followed local agenda, reflected in their priority for projects on financial aid, dialysis units etc. From our findings it is clear that LSGs in Kerala prioritized NCD interventions based on local agenda.

5.6.4: Dimension of function

The pattern of allocation based on the function of project viz production or consumption was studied. In addition to the allocation for infrastructure sector, LSGs allocate funds in service sector for infrastructure and maintenance of public buildings and institutions. Production function in health sector includes projects leading to asset creation. Among NCD projects, more than 70% of allocation was for consumption function. NCD projects for purchase of medicines, financial aid, and awareness campaigns were common. Few projects which were categorized as having production function were establishing dialysis units, and mammogram facilities. There are only few studies available categorizing budget allocation in health into production and consumption function. Generally NCD projects have greater allocation for consumption function (Martin et al., 2008; Paulden and Claxton, 2012).

5.6.5. Dimension of Objective

Further analysis was done based on the objective of the intervention, which helped in categorizing them into means to an end intervention vs End itself intervention. Means to end projects in itself will not be directly benefitting the individual, but it will be instrumental in achieving specific outcome, whereas end itself projects have direct benefits, as its value is intrinsic (Michie et al., 2011). More than 80% allocation for NCD projects were serving the purpose of being end itself interventions. When funds were allocated for infrastructure or equipment, the objective of the intervention was being means to end. As consumption budget predominated in NCD allocation, most projects were end itself, directly benefiting the people. Greater share of NCD projects

implemented by LSGs of Kerala were directly benefiting the individual. The range of projects funded were on providing financial assistance, medicines, laboratory and screening services and awareness creation. Only a minor share of budget for NCD was earmarked for asset creation.

5.7: PATTERN OF FUND ALLOCATION FOR HEALTH SECTOR PROJECTS

The pattern of fund allocation was based on the analysis of budget in terms of line items and program budget. In budget analysis done for health sector allocation, there is inherent difficulty in disaggregating budgets by subsector (e.g. hospitals, primary care, pharmaceuticals, medical equipment) (Banatvala et al., 2023) and data on program or disease specific budget is also not available (Gupta and Ranjan, 2019). This study generated evidence regarding share of allocation for subsectors, programs and line items.

5.7.1: Line-item wise budget allocation for health projects

Line-item wise analysis found that more than one-third of allocation in health sector was earmarked for infrastructure or construction activities. Multicomponent projects including camps, campaigns, and awareness classes received below one-fourth of budget. One-fifth was allocated for purchase of medicines. It is a common practice to allocate more for infrastructure creation and medicines (Ajisegiri et al., 2021; Ohta et al., 2021). One reason being the tangible nature of construction activities, and the popular demand for more facilities and medicines. On the contrary, Australia spent

only less than 5% of health budget on fixed assets such as building hospitals or other construction activities (Disease expenditure in Australia, 2021). The line item on personnel is minimal as the salaries of regular staff are paid by the state and it is out of scope of local bodies.

5.7.2: Budget allocation for different health programs

In terms of program, more than half of health budget was allocated for projects on hospital services like construction, purchase of medicines and equipments, salary, and daily expenses. Study on pattern of disease expenditure in Australia estimated that 31.42% of spending was for hospital services (Disease expenditure in Australia, 2021) Even though, COVID-19 projects were there only for last two years of period under study, 12% of total allocation for this period was for projects on pandemic control. Communicable diseases other than COVID-19 received less than 3% share of allocation. Palliative projects, which are mandatory for all local bodies as per plan guidelines, received 11.13% of allocation. Mental health and tribal health received only less than 1% of share of allocation. Ideally resource allocation decisions should be based on burden of disease (Bagepally et al., 2022; Banatvala et al., 2023; Gupta and Ranjan, 2019; Jailobaeva et al., 2021; Mitton and Donaldson, 2004). Many at times the LSG institutions set priorities without considering the disease burden (Baltussen and Niessen, 2006). For example, Mental health disorders are on the rise around the world. Failure to respond the crisis of increase in mental health disorders could immensely affect individuals, societies and economies worldwide (Noorain et al., 2023). Mental illness incurs higher costs than cardiovascular disease, chronic

respiratory disease, cancer, diabetes or any other NCD (McDaid et al., 2019). Nevertheless, the very few studies conducted in this area, reports that the budget provided was insufficient to address the mental and behavioral disorders disease burden (Go et al., 2022). Studies on detailed program wise budget allocation is scarce. While domestic health expenditure is reported by national health accounts through the System of Health Accounts, there is little detail on public sector expenditure by disease (Banatvala et al., 2023). Another study on local planning from Kerala observes that the general focus of planning was on specific infrastructure and mandatory allocations, and the process has become routinized. Nevertheless, there were innovative initiatives in some Panchayats, with professional support and guidance. In such cases results were encouraging (Nair and Naidu, 2016). Targeted interventions for local specific diseases are negligible. The present findings clearly shows that LSGs in Kerala were following a conventional routinized approach, while allocating between different programs. Hospital services and mandatory allocations gets the lion's share of budget and there was less scope for other programs.

5.7.3: Budget allocation for different levels of intervention

The major proportion of budget for health sector was allocated for curative services (78.25%), under secondary and tertiary level of prevention. An additional, 14.46% was allocated for projects specifically for tertiary prevention, which includes management of complications, palliation and rehabilitation. For specific projects such as disease screening, 1.12% of total amount was allocated. For projects on primary prevention of diseases, only 6.18% of the budget amount was allocated. Decision making regarding

allocation between different programs, and different levels of intervention within a program is difficult. High income countries such as Australia spends 28% of their health budget for primary health care, 63% for curative services and 9% for referral medical services (AIHW, 2021) Contrary to this trend, in low and middle income countries, relatively low coverage of highly cost-effective health interventions continues to co-exist with public spending on high-cost, less effective or even ineffective care. In Egypt, one in five children are stunted, but 20 percent of public expenditure goes to send a very few patients overseas for medical treatment. Moving money from least cost-effective interventions to most cost-effective interventions can potentially produce about 15,000 times the benefit for people's health (Glassman, 2012).

5.8: BUDGET ALLOCATION AT THE GRAMA PANCHAYAT LEVEL

In continuation with the different levels of fund allocation for four financial years, analysis of budget and fund allocation was done at the grama panchayat level for one financial year (2021-2022). Detailed information on setting of priorities by working groups for health sector planning was collected from 90 grama panchayats. The respondents for the interviews done were members of health sector working group for local planning. One to two members were contacted to get a general idea regarding the priority setting process in their working groups. Doctors, field health workers and elected representatives were chosen as respondents as they were involved in the whole planning process. A total of 1269 health projects and 83 NCD projects were included in the analysis.

Among the three selected districts, Thiruvananthapuram representing the southern region had the highest number of health projects as well as the highest budget allocation. The mean number of health projects in a GP during 2021-22 was 14.10. The mean (SD) amount allocated by a GP for health projects in a year was 61.34 (31.76). It was highest for southern region, 75.23 (26.34) lakhs rupees and lowest for northern region, 52.74 (19.53) lakhs rupees. The minimum allocation for health for a GP was Rs 18.70 lakhs and maximum was Rs 245.80 lakhs.

The year under study, 2021-22 had the lowest proportion of fund allocation for NCD, 4.04%. This could be attributed to the adjustments made for the increased spending during the pandemic year. There were regional variations in proportion of health budget allocated for NCD, with Kozhikode allocating the highest share, 7.33% and Kottayam with the lowest share of allocation for NCD, 1.87%. Majority of NCD projects in Kozhikode district was for projects on financial support by cash transfer to patients with chronic diseases. Kozhikode district was consistently allocating greater share for NCD, with more than 10% of allocation in the other four years under study.

5.9: ASSOCIATION BETWEEN NCD PROJECTS AND PROJECT CHARACTERISTICS

Allocation for NCD community intervention and NCD projects on primary prevention had a positive relationship with allocation for NCD. This clearly points out that higher allocation for NCD, leads to more allocation for community interventions and projects on primary prevention. In the present context, allocation for health projects increased, allocation for projects on primary prevention and production activities. It was also found that, there was an inverse relationship between allocation for health projects for production activities and NCD community interventions as well as NCD primary prevention projects. Decision making regarding allocation can be informed by these findings. Many studies have attempted to decode the correlation between allocation for different health initiatives. Most of them report negative correlation between allocation for construction activities and projects on health promotion and prevention (Cardona et al., 2021; Graham and Mackie, 2016; Morton et al., 2016). There was a significant increase in allocation for health projects in 2021-22 compared to 2018-19, however, there was no significant increase in allocation for NCD during that period. Allocation for health and NCD was not correlated as per the study findings. There was significant association between region and allocation for NCD project. Northern Kerala allocated more for NCD projects compared to other regions. The major share of allocation in northern region was for financial support for chronic patients.

Another factor associated with allocation for NCD initiatives was the agenda setting. Most of the NCD projects were based on local agenda. A set of context-dependent

factors influence the inclusion of specific health initiatives in government policy agendas (Baker et al., 2018). Health programs with central or state agenda are important, especially when it comes to mass campaigns, disease eradication programs, environmental interventions etc (McGowan et al., 2019; Pacheco and Boushey, 2014). But for health interventions closely related with behaviors and habits of people, decentralized agenda will work better (Echebarria et al., 2018; Liu et al., 2010). In the case of NCD control interventions, it is directly linked with life style of people and evidently, local agenda matters more for planning such interventions. On the contrary, some papers argue that NCD interventions need to be included in central agenda and advocate against placing the burden on domestic budgets (Collins et al., 2018).

5.10: FACTORS ASSOCIATED WITH HIGH ALLOCATION FOR NCD PROJECTS

Detailed analysis of data from 90 GPs, helped in understanding factors associated with priority setting for NCD projects. Considering health status report for prioritization, considering best practices/evidence, following local agenda and prioritizing NCD during working group discussions were significantly associated with high allocation for NCD projects. Whereas following previous year pattern of budget allocation, and experiencing political pressure for tangible outcome were significantly associated with low allocation for NCD projects. Giving priority for popular projects or active discussions in working group were not associated with allocation for NCD projects. There was an inverse relationship between allocation for productive activities and NCD.

Only less than one-tenth of GPs considered best practices or evidence for local planning. Other studies also report the lack of evidence-based planning at local level and its disadvantages (Rakhra et al., 2022; Sécula et al., 2020; Wolfenden et al., 2019). Evidence is often not used, creating a process open to influence by senior executives and board members. Clear processes for priority setting and resource allocation, using local data and evidence, reduce the opportunity for overruling (Mitton and Donaldson, 2003). For successful evidence-based policymaking, it's crucial to blend scientific evidence with governance principles and use persuasion to convey complex evidence in simple stories (Cairney and Oliver, 2017).

More than two-third of GPs were following pattern of allocation of previous year, similar to findings from other studies (Liu et al., 2010; Smith, 2007). One-third of GPs took NCD as a priority topic for discussion in working groups. Half of the local bodies followed local agenda for priority setting. Examining the process of priority setting in other places also reveals lack of rational and scientific methods. Criteria used in prioritization are not often explicit. Even if explicit processes were there, these criteria were not used systematically or consistently in the contemplation of noncommunicable diseases. There were insufficient resources for noncommunicable diseases, despite being a priority area. There were weaknesses in the priority setting institutions, and insufficient mechanisms to ensure accountability for decision-making (Essue and Kapiriri, 2018). In a qualitative case study done by Singer et al on priority setting for new technologies in medicine in Canada, thy found that the factors that influenced decision making were benefit, evidence, harm, cost, cost effectiveness, and

pattern of death. Out of all these factors benefit was given more role (Singer et al., 2000). Studies from India discusses about the challenge to generate evidence to inform priority setting here. As, political interests often take precedence over public health needs or disease burden (Bagepally et al., 2022). The present study findings confirm to this and has further helped in concluding that those local bodies which experienced more political pressure for prioritizing projects with tangible outcome could allocate only less for NCD.

Public motivation and attitude change is a requirement when it comes to prioritization between preventive and curative services for NCD control. Motivation is more for immediate benefits of medical care (Reinke, 1988). Here comes the role of health professionals in making people and politicians understand the broader problem of NCD in a longer time scale (Liu et al., 2010), to think beyond immediate needs for curative services to the greater, though delayed, benefits of preventive and promotive interventions.

More than half of GPs reported having political pressure for tangible outcomes upon their working groups The health plans made should be fitting the policies of the political group responsible for its implementation. Mobilizing political opinion for priorities is identified as a skill health professionals should acquire (Liwanag and Wyss, 2019). Undue political pressure can negatively influence priority setting. Health professionals can be trained to influence politicians and promote the idea among policymakers that planning is their best way of being leaders rather than followers of

public opinion (Daniels and Sabin, 2008; Liu et al., 2010). Explicitly stating the long term and short-term benefits of priorities selected and plans made will help in conditioning the political structure. Plans confirming to existing conditions easily gain acceptance. For innovative plans, convincing politicians and public is a difficult task (Liu et al., 2010). Nevertheless, plans should have seeds of progressive change (Reinke, 1988).

Only one-third of GPs considered health status report for prioritization. Status reports are sometimes the only source of data for planning. Improving the quality of status reports by following scientific methods, using tools of statistics and health economics should be taught. Quality of demographic, epidemiologic, administrative and economic data collected need to be ensured. Specific data on utilization of health facilities, coverage of services, particularly that of marginalized communities should be made available (Varghese et al., 2007).

Few studies reported some more relevant factors in decision making. Expanding decision-making opportunities for local decision-makers must be coupled with enhancements in capacity and accountability (Liwanag and Wyss, 2019). Lack of skills and exposure for grass root leaders was curbing the local governments mandate to respond to local health needs. For this, training of medical professionals and elected representatives on health management in decentralized setting was recommended by Nair et al (Nair and Naidu, 2016).

5.11: APPROPRIATE RESOURCE ALLOCATION IN LOCAL HEALTH PLANNING

The findings from this study gives hard evidence in financial term for our assumptions that resource allocation in health planning is misaligned with the actual burden of disease and health need. This kind of a study on pattern of budget allocation done in local health planning is new. The findings give insights on several important points to be considered by state and local governments in their planning process. Despite the vast body of evidence on the effectiveness of preventive interventions, allocation of funds are meagre in this direction. The overemphasis on curative services as reported from several studies across the globe has been substantiated in this budget analysis. The severe paucity of funds for community interventions, especially those focusing on improving physical activity and diet modification points towards the need for revisiting the priority setting process in local planning. It is commendable that local governments respond to the need for more curative services, because of the high burden of complications due to NCD. However the need for a balance between funds allocated for immediate needs as well as interventions aimed at development for future is evident from the findings of this study. As this study has representative data from the whole of state of Kerala, the findings can inform state level policy making in improving local planning process. This evidence will be also helpful for other states of India which are at different stages of strengthening their local level planning process.

The model developed in this study based on exploring the factors in local planning process provides solutions for optimizing allocation based on actual disease burden

and health needs. In the model we had as inputs two approaches in planning. One was following scientific and systematic methods by the working group for local health planning like considering status report, local agenda, choosing interventions based on best practices or evidence, and discussing high burden issues in the working group. This approach was found to be a positive influence on the outcome of optimal allocation. Whereas, the approach of making decisions influenced by political pressure for tangible outcome, or following historical patterns were negative influences on optimizing resource allocation.

5.12. STRENGTHS AND LIMITATIONS OF THE STUDY

This study has undertaken budget analysis of health sector projects of local bodies of Kerala. For understanding the resource allocation process, only few studies have employed the approach of budget analysis. Three districts, geographically representing the whole of Kerala state was studied. Generalizability was further improved by including both urban and rural local bodies. The secondary data used for analysis included financial data, which is comparatively complete and accurate, collected for plan monitoring by the LSG department. Primary data collection from selected local bodies helped in depth understanding of resource allocation process. The study included data from four years, which has given a better representation of the trends in allocation.

In this study budget analysis is done in five dimensions including the conventional dimension of programs/health problems and line item. In addition, this study generates

evidence on pattern of budget allocated on newer dimensions of level of prevention, agenda, function and objective of fund allocated. The study focuses on the actual planning process in local bodies of Kerala and the specific factors within these processes which determines the outcome of priority setting, which has not been explored before. The outcome of planning in terms of the budget allocated for different health interventions is evaluated and documented.

The study had some limitations with use of secondary data in understanding the pattern of budget allocation in block and district panchayats and urban local bodies. The data used was collected for administrative purpose, and not meant for academic research. The data lacks the granularity and contextual detail needed to fully understand the pattern of fund distribution and allocation decisions. The limitation of range of variables available in the secondary data prevented in depth analysis of certain key underlying social and political factors. Hence analysis for identifying the factors influencing allocation decisions was limited to Grama Panchayats alone, where primary data collection was done. There can be inconsistencies in categorizing, classifying and reporting details of projects, when done from different LSGs. These issues have been partially taken care of by accessing the original project documents uploaded in the online project planning portal of LSG ('Sulekha'). The project documents accessed were those submitted in the online portal for the purpose of vetting and approval of plans. Hence, chances for errors commonly found in administrative documents was minimal. The primary data collection done at Grama Panchayats gave an opportunity to validate the secondary data. The usual limitation of accuracy and completeness in secondary data was not applicable to this study as the

variables studied were budget allocated in actual amount in rupees for each project under different LSGs. Allocation for line items in multicomponent projects was difficult to determine.

For describing the factors influencing decision making in priority setting this study focused on the actual processes happening during local planning alone. Important health system factors like quality, availability of staff and accessibility were additionally included. Other possible factors including many other health system factors and sociopolitical background of the local body were not included in the analysis. Based on the scope of the study emphasis was given to planning process.

SUMMARY AND CONCLUSIONS

CHAPTER 6

SUMMARY AND CONCLUSIONS

Resource allocation in general and finance in particular is always challenging for public decision makers. When it comes to health, it is further complicated. In India, health is a state subject, and the central allocation of funds in vertical programs is slowly increasing. The percentage allocation for health is less than 3% of GDP, and for all health-related sectors put together is less than 5%. This makes allocation between different health priorities all the more difficult and it becomes more complex when the federal, state, and the local governments have different health priorities. The present endeavor attempted to understand the priority-setting processes in fund allocation for health at the local level through various dimensions of budget analysis. The approach of budget analysis adopted in this study generated hard evidence in financial terms, with the primary outcome being share of allocation for different health interventions. As the local bodies have autonomy in fixing their priorities and allocating funds for projects, the allocation pattern among health projects indicates the priorities of the LSGs. By estimating the proportion of budget allocated for NCD projects in LSGs of Kerala, we could infer regarding the priority given in local planning for a high-burden problem like NCD. This in turn was taken as a proxy indicator to assess the priority setting method followed by LSGs in Kerala. The fund allocation in health is better understood by studying the budget with five dimensions namely, type of project, level of intervention, agenda followed, functionality and objective.

For this analysis, we focused on NCDs as the nature of this group of diseases needs special attention. For NCD, prevention would contribute more than treatment. The compulsion due to the high disease burden of NCD in the state of Kerala, become an excuse for local bodies to allocate more on modalities that address the treatment and management of NCD. Local bodies tend to follow the pattern of state government initiatives.

In Kerala, local governments exercise their autonomy while deciding the priorities. This is a double-edged sword. While an entity is autonomous in deciding the allocation of funds, it would take the easy path to spent the budget on heads such as equipment purchase, cash transfer, purchase of medicines and other secondary level initiatives, that compromised the importance of primary level interventions.

As the burden of NCD in Kerala is huge, with the highest epidemiologic transition among Indian states, local governments of Kerala need to focus more on NCD and take into account the burden of diseases as a criterion for resource allocation. The disproportionate allocation of funds to NCD by the local bodies was contributed by the lack of proper guidelines and poor political will, which led to the mismatch between the magnitude of NCD problem and fund allocation. This mismatch will cause more damage to the health status of Kerala which is on top of the development indicators. Share of allocation of less than 10% typically follows the pattern of low- and middle-income countries. It is high time to prioritize NCD along with maternal and child

health and other health initiatives in the state of Kerala. Adding to the problem, the pandemic during 2020-21 disturbed the slow progress of resource allocation to NCD initiatives. The cyclical pattern of fund allocation for NCD also points to the maintenance of constant level of fund allocation for NCD. This shows that the local bodies inherently prioritize NCDs at a low level. The rural-urban disparity in terms of NCD prevalence is disproportionately addressed while allocating funds. The emphasis on tangible output generation and a sense of achievement by the political leadership makes it difficult to invest in soft community- based interventions. A number of people live with medical conditions due to complications of NCD, such as chronic kidney diseases, which gives the opportunity to invest on in the purchase of equipment and installation of assets such as dialysis units.

During 1951, the first five-year plan in India prioritized infrastructure creation. Even after 75 years, the mindset did not change and the decision-makers at the local level allocated more than half of the budget for construction-related activities. Mental health is emerging as a priority problem in public health. The findings show very low priority given to mental health at the local level. There is a regional-level difference in the allocation of funds to NCD among the study districts. When the reasons for not prioritizing for NCD were looked into, not referring to health status, not following local agenda, yielding to political pressure, and not following best practices were the main factors.

Predominantly, priority was given to routine conventional interventions such as infrastructure and construction activities, purchase of medicines, and mandatory projects. However, LSGs of Kerala responded to local-specific issues by planning targeted interventions for pandemic management, cancer control, and provision of financial protection for patients with chronic diseases. The huge burden of NCD and its complications led to increased allocation for curative services. The greatest share of the budget was allocated for projects supporting patients who were on treatment for NCD complications. Community interventions and projects on primary prevention received less funding. Most local bodies did not consider health status reports or evidence while prioritizing. The majority of local bodies followed the pattern of allocation of previous years and reported that there was political pressure on working groups to prioritize projects with tangible or visible outcomes. Scientific approaches such as considering disease burden, and evidence will improve the priority-setting process in local planning.

RECOMMENDATIONS

The fund allocation for NCD which is a high burden disease was only 10%, and the pattern of allocation remains the same across years. For decisions on resource allocation in local planning, instead of following previous year pattern of allocation, and focusing on conventional preferences, fund allocation should align with the changing disease pattern in the community. Projects on primary prevention interventions were allocated only less than one-tenth of budget. More than half of the budget was allocated for projects on providing treatment aid and management of

patients with complications of NCD. During training programs for elected representatives and other members of the working group for local planning, emphasis should be given in creating awareness and building attitude regarding the importance of prevention. The bias for curative services and for interventions with visible outcome need to be corrected. The plan guidelines should address the need for allocation formulas, so that projects on primary prevention and community interventions will get better resource allocation. A prescribed share of allocation should go for projects with future perspective. More than one-third of budget for health sector projects was allocated for construction activities. Allocation guidelines should prescribe limits in allocation for construction activities from funds under service sector, especially health. Funds from state and central government should be utilized for infrastructure so that local bodies can allocate more for community interventions and disease prevention initiatives.

LSGs which follow systematic methods like considering health status report, best practices and evidence tend to allocate more for NCD. Whereas undue political influence for prioritising projects with tangible outcome, without following the methods and principles of planning, negatively influences allocation based on actual disease burden and need. Measures should be taken for training and capacity building of local level planners in adopting systematic and established methods in improving outcome of planning process.

REFERENCES

REFERENCES

02 Local Planning GP - INNER.pdf (n.d.). Available at: http://dspace.kila.ac.in/bitstream/123456789/549/1/02%20Local%20Planning%20GP%20-%20INNER.pdf (accessed 1 December 2023).

A community-based approach to non-communicable chronic disease management within a context of advancing universal health coverage in China: progress and challenges | BMC Public Health | Full Text (n.d.). Available at: https://bmcpublichealth.biomedcentral.com/articles/10.1186/1471-2458-14-S2-S2 (accessed 12 June 2024).

A Guide to using Budget Analysis - CBGA India (n.d.). Available at: https://www.cbgaindia.org/primers-manual/guide-using-budget-analysis/ (accessed 26 December 2023).

Abbo U (2024) Public Policy and Governance Issues in Multi-Ethnic Society: The Predicaments of Policy Agenda Setting in Nigeria. *AKSU Journal of Administration and Corporate Governance* 4.

Action plan for the prevention and control of noncommunicable diseases in South-East Asia, 2013–2020: extended to 2030 (n.d.). Available at: https://www.who.int/publications-detail-redirect/sea-ncd-89 (accessed 27 May 2024).

Aftab W, Siddiqui FJ, Tasic H, et al. (2020) Implementation of health and health-related sustainable development goals: progress, challenges and opportunities – a systematic literature review. *BMJ Global Health* 5(8). BMJ Specialist Journals: e002273.

Agenda-setting under pressure: Does domestic politics influence the European Commission? - KOOP - 2022 - European Journal of Political Research - Wiley Online Library (n.d.). Available at: https://ejpr.onlinelibrary.wiley.com/doi/full/10.1111/1475-6765.12438 (accessed 13 June 2024).

Aiyar Y and Behar A (2005) Budget Work in India: Civil Society Experiments in Democratic Engagement. *Economic and Political Weekly* 40(2). Economic and Political Weekly: 108–112.

Ajisegiri WS, Abimbola S, Tesema AG, et al. (2021a) Aligning policymaking in decentralized health systems: Evaluation of strategies to prevent and control non-communicable diseases in Nigeria. *PLOS global public health* 1(11): e0000050.

Ajisegiri WS, Abimbola S, Tesema AG, et al. (2021b) Aligning policymaking in decentralized health systems: Evaluation of strategies to prevent and control non-communicable diseases in Nigeria. *PLOS Global Public Health* 1(11). Public Library of Science: e0000050.

Amerzadeh M, Salavati S, Takian A, et al. (2020) Proactive agenda setting in creation and approval of national action plan for prevention and control of non-communicable diseases in Iran: The use of multiple streams model. *Journal of Diabetes & Metabolic Disorders*. Epub ahead of print 29 July 2020. DOI: 10.1007/s40200-020-00591-4.

An Exploratory Study of Priority Based Budgeting: Identification of Public Values and Public Priorities through Citizen Engagement in Government Budgeting Decisions - ProQuest (n.d.). Available at: https://www.proquest.com/openview/211a642f0037c450252311172bef963d/1?pq-origsite=gscholar&cbl=18750 (accessed 8 June 2024).

Anjana RM, Unnikrishnan R, Deepa M, et al. (2023) Metabolic non-communicable disease health report of India: the ICMR-INDIAB national cross-sectional study (ICMR-INDIAB-17). *The Lancet Diabetes & Endocrinology* 11(7). Elsevier: 474–489.

Annual Report 2006-07 of Planning Commission| National Portal of India (n.d.). Available at: https://www.india.gov.in/annual-report-2006-07-0 (accessed 20 May 2024).

Australian Institute of Health and Welfare (2021) Disease expenditure in Australia 2018-19, Summary. Available at: https://www.aihw.gov.au/reports/health-welfare-expenditure/disease-expenditure-australia/contents/summary (accessed 8 June 2024).

Bagepally BS, Kumar SS and Sasidharan A (2022) Is State-Wise Healthcare Budget Allocation Consistent With the Disease Burden in India? A Quinquennial Account (2015–2019). *Frontiers in Public Health* 10.

Baker P, Friel S, Kay A, et al. (2018) What Enables and Constrains the Inclusion of the Social Determinants of Health Inequities in Government Policy Agendas? A Narrative Review. *International Journal of Health Policy and Management* 7(2): 101–111.

Baltussen R and Niessen L (2006) Priority setting of health interventions: the need for multi-criteria decision analysis. *Cost Effectiveness and Resource Allocation* 4(1): 14.

Banatvala N, Rodwin VG, Zerayacob T, et al. (2023) Financing and allocating resources for NCD prevention and control. In: *Noncommunicable Diseases*. Routledge.

Bauer UE (2019) Community Health and Economic Prosperity: An Initiative of the Office of the Surgeon General. *Public Health Reports* 134(5): 472–476.

Baum NM, DesRoches C, Campbell EG, et al. (2011) Resource allocation in public health practice: a national survey of local public health officials. *Journal of public health management and practice: JPHMP* 17(3): 265–274.

Bertram MY, Sweeny K, Lauer JA, et al. (2018) Investing in non-communicable diseases: an estimation of the return on investment for prevention and treatment services. *The Lancet* 391(10134). Elsevier: 2071–2078.

Biswas M, Rahaman S, Biswas TK, et al. (2020) Association of Sex, Age, and Comorbidities with Mortality in COVID-19 Patients: A Systematic Review and Meta-Analysis. *Intervirology* 64(1): 36–47.

Bossert TJ and Beauvais JC (2002) Decentralization of health systems in Ghana, Zambia, Uganda and the Philippines: a comparative analysis of decision space. *Health Policy and Planning* 17(1): 14–31.

Brown WA and Hinrichs AF (1931) The Planned Economy of Soviet Russia. *Political Science Quarterly* 46(3). [Academy of Political Science, Wiley]: 362–402.

Budreviciute A, Damiati S, Sabir DK, et al. (2020) Management and Prevention Strategies for Non-communicable Diseases (NCDs) and Their Risk Factors. *Frontiers in Public Health* 8: 788.

Byskov J, Marchal B, Maluka S, et al. (2014) The accountability for reasonableness approach to guide priority setting in health systems within limited resources – findings from action research at district level in Kenya, Tanzania, and Zambia. *Health Research Policy and Systems* 12(1): 49.

Cairney P and Oliver K (2017) Evidence-based policymaking is not like evidence-based medicine, so how far should you go to bridge the divide between evidence and policy? *Health Research Policy and Systems* 15(1): 35.

Cardona C, Anand NS, Alfonso YN, et al. (2021) County health outcomes linkage to county spending on social services, building infrastructure, and law and order. *SSM - Population Health* 16: 100930.

CASALUD: an innovative health-care system to control and prevent non-communicable diseases in Mexico - Roberto Tapia-Conyer, Héctor Gallardo-

Rincón, Rodrigo Saucedo-Martinez, 2015 (n.d.). Available at: https://journals.sagepub.com/doi/abs/10.1177/1757913913511423 (accessed 2 June 2024).

Center For Global Development (n.d.) Priority-Setting in Health: Building Institutions for Smarter Public Spending. Available at: https://www.cgdev.org/publication/priority-setting-health-building-institutions-smarter-public-spending (accessed 12 March 2024).

Chakravarty S (1998) Development Planning: The Indian Experience. *OUP Catalogue*. Oxford University Press. Epub ahead of print 1998.

Chang H-J (2003) *Rethinking Development Economics*. Anthem Press.

Collins T, Mikkelsen B, Adams J, et al. (2018) Addressing NCDs: A unifying agenda for sustainable development. *Global Public Health* 13(9). Taylor & Francis: 1152–1157.

Dandona L, Dandona R, Kumar GA, et al. (2017) Nations within a nation: variations in epidemiological transition across the states of India, 1990–2016 in the Global Burden of Disease Study. *The Lancet* 390(10111): 2437–2460.

Daniels N (2000) Accountability for reasonableness. *BMJ : British Medical Journal* 321(7272): 1300–1301.

Daniels N and Sabin JE (2008) Accountability for reasonableness: an update. *BMJ* 337. British Medical Journal Publishing Group: a1850.

De Wals P, Espinoza-Moya M-E and Béland D (2019) Kingdon's Multiple Streams Framework and the Analysis of Decision-Making Processes Regarding Publicly-Funded Immunization Programs. *Expert Review of Vaccines* 18(6): 575–585.

Demaio AR, Nielsen KK, Tersbøl BP, et al. (2014) Primary Health Care: a strategic framework for the prevention and control of chronic non-communicable disease. *Global Health Action* 7: 10.3402/gha.v7.24504.

Dixon S, Booth A and Perrett K (1997) The application of evidence-based priority setting in a District Health Authority. *Journal of Public Health* 19(3): 307–312.

Djaharuddin I, Munawwarah S, Nurulita A, et al. (2021) Comorbidities and mortality in COVID-19 patients. *Gaceta Sanitaria* 35. The 3rd International Nursing and Health Sciences Students and Health Care Professionals Conference (INHSP): S530–S532.

Drummond MF, Sculpher MJ, Claxton K, et al. (2015a) *Methods for the Economic Evaluation of Health Care Programmes*. Oxford University Press.

Drummond MF, Sculpher MJ, Claxton K, et al. (2015b) *Methods for the Economic Evaluation of Health Care Programmes*. Oxford University Press.

Duckett SJ (2012) *Operations Research for Health Planning and Administration*. Springer Science & Business Media.

Echebarria C, Barrutia JM, Eletxigerra A, et al. (2018) Local sustainability processes worldwide: a systematic review of the literature and research agenda. *Journal of Environmental Planning and Management* 61(8). Routledge: 1289–1317.

Economic Review 2021 | State Planning Board, Thiruvananthapuram, Kerala, India (n.d.). Available at: https://spb.kerala.gov.in/economic-review/ER2021/ (accessed 8 June 2024).

Elamon DJ, Rajan DJB, George DA, et al. (2021) □ -□□□□□□ □ □ □ □ □ □ □ □ □ □ (Local □ Planning). Kerala Institute of Local Administration. Epub ahead of print 7 January 2021.

Elamon J, Franke RW and Ekbal B (2004) Decentralization of health services: the Kerala People’s Campaign. *International Journal of Health Services: Planning, Administration, Evaluation* 34(4): 681–708.

Emami A, Akbari A, Basirat A, et al. (2021) The role of comorbidities on mortality of COVID-19 in patients with diabetes. *Obesity Medicine* 25: 100352.

Essentials of Management (n.d.). Available at: https://www.mheducation.co.in/essentials-of-management-9789353168148-india (accessed 25 January 2024).

Essue BM and Kapiriri L (2018) The unfunded priorities: an evaluation of priority setting for noncommunicable disease control in Uganda. *Globalization and Health* 14(1): 22.

Friedrich MJ (2018) Declaration of Astana Emphasizes Primary Care as Key to World Health. *JAMA* 320(23): 2412.

Gabbay J and le May A (2004) Evidence based guidelines or collectively constructed “mindlines?” Ethnographic study of knowledge management in primary care. *BMJ : British Medical Journal* 329(7473): 1013.

Gangadharan K and C S (2019) Does Public Health Care System Need more focus on Urban Health? Evidence from Kerala. *Think India Journal* 22(35). 35: 471–489.

García-Alonso CR, Almeda N, Salinas-Pérez JA, et al. (2019) Relative Technical Efficiency Assessment of Mental Health Services: A Systematic Review. *Administration and Policy in Mental Health* 46(4): 429–444.

Go D-S, Kim Y-E, Paik J-W, et al. (2022) A comparison of disease burden and the government budget for mental health in Korea. *Journal of Mental Health (Abingdon, England)* 31(4): 471–478.

Gorsky M (2008) The British National Health Service 1948–2008: A Review of the Historiography. *Social History of Medicine* 21(3): 437–460.

Graham JR and Mackie C (2016) Criteria-Based Resource Allocation: A Tool to Improve Public Health Impact. *Journal of Public Health Management and Practice* 22(4): E14.

Green A and Green A (2007) *An Introduction to Health Planning for Developing Health Systems*. Third Edition, Third Edition. Oxford, New York: Oxford University Press.

Gregory PR (2014) Before Command : An Economic History of Russia from Emancipation to the First Five-Year. Princeton University Press: 1–198.

Gupta I and Ranjan A (2019) Public expenditure on Non-Communicable Diseases & Injuries in India: A budget-based analysis. *PLOS ONE* 14(9). Public Library of Science: e0222086.

Gupta NBD (1993) *Nehru and Planning in India: Proceedings of the National Seminar on Pandit Jawaharlal Nehru, Planning Commission, and Planned Development in India, Ghaziabad, 1989*. Concept Publishing Company.

Halpin DR, Fraussen B and Nownes AJ (2018) The balancing act of establishing a policy agenda: Conceptualizing and measuring drivers of issue prioritization within interest groups. *Governance* 31(2): 215–237.

Haque M, Islam T, Rahman NAA, et al. (2020) Strengthening Primary Health-Care Services to Help Prevent and Control Long-Term (Chronic) Non-Communicable Diseases in Low- and Middle-Income Countries. *Risk Management and Healthcare Policy* 13(null). Dove Medical Press: 409–426.

Hari KS (2022) Role of Democratic Decentralisation and Empowerment of Local Bodies: A Case of Kerala. *Review of Market Integration* 14(1). SAGE Publications India: 53–63.

Health financing and public financial management in decentralized settings (n.d.). Available at: https://www.who.int/news/item/12-07-2022-health-financing-pfm-decentralization (accessed 12 June 2024).

Heller O, Somerville C, Suggs LS, et al. (2019) The process of prioritization of non-communicable diseases in the global health policy arena. *Health Policy and Planning* 34(5): 370–383.

Henning K (n.d.) Addressing The Gap In Noncommunicable Disease Data With Technology And Innovation. *Health Affairs Forefront*. DOI: 10.1377/forefront.20170921.062094.

Hipgrave DB, Alderman KB, Anderson I, et al. (2014) Health sector priority setting at meso-level in lower and middle income countries: lessons learned, available options and suggested steps. *Social Science & Medicine (1982)* 102: 190–200.

Horton R (1999) NICE: a step forward in the quality of NHS care. *The Lancet* 353(9158). Elsevier: 1028–1029.

Indian Council of Medical Research, Public Health Foundation of India, University of Washington, et al. (2017) *India: Health of the Nation's States : The India State-Level Disease Burden Initiative : Disease Burden Trends in the States of India, 1990 to 2016*.

Jailobaeva K, Falconer J, Loffreda G, et al. (2021) An analysis of policy and funding priorities of global actors regarding noncommunicable disease in low- and middle-income countries. *Globalization and Health* 17(1): 68.

Jeet G, Thakur JS, Prinja S, et al. (2017) Community health workers for non-communicable diseases prevention and control in developing countries: Evidence and implications. *PLOS ONE* 12(7). Public Library of Science: e0180640.

Khaltaev N and Axelrod S (2022) Countrywide "best buy" interventions for noncommunicable diseases prevention and control in countries with different level of socioeconomic development. *Chronic Diseases and Translational Medicine* 9(1): 44–53.

Khedr EM, Daef E, Mohamed-Hussein A, et al. (2020) Impact of comorbidities on COVID-19 outcome. medRxiv. Available at:

https://www.medrxiv.org/content/10.1101/2020.11.28.20240267v1 (accessed 9 June 2024).

Kingdon: Agendas, alternatives, and public policies - Google Scholar (n.d.). Available at: https://scholar.google.com/scholar_lookup?hl=en&publication_year=1984&author=J.+W.+Kingdon&title=Agendas%2C+Alternatives+and+Public+Policies (accessed 24 March 2022).

Kiragu ZW, Gathecha G, Mwangi MK, et al. (2021) Access to Medicines for Non-Communicable Diseases (NCDS) during COVID-19 in Kenya: A Descriptive Commentary. *Health Systems & Reform*. Taylor & Francis. Epub ahead of print 1 January 2021.

Kluge H, Kelley E, Swaminathan S, et al. (2018) After Astana: building the economic case for increased investment in primary health care. *The Lancet* 392(10160). Elsevier: 2147–2152.

Kontis V, Mathers CD, Rehm J, et al. (2014) Contribution of six risk factors to achieving the 25×25 non-communicable disease mortality reduction target: a modelling study. *The Lancet* 384(9941). Elsevier: 427–437.

K.Park (2023) *Park's Textbook of Preventive and Social Medicine*. 27th ed. Bhanot.

Kumar G (2019) Public Health Panorama of Operational Research: A Narrative Review. *International Journal of Preventive Medicine* 10: 43.

Kumssa A and Jones JF (2014) Post-independence African Policy: African Socialism and the Organization of African Unity. *Public Administration Research* 4(1): p12.

Kusuma YS and Babu BV (2019) The costs of seeking healthcare: Illness, treatment seeking and out of pocket expenditures among the urban poor in Delhi, India. *Health & Social Care in the Community* 27(6): 1401–1420.

Laar AK, Adler AJ, Kotoh AM, et al. (2019) Health system challenges to hypertension and related non-communicable diseases prevention and treatment: perspectives from Ghanaian stakeholders. *BMC Health Services Research* 19(1): 693.

Lee EK, Pietz F, Benecke B, et al. (2013) Advancing Public Health and Medical Preparedness with Operations Research. *Interfaces* 43(1). INFORMS: 79–98.

Levin AL (1977) Doing Better and Feeling Worse: Health in the United States, by John H. Knowles. *Political Science Quarterly* 92(4): 749–750.

Liu X, Lindquist E, Vedlitz A, et al. (2010) Understanding Local Policymaking: Policy Elites' Perceptions of Local Agenda Setting and Alternative Policy Selection. *Policy Studies Journal* 38(1): 69–91.

Liwanag HJ and Wyss K (2019) Optimising decentralisation for the health sector by exploring the synergy of decision space, capacity and accountability: insights from the Philippines. *Health Research Policy and Systems* 17(1): 4.

Loveridge J (2017) Between hunger and growth: pursuing rural development in Partition's aftermath, 1947–1957. *Contemporary South Asia* 25(1). Routledge: 56–69.

Luciani S, Caixeta R, Chavez C, et al. (2023) What is the NCD service capacity and disruptions due to COVID-19? Results from the WHO non-communicable disease country capacity survey in the Americas region. *BMJ Open* 13(3). British Medical Journal Publishing Group: e070085.

Mahalanobis PC (1960) Next Steps in Planning. *Sankhyā: The Indian Journal of Statistics (1933-1960)* 22(1/2). Springer: 143–172.

Mahalanobis PC (1964) Statistical Tools and Techniques in Perspective Planning in India. *Sankhyā: The Indian Journal of Statistics, Series B (1960-2002)* 26(1/2). Springer: 29–44.

Malajovich L and Robinson M (n.d.) BUDGET ANALYSIS AND SOCIAL ACTIVISM.

Malhotra S and Zodpey S (2010) Operations research in public health. *Indian Journal of Public Health* 54(3): 145.

Mapping-Budget-Priorities-for-the-Health-Sector-of-Select-States-in-India-2.pdf (n.d.). Available at: https://www.cbgaindia.org/wp-content/uploads/2021/08/Mapping-Budget-Priorities-for-the-Health-Sector-of-Select-States-in-India-2.pdf (accessed 26 December 2023).

Martin (n.d.) Health. In: *United Nations Sustainable Development*. Available at: https://www.un.org/sustainabledevelopment/health/ (accessed 27 December 2023).

Martin S, Rice N and Smith PC (2008) Does health care spending improve health outcomes? Evidence from English programme budgeting data. *Journal of Health Economics* 27(4): 826–842.

McCollum R, Theobald S, Otiso L, et al. (2018a) Priority setting for health in the context of devolution in Kenya: implications for health equity and community-based primary care. *Health Policy and Planning* 33(6): 729–742.

McCollum R, Theobald S, Otiso L, et al. (2018b) Priority setting for health in the context of devolution in Kenya: implications for health equity and community-based primary care. *Health Policy and Planning* 33(6): 729–742.

McGowan AK, Kramer KT and Teitelbaum JB (2019) Healthy People: The Role of Law and Policy in the Nation's Public Health Agenda. *The Journal of Law, Medicine & Ethics* 47(2_suppl). SAGE Publications Inc: 63–67.

Mendis S and Fuster V (2009) National policies and strategies for noncommunicable diseases. *Nature Reviews. Cardiology* 6(11): 723–727.

Michie S, van Stralen MM and West R (2011) The behaviour change wheel: A new method for characterising and designing behaviour change interventions. *Implementation Science* 6(1): 42.

Mishra SK (1994) *Mahalanobis Approach to Planning in India*. Deep and Deep Publications.

Mitton C and Donaldson C (2003) Resource Allocation in Health Care: Health Economics and Beyond. *Health Care Analysis : HCA* 11(3). New York, Netherlands: Springer Nature B.V.: 245–57.

Mitton C and Donaldson C (2004) Health care priority setting: principles, practice and challenges. *Cost Effectiveness and Resource Allocation* 2(1): 3.

Mkandawire T (2004) Social Policy in a Development Context: Introduction. In: Mkandawire T (ed.) *Social Policy in a Development Context*. London: Palgrave Macmillan UK, pp. 1–33. Available at: https://doi.org/10.1057/9780230523975_1 (accessed 20 May 2024).

Moloughney BWP, Peel (Ont. : Regional municipality), and Public Health (2013) *The Use of Policy Frameworks to Understand Public Health-Related Public Policy Processes: A Literature Review : Final Report*. Mississauga, Ont.: Peel Public Health. Available at: https://www.deslibris.ca/ID/237675 (accessed 22 February 2022).

Molyneux M (2008) The 'Neoliberal Turn' and the New Social Policy in Latin America: How Neoliberal, How New? *Development and Change* 39(5): 775–797.

Moran M, Rein M and Goodin RE (2006) *The Oxford Handbook of Public Policy*. Oxford University Press.

Morton A, Thomas R and Smith PC (2016) Decision rules for allocation of finances to health systems strengthening. *Journal of Health Economics* 49: 97–108.

Murray CJL, Aravkin AY, Zheng P, et al. (2020) Global burden of 87 risk factors in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019. *The Lancet* 396(10258). Elsevier: 1223–1249.

Musgrove P (1999) Public spending on health care: how are different criteria related? *Health Policy (Amsterdam, Netherlands)* 47(3): 207–223.

Musgrove P and Fox-Rushby J (2006) Cost-Effectiveness Analysis for Priority Setting. In: Jamison DT, Breman JG, Measham AR, et al. (eds) *Disease Control Priorities in Developing Countries*. 2nd ed. Washington (DC): The International Bank for Reconstruction and Development / The World Bank. Available at: http://www.ncbi.nlm.nih.gov/books/NBK11780/ (accessed 16 January 2024).

Naku DWC and Afrane S (2013) Local Community Development and the Participatory Planning Approach: A Review of Theory and Practice. *Current Research Journal of Social Sciences* 5(5): 185–191.

Nath A, Sudarshan KL, Rajput GK, et al. (2022) A rapid assessment of the impact of coronavirus disease (COVID- 19) pandemic on health care & service delivery for noncommunicable diseases in India. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews* 16(10): 102607.

National Health Policy, 2017| National Portal of India (n.d.). Available at: https://www.india.gov.in/national-health-policy-2017 (accessed 27 December 2023).

Neale WC (1985) Indian Community Development, Local Government, Local Planning, and Rural Policy since 1950. *Economic Development and Cultural Change* 33(4). The University of Chicago Press: 677–698.

Noorain S, Paola Scaparra M and Kotiadis K (n.d.) Mind the gap: a review of optimisation in mental healthcare service delivery. *Health Systems* 12(2): 133–166.

Nozaki I (2013) WHO's budgetary allocation and disease burden. *The Lancet* 382(9896): 937–938.

Nunes R and Rego G (2014) Priority Setting in Health Care: A Complementary Approach. *Health Care Analysis* 22(3): 292–303.

Pacheco J and Boushey G (2014) Public Health and Agenda Setting: Determinants of State Attention to Tobacco and Vaccines. *Journal of Health Politics, Policy and Law* 39(3): 565–589.

Pal M (2001) Documenting Panchayat Raj. *Economic and Political Weekly* Mathew G (ed.) 36(36). Economic and Political Weekly: 3448–3450.

Pati MK, Swaroop N, Kar A, et al. (2020) A narrative review of gaps in the provision of integrated care for noncommunicable diseases in India. *Public Health Reviews* 41(1): 8.

Patra M and Bandyopadhyay S (2020) Health seeking behaviour and its determinants in urban areas of developing countries: A primary survey in Kolkata city, India. *The International Journal of Health Planning and Management* 35(6): 1438–1452.

Paulden M and Claxton K (2012) Budget allocation and the revealed social rate of time preference for health. *Health Economics* 21(5): 612–618.

Pawar DA and Yadav DM (2013) STUDY ON HISTORICAL DEVELOPMENT OF PANCHAYATI RAJ AT NATIONAL & STATE LEVEL. *Vol. No.* (3). Epub ahead of print 2013.

Plan Guideline – KILA (n.d.). Available at: https://www.kila.ac.in/plan-guideline/ (accessed 8 June 2024).

Planning and scheduling in healthcare for better care coordination: Current understanding, trending topics, and future opportunities - Seokjun Youn, H. Neil Geismar, Michael Pinedo, 2022 (n.d.). Available at: https://journals.sagepub.com/doi/abs/10.1111/poms.13867 (accessed 28 November 2024).

Platonova EA, Studnicki J, Fisher JW, et al. (2010) Local health department priority setting: an exploratory study. *Journal of public health management and practice: JPHMP* 16(2): 140–147.

Primary health care : report of the International Conference on Primary Health Care, Alma-Ata, 1978 (n.d.). Available at: https://www.who.int/publications-detail-redirect/9241800011 (accessed 26 December 2023).

Public Spending on Health: A Closer Look at Global Trends (n.d.). Available at: https://www.who.int/publications-detail-redirect/WHO-HIS-HGF-HFWorkingPaper-18.3 (accessed 9 June 2024).

Puoane TR, Tsolekile LP, Egbujie BA, et al. (2017) Advancing the agenda on noncommunicable diseases : prevention and management at community level. *South African Health Review* 2017(1). Health Systems Trust (HST): 171–179.

Rahman MH (2012) Henry Fayol and Frederick Winslow Taylor's Contribution to Management Thought: An Overview. *ABC Journal of Advanced Research* 1(2). 2: 94–103.

Rakhra A, Mishra S, Aifah A, et al. (2022) Sustaining capacity building and evidence-based NCD intervention implementation: Perspectives from the GRIT consortium. *Frontiers in Health Services* 2. Frontiers.

Reichenbach L (2002) The Politics of Priority Setting for Reproductive Health: Breast and Cervical Cancer in Ghana. *Reproductive Health Matters* 10(20). Taylor & Francis: 47–58.

Reinke WA (1970) The Role of Operations Research in Population Planning. *Operations Research* 18(6). INFORMS: 1099–1111.

Reinke WA (1988) *Health Planning for Effective Management*. Oxford University Press.

Revu J, Anand MP, Aadil R, et al. (2023) Non-communicable disease management: Access to healthcare during COVID-19 pandemic in rural Kerala, India. *Clinical Epidemiology and Global Health* 20: 101231.

Rotulo A, Epstein M and Kondilis E (2020) Fiscal federalism vs fiscal decentralization in healthcare: a conceptual framework. *Hippokratia* 24(3): 107–113.

Ruiz-Rodriguez M, Rodriguez-Villamizar LA and Heredia-Pi I (2016) Technical efficiency of women's health prevention programs in Bucaramanga, Colombia: a four-stage analysis. *BMC Health Services Research* 16(1): 576.

Sabatier PA (ed.) (2019) *Theories of the Policy Process*. New York: Routledge.

Sahoo KC, Kanungo S, Mahapatra P, et al. (2021) Non-communicable diseases care during COVID-19 pandemic: A mixed-method study in Khurda district of Odisha, India. *Indian Journal of Medical Research* 153(5–6): 649.

Sanyaolu A, Okorie C, Marinkovic A, et al. (2020) Comorbidity and its Impact on Patients with COVID-19. *SN Comprehensive Clinical Medicine* 2(8): 1069–1076.

Sarma NA (1958) Economic Development in India: The First and Second Five Year Plans. *Staff Papers (International Monetary Fund)* 6(2). Palgrave Macmillan Journals: 180–238.

Sarma PS, Sadanandan R, Thulaseedharan JV, et al. (2019) Prevalence of risk factors of non-communicable diseases in Kerala, India: results of a cross-sectional study. *BMJ Open* 9(11): e027880.

Sécula F, Erismann S, Cerniciuc C, et al. (2020) Evidence-based policy making for health promotion to reduce the burden of non-communicable diseases in Moldova. *BMC Proceedings* 14(1): 1.

Senanayake S, Senanayake B, Ranasinghe T, et al. (2017) How to strengthen primary health care services in Sri Lanka to meet the future challenges. *Journal of the College of Community Physicians of Sri Lanka* 23: 43.

Shiffman J, Beer T and Wu Y (2002) The emergence of global disease control priorities. *Health Policy and Planning* 17(3): 225–234.

Shukla A, Khanna R and Jadhav N (2018) Using community-based evidence for decentralized health planning: insights from Maharashtra, India. *Health Policy and Planning* 33(1): e34–e45.

Shuman LJ, Wolfe H and R. Dixon Speas J (1974) The Role of Operations Research in Regional Health Planning. *Operations Research*. INFORMS. Epub ahead of print 1 April 1974. DOI: 10.1287/opre.22.2.234.

Shuqair HI (2015) Efficient and Strategic Resource Allocation for Sustainable Development in Jordan. *Journal of Architectural Engineering Technology* 04(01).

Singer PA, Martin DK, Giacomini M, et al. (2000) Priority setting for new technologies in medicine: qualitative case study. *BMJ : British Medical Journal* 321(7272): 1316–1318.

Skocpol T and Finegold K (1982) State Capacity and Economic Intervention in the Early New Deal. *Political Science Quarterly* 97(2). [Academy of Political Science, Wiley]: 255–278.

Smith PC (2007) *Formula Funding of Public Services*. Taylor & Francis. Available at: https://library.oapen.org/handle/20.500.12657/24246 (accessed 13 June 2024).

Stuckler D, King L, Robinson H, et al. (2008) WHO's budgetary allocations and burden of disease: a comparative analysis. *Lancet (London, England)* 372(9649): 1563–1569.

Sulekha - Plan Monitoring (n.d.). Available at: https://plan.lsgkerala.gov.in/formulation/Public.aspx (accessed 4 June 2024).

Sunkel O (1969) National development policy and external dependence in Latin America. *The Journal of Development Studies*. Taylor & Francis Group. Epub ahead of print 1 October 1969. DOI: 10.1080/00220386908421311.

Sustainable Development Goals (n.d.). Available at: https://www.who.int/europe/about-us/our-work/sustainable-development-goals (accessed 12 June 2024).

Terwindt F, Rajan D and Soucat A (2016) Chapter 4 Priority-setting for national health policies, strategies and plans.

Tesema AG, Abimbola S, Mulugeta A, et al. (2021) Health system capacity and readiness for delivery of integrated non-communicable disease services in primary health care: A qualitative analysis of the Ethiopian experience. *PLOS global public health* 1(10): e0000026.

Thakur JS, Paika R and Singh S (2020a) Burden of noncommunicable diseases and implementation challenges of National NCD Programmes in India. *Medical Journal, Armed Forces India* 76(3): 261–267.

Thakur JS, Paika R and Singh S (2020b) Burden of noncommunicable diseases and implementation challenges of National NCD Programmes in India. *Medical Journal Armed Forces India* 76(3): 261–267.

The South African Children's Budget Unit (CBU) of Idasa - Presentation for the Exploratory Dialogue on Applied Budget (n.d.) IDASA: Institute for Democratic Alternatives in South Africa.

The World Health Report 2010 (n.d.). Available at: https://www.who.int/publications-detail-redirect/9789241564021 (accessed 12 June 2024).

Universal Health Coverage (n.d.). Available at: https://www.who.int/health-topics/universal-health-coverage (accessed 12 June 2024).

Vieira B, Hans EW, van Vliet-Vroegindeweij C, et al. (2016) Operations research for resource planning and -use in radiotherapy: a literature review. *BMC Medical Informatics and Decision Making* 16(1): 149.

Vos T, Lim SS, Abbafati C, et al. (2020) Global burden of 369 diseases and injuries in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019. *The Lancet* 396(10258). Elsevier: 1204–1222.

Wagner M, Samaha D, Casciano R, et al. (2019) Moving Towards Accountability for Reasonableness – A Systematic Exploration of the Features of Legitimate Healthcare Coverage Decision-Making Processes Using Rare Diseases and Regenerative Therapies as a Case Study. *International Journal of Health Policy and Management* 8(7): 424–443.

Walley J, Lawn JE, Tinker A, et al. (2008) Primary health care: making Alma-Ata a reality. *The Lancet* 372(9642). Elsevier: 1001–1007.

WEF_Harvard_HE_GlobalEconomicBurdenNonCommunicableDiseases_2011.pdf (n.d.). Available at: https://www3.weforum.org/docs/WEF_Harvard_HE_GlobalEconomicBurdenNonCommunicableDiseases_2011.pdf (accessed 3 March 2024).

Weingast BR (2006) Second Generation Fiscal Federalism: Implications for Decentralized Democratic Governance and Economic Development. *SSRN Electronic Journal*. Epub ahead of print 2006. DOI: 10.2139/ssrn.1153440.

Weir M and Skocpol T (1985) State Structures and the Possibilities for "Keynesian" Responses to the Great Depression in Sweden, Britain, and the United States. In: Rueschemeyer D, Evans PB, and Skocpol T (eds) *Bringing the State Back In*. Cambridge: Cambridge University Press, pp. 107–164. Available at: https://www.cambridge.org/core/books/bringing-the-state-back-in/state-structures-and-the-possibilities-for-keynesian-responses-to-the-great-depression-in-sweden-britain-and-the-united-states/5BA18E8034F5D81DF757F81D6AB9950E (accessed 20 May 2024).

Wendimagegn NF and Bezuidenhout MC (2019) Integrating promotive, preventive, and curative health care services at hospitals and health centers in Addis Ababa, Ethiopia. *Journal of Multidisciplinary Healthcare* 12. Dove Medical Press: 243–255.

Wolfenden L, Reilly K, Kingsland M, et al. (2019) Identifying opportunities to develop the science of implementation for community-based non-communicable disease prevention: A review of implementation trials. *Preventive Medicine* 118: 279–285.

Wood G and Gough I (2006) A Comparative Welfare Regime Approach to Global Social Policy. *World Development* 34(10): 1696–1712.

World Bank (n.d.) Decentralization. Available at: https://www.worldbank.org/en/topic/communitydrivendevelopment/brief/Decentralization (accessed 26 December 2023).

World Economic Forum (2022) New initiative aims to take action on non-communicable diseases. Available at: https://www.weforum.org/agenda/2022/08/initiative-action-non-communicable-diseases/ (accessed 8 June 2024).

Yadav UN, Mistry SK, Ghimire S, et al. (n.d.) Recognizing the roles of primary health care in addressing non-communicable diseases in low- and middle-income countries: Lesson from COVID-19, implications for the future. *Journal of Global Health* 11: 03120.

Zahariadis N (2007) The Multiple Streams Framework: Structure, Limitations, Prospects. In: *Theories of the Policy Process*. Routledge.

ANNEXURES

A1
CURRICULUM VITAE

Name: **Dr Chintha S**

Email: sujathachintha@gmail.com Mob No: 9447375532 Date of Birth: 01-02-1982

Qualification: MBBS from Govt Medical College, Alappuzha MD Community Medicine from Govt Medical College, Kottayam PhD scholar, SCTIMST, Thiruvananthapuram

Paper presentations in conferences:

Attended KUHS National Clinical Epidemiologist's meet & Workshop on September 22-23, 2022, at the Govt. Medical College, Thiruvananthapuram and presented paper on "Impact of COVID-19 on decentralized planning for NCD"

Attended 5th Amrita International Public Health conference on December 2-3, 2022 at AIMS and presented paper on "Evaluation methods for NCD control programs in low resource setting: A systematic review".

"Budgetary allocation for health sector projects in local bodies with specific reference to NCD control" presented at AMRITA International Public Health Conference held on Dec 11, 2021 Poster presentation in '14th Priorities 2024 Conference' at Bangkok, Thailand – "Factors associated with priority setting: Budget allocation for non-communicable diseases in local bodies of Kerala, India."

Oral presentation in '14th Priorities 2024 Conference' at Bangkok, Thailand – " Impact of pandemic on budgetary allocation for health projects: A study of local bodies of Kerala, India."

Publications:

1. Rahul A, Chintha S, Anish TS, Prajitha KC, Indu PS. Effectiveness of a Non-pharmacological Intervention to Control Diabetes Mellitus in a Primary Care Setting in Kerala: A Cluster-Randomized Controlled Trial. Front Public Health. 2021 Nov 16;9:747065. doi: 10.3389/fpubh.2021.747065. PMID: 34869163; PMCID: PMC8636158.

2. Chintha S, Kannan S. Budgetary allocation for health sector projects in local bodies with specific reference to noncommunicable diseases control. *Indian Journal of Public Health*. 2022;66(5):31. doi:10.4103/ijph.ijph_1071_22
3. Chintha S, Kannan S. Decentralized planning for non-communicable diseases: protocol for an explanatory study of local self-government projects in Kerala, India. Int J Community Med Public Health 2024;11:4043-9.
4. Nair SJ, Sujatha C, Chettiar K P S, Sasikala K. Toxico-epidemiology of acute poisoning; an exploratory study from a tertiary care hospital in South India along with global comparisons and solutions. J Forensic Leg Med. 2021 Oct 1;83:102247.
5. Prajitha KC, Rahul A, Chintha S, Soumya G, Suresh MM, Nair ANKK, et al. Strategies and challenges in Kerala's response to the initial phase of COVID-19 pandemic: a qualitative descriptive study. BMJ Open. 2021 Jul 1;11(7):e051410.
6. Sujatha C, Sudha RR, Surendran AT, Reghukumar A, Valamparampil MJ, Sathyadas IP, et al. Social, health system and clinical determinants of fever mortality during an outbreak of dengue fever in Kerala, India. J Fam Med Prim Care. 2021 May;10(5):1998–2005.
7. Sujatha C, Krishnankutty SL, Khader K, Kanmani AK, Rahul A, Suresh MM, et al. Entry Screening at Airport as a COVID-19 Surveillance Tool: Evaluation of Thiruvananthapuram International Airport in Kerala, India. Int J Travel Med Glob Health. 2021 Jun 1;9(2):78–83.
8. Rahul A, Saini P, Valamparampil MJ, Singh G, Suresh MM, Prajitha KC, Jose MS, Nair ANKK, Ananth M, Sreekanth KB, Sujatha C, Kumar NP, Indu PS, Anish TS. Epidemiological and clinical characterization of dengue virus serotypes during 2017- 2019 in southern Kerala, India. Trans R Soc Trop Med Hyg. 2022 Oct 2;116(10):900- 909. doi: 10.1093/trstmh/trac001. PMID: 35144283.
9. Rs R, Suresh MM, Saini P, Pm A, Sukumaran M, Sujatha C, et al. Clinical and virological characteristics of patients during the outbreak of chikungunya in Thiruvananthapuram, Kerala, India, 2019–2020. J Clin Virol Plus. 2021 Dec 1;1(4):100043.
10. Sudha RR, Sujatha C, Gopakumar S, Libu GK, Indu PS, Suresh RO, et al.

Institutional quarantine centres as a strategy in control of COVID-19 outbreak: An evolving model from Kerala, India. J Fam Med Prim Care. 2021 Jan;10(1):527–32.

11. Chandran D, Sreekumar E, Prajitha KC, Sharahudeen A, Raveendran CL, Team R. Breakthrough infection with SARS-CoV-2 delta variant in old-age homes in a Southern District of Kerala, India. *Indian Journal of Public Health*. 2022;66(5):36. doi:10.4103/ijph.ijph_1084_22
12. Sujatha C, Sudha R, Krishnankutty S, K C P. Environmental Vector Control Practices among Households of Patients with Dengue Fever during the Epidemic of 2018 in Kerala, India. J Evid Based Med Healthc. 2021 Jan 11;8:48–52.
13. Sujatha C, Rajan R, Krishnankutty S. Health Seeking in People Later Diagnosed as Having Dengue Fever during the Epidemic of 2018 in Kerala, India. J Evid Based Med Healthc. 2021 Jan 4;8:1–5.
14. Sujatha C, Raveendran A, Lalitha Krishnankutty S. Knowledge And Attitude Regarding Tuberculosis Treatment Among Dot Providers Of Rntcp Registered Patients In Kottayam District, Kerala. J Evol Med Dent Sci. 2017 Nov 20;6(90):6264–7.
15. Sujatha C, Vadasseril J, Jayaprakash G, Joy J. Needlestick Injury Among Healthcare Workers In A Tertiary Care Hospital, Kerala. J Evid Based Med Healthc. 2017 Oct 11;4:4846–50.
16. Prakash SS, Sabu S, Raghavan J, Sujatha C. Prevalence of Psychological Illness Among Quarantined People in Trivandrum District During the COVID-19 Pandemic: A Cross- sectional Study. Int J Med Stud [Internet]. 2021 Sep 29 [cited 2021 Oct 23]; Available from: https://www.ijms.info/IJMS/article/view/1063
17. Khader K, Chintha S. Digital contact tracing in epidemics: fast tracking the future.Int J Community Med Public Health 2022;9:3930-6
18. Jessy SJ, Beegum MS, Genga S, Bindu G, Chintha S, Sasidharan S, et al. Prevalence of SARS CoV-2 infection among Health Care Workers of a hybrid tertiary COVID 19 hospital in Kerala [Internet]. 2021 Jul [cited 2021 Oct 23] p. 2021.07.19.21260792. Available from: https://www.medrxiv.org/content/10.1101/2021.07.19.21260792v1

19. Aparna S, Swapna AS, Ajithkumar GS, Chintha S, Prathiush PR, Nandakumar S, et al. Skin specimen as an alternative to brain tissue for post mortem rabies diagnosis in animals to scale up animal rabies surveillance [Internet]. 2021 Sep [cited 2021 Oct 23] p. 2021.09.01.458510. Available from: https://www.biorxiv.org/content/10.1101/2021.09.01.458510v1

20. Sujatha Aparna, Abraham Susan Swapna, G. S. Ajithkumar, Sujatha Chintha, P. R. Prathiush, S. Nandakumar, Joseph Baby (2022). Skin Specimen as an Alternative to Brain Tissue for Post Mortem Rabies Diagnosis in Animals to Scale up Animal Rabies Surveillance. EAS J Vet Med Sci, 4(4), 38-43.

21. Jessy SJ, Beegum S, Genga S, Bindu G, Chintha S, Sasidharan S, Tonio A, Reghukumar A. Prevalence of SARS-CoV-2 Infection among Health Care Workers of a Hybrid Tertiary COVID-19 Hospital in Kerala, India [Internet].2022 July;11(3):BO13-BO18.

22. M Bifina Beegum, Devakumar VK, Sugunan S et.al. Clinicoetiological profile and outcome of children with status epilepticus admitted in pediatric intensive care unit of a tertiary care hospital – a prospective observational study. International Journal of Research and Review. 2021; 8(7): 473-480. DOI: https://doi.org/10.52403/ijrr.20210767

23. Ramachandran D, R A, Panicker P, S J, Sathyabhama M, Nair A, et al. The mucormycosis and Stroke: the learning curve during the second COVID-19 pandemic. J Stroke Cerebrovasc Dis. 2022 Oct 12;106819. Available from: https://www.sciencedirect.com/science/article/pii/S1052305722005134

24. Nair A, Jabbar PK, Chellamma J, et al. A Combination of Fasting Plasma Glucose and Hba1c Estimated at 25 Years Age is the Best Early Case Detection Strategy for Pre- Diabetes and Diabetes. Results from the Community Based Icmr Iryind Study. Published online August 7, 2023. doi:10.2139/ssrn.4530076

25. Nair A, Chellamma J, Gopi A, Sujatha C, Sarayu S, Jabbar PK. Efficacy of a levothyroxine dosage regimen based on serum thyrotropin level, for primary hypothyroidism. An open label dose finding study. *Journal of Family Medicine and Primary Care*. 2024;13(1):70. doi:10.4103/jfmpc.jfmpc_654_23

26. Kanchana BM, Jayaraman V, Krishnan J, et al. Epidemiological and clinical profile of children reported with HFMD-like illness in the field practice area of an urban health training center of a teaching hospital in Thiruvananthapuram district, Kerala. *Amrita Journal of Medicine*. 2023;19(2):72. doi:10.4103/AMJM.AMJM_14_23

27. Manjapallikkunnel SR, Nair ANK, Sujatha C. Knowledge, Attitude and Practices Among Mothers of Infants Regarding Breastfeeding. *Journal of Family and Reproductive Health*. Published online September 3, 2023:136-141. doi:10.18502/jfrh.v17i3.13536

28. Vincent J, Santhakumari RM, Nalinakumari Kesavan Nair A, et al. What our children lost and gained at the time of school closure during the Covid-19 pandemic: a study on psychological distress, behavioural concerns and protective factors of resilience among preschool children in Kerala, India. *International Journal for Equity in Health*. 2024;23(1):14. doi:10.1186/s12939-023-02090-3

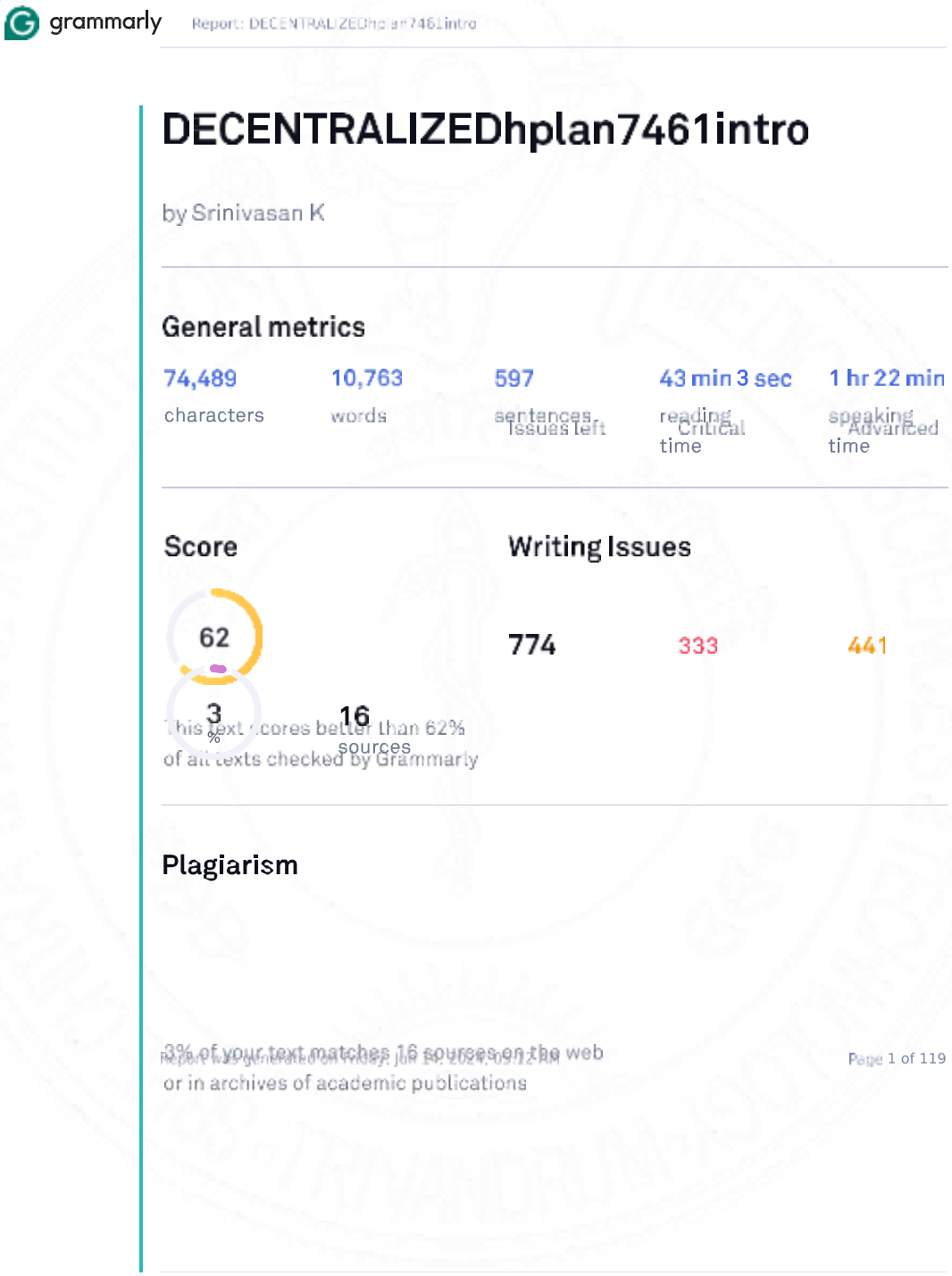
29. Indu PS, TS A, Sujatha C, et al. Gravitraps in dengue surveillance and control: a community-based intervention, Volume 42, Dengue Bulletin ,WHO. Published online December 1, 2021.

A2

DECENTRALIZED HEALTH PLANNING FOR NON-COMMUNICABLE DISEASES IN KERALA: A BUDGET ANALYSIS

Dr Chintha S 7461

Plagiarism report



DecentralisedHPlanNCD_7461methoddisc

by Srinivasan K

General metrics

68,547	10,284	545	41 min 8 sec	1 hr 19 min
characters	words	sentences	reading time	speaking time

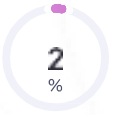
Score

This text scores better than 61% of all texts checked by Grammarly

Writing Issues

750	349	401
Issues left	Critical	Advanced

Plagiarism



14 sources

2% of your text matches 14 sources on the web or in archives of academic publications

results7461

by Srinivasan K

General metrics

61,265	9,476	1960	37 min 54 sec	1 hr 12 min
characters	words	sentences	reading time	speaking time

Score

73

This text scores better than 73% of all texts checked by Grammarly

Writing Issues

488	271	217
Issues left	Critical	Advanced

Plagiarism

1 %

2 sources

1% of your text matches 2 sources on the web or in archives of academic publications

A3
LIST OF PUBLICATIONS

Original Article

Budgetary Allocation for Health Sector Projects in Local Bodies with Specific Reference to Noncommunicable Diseases Control

Sujata Chintha[1], Sriyasan Kannan[2]

[1]Associate Professor, Department of Community Medicine, Government Medical College, Thiruvananthapuram, [2]PhD Scholar, [3]Professor, Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, Kerala, India

Downloaded from http://journals.lww.com/ijph by BhDMf5ePHKav1zEoum1tQfN4a+kJLhEZgbsIHo4XMi0hCywCX1AWnYQp/IlQrHD3i3D0OdRyi7TvSFl4Cf3VC1y0abggQZXdgGj2MwlZLeI= on 08/09/2023

Abstract

Background: The role of local self-government (LSG) bodies in planning community-level interventions for noncommunicable diseases (NCD) control is critical. An understanding of how much priority is given to NCD in decentralized health planning is needed. **Objective:** The objective of this study is to analyze the pattern of budgetary allocation for health sector projects at different levels of LSGs in Thiruvananthapuram, Kerala, with specific reference to NCD control. **Materials and Methods:** Secondary data analysis was done on economic review reports and reports on health sector projects obtained from LSG department with permission. The pattern of budgetary allocation of health projects in both urban and rural local bodies of Thiruvananthapuram district for 2019–2020 was studied. **Results:** The proportion of NCD projects in terms of number and budget allocation, respectively, among health sector projects for gram panchayaths (GP) was 47 projects (5.25%) and 63.19 lakhs (1.8%). Figures for block panchayaths (BP) were 13 (9%) and 98.10 lakhs (10.94%), for district panchayath (DP), 1 (0.9%) and 48 lakhs (3%), for municipalities 1 (1.6%) and 4.66 lakhs (1.2%), and for corporation were 1 (1.4%) and 3 lakhs (0.16%). Only 29 (40%) GP and 5 (45%) BP had at least one NCD project. At the GP level, 21% of projects were community-based interventions and 15% of projects were for cancer screening, mental health, and hospital-based NCD clinics each. Among local bodies with lower allocation for NCD projects, the amount allocated for construction and maintenance work in health institutions was higher. **Conclusion:** Decision-making in decentralized health planning needs an evidence-based realignment of priorities toward NCD.

Key words: Budget allocation, community interventions, decentralized planning, Kerala, noncommunicable diseases

Introduction

Two-thirds of disease burden in India can be attributed to noncommunicable diseases (NCD).[1] The epidemiological transition level has been reported to be highest in the Indian state of Kerala.[2] Recent studies estimate that more than 80% of adults aged 18–64 years have at least one of the NCD risk factors. Raised Blood Pressure and raised Fasting blood glucose (FBG) are present in 30.4% and 19.2% of adults in Kerala.[3] Addressing the problem of NCD needs strategies targeting environmental and behavioral risk factors, and applying principles of primary health care.[4] Local self-government (LSG) bodies have a critical role in initiating and implementing community-level NCD control programs as well as supporting public health-care facilities in screening and treatment services.[5-10] Although the share of morbidity and mortality due to NCDs outweigh all other diseases, the proportion of funds allocated by local governance bodies for NCD projects is reported to be inadequate.[9,11] There is a need for local health system planners and managers to prioritize NCD care.[10,12]

In 1994, the Kerala State Assembly passed the Panchayati Raj Act after the 73rd and 74th Constitutional Amendments, which has empowered local governance bodies with funds, functions, and functionaries. Kerala has successfully implemented decentralized planning through its LSG bodies. For decentralized planning, unique "projects" that were in the form of plans or schemes for accomplishing specific objectives were devised. Development projects covering all sectors are

Address for correspondence: Dr. Sriyasan Kannan, Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram, Kerala, India.
E-mail: kannanshri@gmail.com

Access this article online

Quick Response Code:

Website: www.ijph.in

DOI: 10.4103/ijph.ijph_1071_22

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow_reprints@wolterskluwer.com

Submitted: 09-Aug-2022 **Published:** 11-Nov-2022
Accepted: 17-Aug-2022

How to cite this article: Chintha S, Kannan S. Budgetary allocation for health sector projects in local bodies with specific reference to noncommunicable diseases control. Indian J Public Health 2022;66:531-5.

Downloaded from http://journals.lww.com/IJPH by BhDMf5ePHKav1zEoum1tQfN4a+kJLhEZgbsIHo4XMi0hCywCX1AWnYQp/IlQrHD3i3D0OdRyi7TvSFl4Cf3VC1y0abggQZXdgGj2MwlZLeI= on 06/06/2023

planned and implemented by the local bodies, of which health is an important area.[13] An understanding of how much priority is given to NCD in decentralized health planning and the type of interventions initiated will help us in planning effective strategies for NCD. This study aims to analyze the pattern of budgetary allocation for health sector projects at different levels of LSGs in Thiruvananthapuram with specific reference to NCD control.

Materials and Methods

Secondary data analysis was done on digital datasets, available as reports on health sector projects from LSG department of Kerala. Thiruvananthapuram district, the state capital was selected for the study. The district with a population of 3.3 million, which has the second highest number of LSG bodies that comprised cities, towns, coastal, and hilly terrains including tribal areas.[14] All LSG bodies, both rural and urban at all three levels, namely, district, block, and gram panchayaths (GP) were included for the analysis. Data were analyzed for 2019–2020, the latest pre-COVID-19 planning period. For the present analysis, the criteria used for "NCD projects" included those projects that were aimed at prevention, screening, treatment, and rehabilitation for diabetes, hypertension, chronic lung, kidney, heart and liver diseases, cancers, substance abuse, and mental illness. It was mandatory for all LSGs to implement a palliative project; however, they were excluded from the present analysis for better comparison to study NCDs. Detailed analysis for understanding the pattern of budget allocation for different projects was performed on 30 randomly selected GP out of 73.

A data extraction form was developed based on the literature followed by expert consultations. We obtained data from LSG department, Government of Kerala with necessary permissions. Data cleaning and analysis were done using SPSS version 25.0 (SPSS IBM, Armonk, NY, USA). Variables studied were the type of health sector projects, amount and number of each project, LSG bodies with projects on NCD control, budget allocated for NCD, number of projects related to NCD, subsector analysis in terms of, allocation for modern medicine and AYUSH, category-wise analysis in terms of allocation for general, scheduled caste and special tribal population, allocation for HR, consumables, infrastructure, and community interventions. Analysis was done by calculating proportion of budget allocation based on actual amount allocated for each project, and number of projects for the abovementioned variables. The mean and standard deviation for the amount of allocation and number of projects across various types were estimated. The mean amount allocated for NCD projects was used as the cutoff for categorizing LSGs into high allocated LSG and low allocated LSG. The student's *t*-test was used for testing the significance of association between allocation in various projects and the amount allocated for NCD. $P < 0.05$ was considered statistically significant.

Results

Data from all the 90 LSG bodies of Thiruvananthapuram district for which reports were available for 2019–2020 were analyzed for the present study. Data from all levels of local government from the district were analyzed, namely, one district panchayath (DP), one corporation, four municipalities, 11 BP, and 73 GP. The sector-wise analysis in terms of distribution of fund allocation at the LSG levels for productive, service, and infrastructure sectors, found that more than half (55%) of the allocation of funds from the LSG plan was on service sector in 2019–2020. Out of the allocation, only 6% was allocated for health-related projects (1284 projects). Out of those projects, 895 were at the village level (GP), 142 were at the block level (BP), 71 were at the city corporation, 112 were at the DP, and 60 were at four municipalities. The total budget allocated for the 1284 health projects was Rs. 8100 lakhs. At the village level, the GPs allocated Rs. 3433 lakhs (42.38%), and the BP allocated Rs. 897 lakhs (11.07%). The city corporation was a single entity that allocated the highest amount Rs. 1798 lakhs (22.19%), and that was followed by the DP with Rs 1584 lakhs (19.56%). The four municipalities together allocated Rs. 386 lakhs (4.76%). Corporation and DP allocated higher proportion of their total budget for health compared to other local bodies in terms of the percentage share of total allocation. The GPs allocated 47%, whereas BPs allocated 12.57%, DPs allocated 13.92%, municipalities with 14.44%, and the corporation body allocated 12.05%. In terms of distribution of fund allocation between allopathy and AYUSH, 49% on 629 projects were by allopathy, 18% on 232 projects by Ayurveda, 12% on 147 projects by homeopathy, and 3% on 42 projects by Siddha.

The LSGs of Thiruvananthapuram were implementing 63 NCD projects, which was 4.9% of the total number of health projects. The budget allocated for NCD through LSG projects in Thiruvananthapuram was Rs. 216.95 lakhs, which was 2.7% of the allocation for health projects. The mean allocation per NCD project was Rs. 3.4 lakhs. The proportion of NCD projects in terms of number and budget allocation, respectively, among health sector projects for GP were 47 projects (5.25%) and Rs. 63.19 lakhs (1.8%). The allocation at the BP level was 13 (9%) and Rs. 98.10 lakhs (10.94%), for DP level 1 (0.9%) and Rs. 48 lakhs (3%), at municipalities 1 (1.6%) and 4.66 lakhs (1.2%), and for corporation was 1 (1.4%) and 3 lakhs (0.16%). Less than half, that is 36 (40%) LSGs had at least one NCD project. Only 29 (40%) GP and 5 (45%) BP had at least one NCD project. Table 1 shows the proportion of NCD projects in terms of number and budget allocated for health sector at all levels of local bodies.

The corporation of the district had only a single NCD project among 71 health projects, with an allocation of Rs 3 lakhs, implemented by homeopathic institution. The project was for improving the quality of life and prevention of relapses in stroke-affected patients. Out of the 112 health projects of DP, 82 (73%) were for construction and maintenance, 13 (12%)

Table 1: Proportion of noncommunicable disease projects in terms of number and budget allocation among health sector projects across local bodies

Type of local body (*n*)	Number of NCD projects/ health projects (%)	Number of local bodies with NCD projects (%)	Budget allocated for NCD projects in lakhs (%)	Mean allocation per NCD project in rupees lakhs
DP (1)	1/112 (0.9)	1/1 (100)	48 (3)	48
BP (11)	13/142 (9)	5/11 (45)	98.10 (10.94)	7.5
GP (73)	47/895 (5.25)	29/73 (40)	63.19 (12.8)	1.3
Corporation (1)	1/71 (1.4)	1/1 (100)	3 (0.16)	3
Municipality (4)	1/60 (1.6)	1/4 (25)	4.66 (1.2)	4.7
Total (90)	63/1284 (4.9)	36/90 (40)	216.95 (2.7)	3.4

NCD: Noncommunicable disease, BP: Block panchayath, GP: Gram panchayath, DP: District panchayath

for establishment, 11 (10%) for purchases, 4 (3.6%) palliative projects, and 1 (0.9%) each for communicable and NCD. There was only one NCD project which was for establishing a dialysis unit at a Taluk hospital. The amount allocated for the project was 47.68 lakhs. In addition, another major health-related project at the district level was three water treatment plants, each worth 3 lakhs and a Tribal Sub-Plan project with the allocation of 5 lakhs rupees for conducting medical camps. Similarly, only one NCD project was implemented in one of the municipalities for the purchase of medicines, insulin, and other items essential for the treatment and management of NCD. The 11 BPs had 142 health projects, of which 13 were for NCD. Only one BP was performing well with eight NCD projects, one of which was a special component plan for the scheduled caste population. Among the NCD projects, 4 (31%) each were on two areas – mental health and community-based NCD program. Three (23%) projects were for cancer screening, one each for special diabetes clinic and health education. At the GP level, 21% of projects were community-based interventions and 15% of projects were for cancer screening, mental health, and hospital-based NCD clinics each. Two GP had projects for fitness center establishment. Of the total 61 NCD projects across three levels of panchayaths, 13 (21%) projects each were on NCD clinics and NCD screening. Mental health was addressed in 11 (18%) projects and 10 (16%) for cancer screening. Special clinics were planned through 5 (8%) projects. There were no projects specifically focusing on dietary modifications for NCD control. Table 2 shows the type of NCD projects implemented across three levels of panchayaths in Thiruvananthapuram district.

A detailed analysis of pattern of budget allocation across various types of LSG projects was done among 30 randomly selected GP of Thiruvananthapuram district. The mean (SD) of allocation and its range is given in Table 3. The highest allocation was for the purchase of medicines, with 30.3% (468 lakhs), followed by construction and maintenance, 28.2% (436 lakhs). Those projects on the purchase of medicines for NCD clinics were included in the NCD category. Another major category was palliative care with an allocation of 21.3% (330 lakhs). Allocation for NCD projects excluding palliative care accounted only for 5.2% (81 lakhs). The total allocation for NCD projects including palliative care was 26.5% (411 lakhs). The GPs were classified into two categories,

Table 2: Type of noncommunicable disease projects implemented at three levels of panchayaths

Type of NCD project	GP (895)	BP (142)	DP (112)	Total (%)
Preventive				
NCD screening	10	3	0	13 (21.3)
Cancer screening	7	3	0	10 (16.3)
Health education	2	1	0	3 (4.9)
Mental health	7	4	0	11 (18)
School health	3	0	0	3 (4.9)
Physical activity	2	0	0	2 (3.3)
Diet-related	0	0	0	0
Curative				
NCD clinic	13	0	0	13 (21.3)
Special clinics camps	3	2	0	5 (8.1)
Management of complications				
Dialysis unit	0	0	1	1 (1.6)
Total	47	13	1	61 (100)

NCD: Noncommunicable disease, BP: Block panchayath, GP: Gram panchayath, DP: District panchayath

namely, high and low for NCD projects fund allocation as mentioned above. This was based on the average fund allocated. The association of pattern of allocation in different projects with the amount allocated to NCD projects was studied and is shown in Table 4. Out of the 30 GPs studied, 19 (63.3%) had an allocation of <2.7 lakhs for NCD projects. Moreover, the number of GPs with no NCD projects was 11 (36.7%). GPs with more than the average allocation for NCD projects had significantly higher allocation for community-level interventions and mental health. Allocation for palliative care and purchases were also higher for those GPs. Among local bodies with lower allocation for NCD projects, the amount allocated for construction and maintenance work in health institutions was higher. The allocation for NCD increased with increase in total allocation for health.

Discussion

This study brings out the pattern of allocation for health sector projects across different levels of LSG in Thiruvananthapuram district with specific reference to NCD. The allocation for health projects itself is meager (3.3%) similar to the pattern observed nationally as well as in the state. As per national

Downloaded from http://journals.lww.com/IJPH by BhDMf5ePHKav1zEoum1tQfN4a+kJLhEZgbsIHo4XMi0hCywCX1AWnYQp/IlQrHD3i3D0OdRyi7TvSFl4Cf3VC1y0abggQZXdgGj2MwlZLeI= on 06/06/2023

Table 3: Pattern of budget allocation across various local self-government projects ($n=30$ Gram panchayaths)

Type of project	Amount allocated in lakhs (rupees)			Total allocation in lakhs (proportion of allocation) (%)
	Mean (SD)	Minimum	Maximum	
All health projects	51.55 (25.39)	20.29	124.29	1546 (100)
NCD	2.70 (3.72)	0	11.44	81 (5.2)
Community-level NCD interventions	1.76 (2.72)	0	9.26	53 (3.4)
Mental health	0.23 (0.50)	0	2	7 (0.5)
Palliative care	11.00 (4.06)	4.80	20.96	330 (21.3)
Salary for staff	2.24 (3.44)	0	10.14	67 (4.3)
Construction and maintenance	14.54 (18.83)	0	71.17	436 (28.2)
Purchases other than medicines	2.49 (3.60)	0	16.75	75 (4.8)
Purchase of medicines	15.61 (6.59)	6.5	33.32	468 (30.3)
Communicable disease control	0.82 (2.06)	0	10.21	24 (1.6)
Aardram	5.28 (8.05)	0	39.76	158 (10.2)

NCD: Noncommunicable disease, SD: Standard deviation

Table 4: Association of allocation for noncommunicable disease projects and other projects ($n=30$ Gram panchayaths)

Projects	Mean (SD) of allocation in lakhs		
	GPs with <2.7 L allocation for NCD projects ($n=19$)	GPs with ≥2.7 L allocation for NCD projects ($n=11$)	P*
Total of all projects	46.56 (27.13)	60.16 (20.39)	0.161
NCD	0.34 (0.62)	6.8 (3.23)	<0.001
Community-level NCD	0.23 (0.69)	4.39 (2.96)	<0.001
Mental health	0.05 (0.23)	0.55 (0.79)	0.016
Palliative care	10.20 (4.10)	12.38 (3.77)	0.160
Salary for staff	1.88 (3.07)	2.85 (4.10)	0.467
Construction and maintenance	15.63 (21.9)	12.67 (12.58)	0.685
Purchase other than medicines	1.39 (1.63)	4.40 (5.15)	0.086
Medicines	14.70 (6.56)	17.19 (6.65)	0.327
Communicable disease control	0.69 (1.28)	1.01 (3.06)	0.688

*Independent sample t-test, $P<0.05$ is significant.
NCD: Noncommunicable disease, SD: Standard deviation, GPs: Gram panchayaths

level estimates, the percentage of health expenditure spent on preventive care is 6%. The percentage share of local bodies as a financing source in health expenditure is 1%.[4] The share of NCD expenditure in the National Health Mission is <5% and for NPCDCS is <2%. When it comes to local levels, financial and managerial resource allocations for NCDs become all the more suboptimal. Compared to the global and national focus on care for NCDs, prioritization in local health systems is reported to be low.[12] Among the 1284 health projects, only 63 (4.9%) of projects are specifically for NCD. Out of Rs. 8098 lakhs allocated for health projects, only 217 lakhs, that is 2.7% of allocation are for NCD Projects. More than 70% of projects were for construction and maintenance. Even among NCD projects, priority is given to NCD Clinics. BP and GP in Thiruvananthapuram had projects on NCD screening, cancer screening, and mental health. Still, the proportion of budget allocated is dismally low when compared with the morbidity and mortality contributed by NCD. The focus is mostly on infrastructure, purchase of medicines, conduct of medical camps, and health education sessions.[9,11] It is widely acknowledged that local governments can play a vital role in enhancing the quality of the health-care delivery system and thereby the health status of the local community.

There are community-based interventions at GP and some exemplary projects at the block level. However, such projects constitute only around 20% of NCD projects. Projects other than screening camps and health awareness programs are relatively less. Only two projects were specifically focused on physical activity and none were there on diet. Innovative projects for primary prevention of NCD by community-level interventions in improving healthy living are implemented by certain local bodies but are significantly less.[15] There is wide acceptance among all levels of stakeholders that the problem of NCD can be controlled by strategies focusing on prevention and applying principles of Primary Health Care. Prevention of NCD requires sustainable community-level interventions.[4] Moreover, individuals can be held responsible only when structural opportunities for making choices exist. Hence, the provision of optimal architecture for healthy choices ("nudges") including proper spaces for physical activity, sufficient resources, information for following a healthy diet, etc., are needed.[16] The limitation of our study was that we could not include the amount allocated to NCD through nonspecific projects on construction and purchases.

While analyzing association between pattern of allocation for various types of projects and allocation for NCD, certain interesting patterns are emerging. Further studies are needed to explore such associations as well as other determinants for decision-making in NCD allocation. Decentralized planning and priority setting need a change in focus toward NCD control. Most of the time, fixing of priorities while planning is not

Downloaded from http://journals.lww.com/IJPH by BhDMf5ePHKav1zEoum1tQfN4a+kJLhEZgbsIHo4XMi0hCywCX1AWnYQp/IlQrHD3i3D0OdRyi7TvSFl4Cf3VC1y0abggQZXdgGj2MwlZLeI= on 06/06/2023

Downloaded from http://journals.lww.com/IJPH by BhDMf5ePHKav1zEoum1tQfN4a+kJLhEZgbsIHo4XMi0hCywCX1AWnYQp/IlQrHD3i3D0OdRyi7TvSFl4Cf3VC1y0abggQZXdgGj2MwlZLeI= on 05/09/2023

purely based on a rational-/evidence-based need assessment. To what extent NCD policies and strategies align with a decentralized health system needs to be studied further.

Acknowledgment

We thank the officials of LSG Department, Kerala, for giving us the data and permissions.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Dandona L, Dandona R, Kumar GA, Shukla DK, Paul VK, Balakrishnan K, *et al.* Nations within a nation: Variations in epidemiological transition across the states of India, 1990-2016 in the Global Burden of Disease Study. Lancet 2017;390:2437-60.
2. The India State-Level Disease Burden Initiative – Public Health Foundation of India 2018. Available from: https://phfi.org/the-work/research/the-india-state-level-disease-burden-initiative/. [Last accessed on 2021 Nov 24].
3. Sarma PS, Sadanandan R, Thulaseedharan JV, Soman B, Srinivasan K, Varma RP, *et al.* Prevalence of risk factors of non-communicable diseases in Kerala, India: Results of a cross-sectional study. BMJ Open 2019;9:e027880.
4. Prevention_of_chronic_diseases_Policy_Brief.pdf. Available from: https://icrier.org/pdf/Prevention_of_chronic_diseases_Policy_Brief.pdf. [Last accessed on 2021 Nov 24].
5. Ahmad MS, Talib NB. Analysis of community empowerment on projects sustainability: Moderating role of sense of community. Soc Indic Res 2016;129:1039-56.
6. Wickramasinghe K, Wilkins E, Foster C, Fadhil I, Hammerich A, Slama S, *et al.* The development of national multisectoral action plans for the prevention and control of noncommunicable diseases: Experiences of national-level stakeholders in four countries. Glob Health Action 2018;11:1532632. doi: 10.1080/16549716.2018.1532632.
7. Pati MK, Swaroop N, Kar A, Aggarwal P, Jayanna K, Van Damme W. A narrative review of gaps in the provision of integrated care for noncommunicable diseases in India. Public Health Rev 2020;41:8.
8. Thakur JS, Paika R, Singh S. Burden of noncommunicable diseases and implementation challenges of National NCD programmes in India. Med J Armed Forces India 2020;76:261-7.
9. Ohta R, Ryu Y, Kataoka D, Sano C. Effectiveness and challenges in local self-governance: Multifunctional autonomy in Japan. Int J Environ Res Public Health 2021;18:574.
10. Tabaszewski R. The role of local and regional authorities in prevention and control of NCDs: The case of Poland. BMC Int Health Hum Rights 2020;20:17.
11. Ajisegiri WS, Abimbola S, Tesema AG, Odusanya OO, Ojji DB, Peiris D, *et al.* Aligning policymaking in decentralized health systems: Evaluation of strategies to prevent and control non-communicable diseases in Nigeria. PLOS Global Public Health 2021;1:e0000050.
12. Elias MA, Pati MK, Aivalli P, Srinath B, Munegowda C, Shroff ZC, *et al.* Preparedness for delivering non-communicable disease services in primary care: Access to medicines for diabetes and hypertension in a district in South India. BMJ Glob Health 2017;2:e000519.
13. Report of the Committee for Evaluation of Decentralised Planning and Development Kerala Institute of Local Administration; 2009. Available from: http://dspace.kila.ac.in: 8080/jspui/handle/123456789/210. [Last acessed on 2021 Aug 12].
14. List of Districts of Kerala. Available from: https://www.census2011.co.in/census/state/districtlist/kerala.html. [Last accessed on 2022 Jan 07].
15. Thomas MB, Rajesh K. Decentralisation and Interventions In Health Sector: A Critical Inquiry Into The Experience Of Local Self Governments In Kerala. 21.
16. Anderson J. Nudge: Improving decisions about health, wealth, and happiness, richard h. thaler and cass R. Sunstein. Yale University Press, 2008.x+ 293 pages. [Paperback edition, Penguin, 2009, 320 pages]. Econ Philos 2010;26:369-76.

International Journal of Community Medicine and Public Health
Sujatha C et al. Int J Community Med Public Health. 2024 Oct;11(10):4043-4049
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: https://dx.doi.org/10.18203/2394-6040.ijcmph20242659

Protocol

Decentralized planning for non-communicable diseases: protocol for an explanatory study of local self-government projects in Kerala, India

Chintha Sujatha*, Srinivasan Kannan

Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, Kerala, India

Received: 17 August 2024
Revised: 30 August 2024
Accepted: 03 September 2024

***Correspondence:**
Dr. Chintha Sujatha,
E-mail: sujathachintha@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Priority setting and resource allocation in decentralised planning is often not in line with the social and economic burden associated with non-communicable diseases (NCD). This is a protocol developed for the purpose of analysing the pattern of budgetary allocation and utilisation of funds for health sector projects on non-communicable diseases by the local self-government (LSG) institutions in Kerala. It is also proposed to document the processes along with the stakeholders' role in planning.
Methods: Following explanatory design, first we will do secondary data analysis of health sector projects on NCD fund allocation and utilisation, followed by document analysis and key informant interviews in LSGs at selected districts of Kerala. Following policy framework used in public health related policy processes, will perform descriptive analysis, based on stages heuristic in decentralised planning. Multiple dimensions of priority setting and allocation process will be studied. Explanatory analysis for resource allocation process will be studied using Kingdon's multiple streams framework.
Conclusions: The study will help in understanding the decision-making process for fund allocation with the specific focus on NCD. It will also help in building an evidenced based framework for decentralized health planning.
Trial Registration: No: SCT/IEC/1849/FEBRUARY/2022.

Keywords: Non-communicable diseases, Decentralised health planning, Resource allocation, Local self-government, Kerala

INTRODUCTION

Non-communicable diseases have become a major contributor to morbidity and mortality across the globe.[1] India has been experiencing the epidemiological transition with two-thirds of disease burden attributed to non-communicable diseases (NCDs) and injuries.[2] Among all states of India, Kerala is experiencing the highest epidemiological transition level with an epidemiological transition ratio of 0.16. Over 90% of Kerala's premature mortality is contributed by NCDs.[3] The national program for prevention and control of cancer, diabetes, cardiovascular diseases, and stroke (NPCDCS) was launched nationwide and subsequently in the state of Kerala in a phased manner starting from 2008. In spite of the efforts made by the programme, most adults (82.4%) in Kerala had at least one of the NCD risk factors. Only 12.4% of individuals with hypertension and 15.3% of individuals with diabetes were found to have these conditions under control.[4] But the global policy response is not in line with the enormous health, economic and social burden of NCDs.[5] This necessitates an urgency in realigning the priorities to address the economic implications due to high morbidity and mortality caused by NCD.

There is wide acceptance among all levels of stake holders that the problem of non- communicable diseases can be

controlled by strategies focussing on prevention, applying principles of primary health care with emphasis on community participation and intersectoral co-ordination.[6] NCD responses need to be adapted to local contexts and should have stronger governance structure.[5] Evidence suggests that interventions for NCD control should extend beyond the health sector and be targeted within the natural settings at various stages of lives of those in need.[7] Many at times it is assumed that it is the responsibility of the health system to address this problem. But, in reality the conducive behavioural and environmental conditions will control the risk factors associated with NCD.[8-10] This leads us to adapt health promotion approaches. Health promotion, is the process of enabling people to increase control over one's own health, and to improve health needs.[11] This necessitates the provision of optimal architecture for healthy choices ("nudges") with necessary physical spaces for exercises, sufficient resources and information related to healthy diet and so on.[12]

Kerala has strong local bodies engaged in decentralised planning for development projects including health. These bodies are officially known as local self-government (LSG). These LSG institutions play a crucial role in integrating community health interventions with health services of Kerala.[13] Though initiatives of LSGs engaging with the NCD control program for screening and treatment is successful, but were not helpful in achieving complete NCD prevention.[8-10,14,15] For achieving greater success, the LSG institutions need to focus on prioritising NCD control interventions at the grassroot level. Published literature shows at the local level, there is a little fund allocation for NCD, which causes high morbidity and mortality.[10,16] This clearly shows how the planning has gone wrong while setting priority that lead to suboptimal use of resources.[17] Many at times the LSG institutions set priorities without considering the disease burden. The general practice in such instances are creating new infrastructure, purchase of drugs and equipment, organising medical camps and health education programme.[10,16] All LSG institutions do not default as mentioned. There are some LSG institutions engaged in initiatives associated with healthy living and primary prevention.[18] The success of LSG participation was due to increase in fund allocation.[19] Intersectoral co-ordination and community participation will improve preventive strategies such as, lifestyle modification for healthy diet, physical activity, tobacco cessation, early screening for NCD and providing healthy choices at the neighbourhood.[11,20] There is paucity of evidence on community-based health interventional studies from developing countries and this necessitates a study on community-based health interventions and its dynamics.[21] This will help in understanding the role of LSG institutions in implementing community-based interventions and will generate evidences.

Evidence suggests that active facilitation of decentralized health planning and influencing the health system to expand participation, are essential to ensure changes in planning.[22] To generate political priority, advocates will need to address several challenges, including the creation of effective institutions to guide the initiative and the development of a public positioning of the issue to convince political leaders to act on it.[23]

The present endeavour is an effort to answer the following questions; Why certain health issues are only included in the existing LSG projects? And how? What are the factors that determine the priority setting process and decisions on resource allocation with respect to NCD control? What is the pattern of budget allocation and decision-making process followed at present?

Based on the above research questions, the present study aims at analysing the pattern of budgetary allocation and utilisation of health sector projects with specific reference to non-communicable diseases at different levels of LSG institutions in Kerala during 2018 to 2022. The study will also document the allocation processes and the role of stakeholders in health sector planning at LSG institutions in Kerala.

METHODS

The present study follows an explanatory design. The study will be conducted in two phases. In the first phase, the researcher retrieves the data from the public database and collect data on the details on fund allocation by different local bodies in the study districts for the purpose of analysing the pattern of utilisation for health projects with specific reference to NCDs. In the second phase, key informant interviews and analysis of relevant documents will be done at the randomly selected local bodies from the study districts.

Study setting

Kerala state, located in the southern part of India has a population of about 3.5 crores. It has 14 districts. We are selecting three districts of Kerala based on their geographical location. The districts included in the study are, Thiruvananthapuram representing the south, Kozhikode representing North and Kottayam for the centre of the state of Kerala. We will do secondary analysis of data from both urban and rural LSG institutions from these three districts. Urban local bodies include municipalities for towns and corporations for cities. Rural local bodies at three levels of decentralised governance include district, block and grama panchayaths.

Data sources

Secondary data are accessed from the digital datasets that are available in the report format on different health sector projects from the Information Kerala Mission, a Government of Kerala organisation. Documents that were part of the planning and resource allocation processes at the LSG institutions at different levels will also be accessed.

Study participants

For the key informant interviews, the elected representative of local bodies (both former and present), members of different committees at the local levels and the staffs at the selected LSG institutions will be included. As per inclusion criteria only members of the working group for health sector planning in the Grama panchayats will be interviewed. Those members with less than one-year experience in local level planning and those not willing to participate will be excluded.

Framework

The present study adopts a policy framework that was applied in public health-related policy processes.[24] The framework follows a descriptive analysis based on stages heuristic. That is, the actors, contexts and institutions will be analysed in stages. The stages followed are, agenda setting; how problems have been recognized and how they have been framed, project formulation; how options are considered and decided upon and communicated, project adoption; what decisions are made, project implementation; what rules and procedures are established and to what extent are they aligned with initial intentions, and finally project assessment; what has been the impact of the project; how is it monitored; has it achieved its objectives; are there unintended consequences. All stages will be assigned values for different categories of options and a process map will be created based on that. Using this approach, the multiple dimensions of priority setting and allocation process will be examined. Explanatory analysis for understanding the why and how of resource allocation will be following the adopted Kingdon's multiple streams framework (Figure 1).

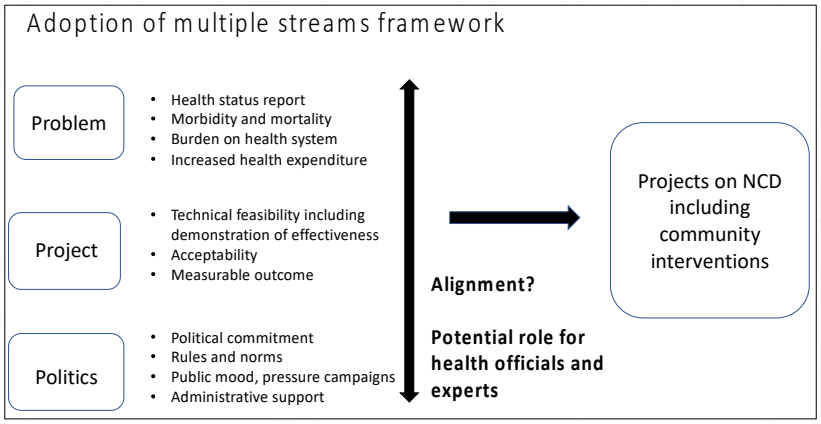


Figure 1: Framework adopted from Kingdon's multiple streams framework

Sample frame

Sample size

Sample size was calculated using the formula for estimation of proportion. With the assumption that the proportion of local bodies with at least a single NCD related project is 60% as per data from Information Kerala Mission (IKM) for the last available year 2019-20, and at a confidence level of 95% and absolute precision of 15%, sample size required was 40 local self-government institutions. Rounding to nearest multiple of three, 42 LSGIs was included in the study. To study the processes and stakeholders in resource allocation the researcher will conduct key informant interviews from at least one respondent to a maximum of three respondents for each of the selected local body institution.

Sampling design

Out of the total 14 districts of Kerala, we are selecting three districts based on geographic location for ensuring representativeness. We will analyse secondary data from all the rural and urban local bodies from the selected three districts. For the phase two primary data collection, which includes document analysis and key Informant interviews, we will be randomly selecting local bodies from the selected three districts.

We will include one urban local body each from all the three districts. Among rural local bodies, three of the district panchayaths will be included. Four block panchayaths will be selected from each district and two grama panchayaths from each block. Thus, the sample will include three urban local bodies, three district panchayaths, 12 block panchayaths and 24 Grama panchayaths, a total of 42 local bodies.

List of local bodies will be the sampling frame. Simple random sampling using computer generated random numbers will be the method employed for random selection of local bodies. Sampling design is shown in Figure 2.

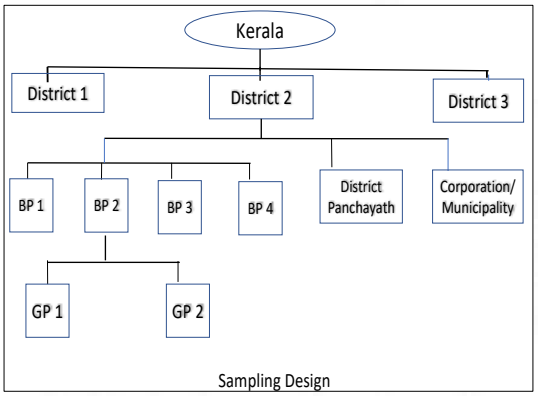


Figure 2: Sampling design.
GP: grama panchayath, BP: block panchayath.

Study tool and procedures

We have obtained permissions for conducting this research work from the LSG department, Government of Kerala. We have developed and validated the data collection tools based on literature review and consulting the experts and a pilot study was conducted. A data extraction form has been developed for secondary data analysis of data on health sector projects. The form extracts project particulars for each year, which includes total budget allocation, number and amount of projects in each category. Document analysis will be done using a checklist for capturing the timeliness, and completeness of documentation of planning meetings, participation and concerns and topics emerging. Interview guides are developed for key informant interviews. Interview will cover questions on conduct, participation and topics emerging in Grama sabha and working group meetings, details of health status and development report, project approval process, trainings, mechanisms for data management and perceptions regarding allocation process. Project documents for health sector will be reviewed for extracting data for detailed analysis of pattern of allocation. Analysis of documents on health sector planning and interviews will be primarily done to understand resource allocation process. Economic review reports, health status reports, minutes of grama sabha and planning committee meetings, annual development plans, calendar for planning, administrative orders and circulars will be analysed. Framework followed for data collection is given in Table 1.

Study variables

Pattern of budgetary allocation and utilization will be captured as LSG bodies with projects on NCD control, budget allocated, number and type of health projects, budget allocated for NCD, number of projects in NCD, utilisation pattern of allocated projects, sector wise allocation and utilization, subsector wise allocation and utilization, category wise allocation and utilization and type of NCD projects. Explanatory variables will be profile of LSG bodies like level, region, political leadership, dominant communities, dominant livelihood means and profile of local body leaders like age, gender, political affiliation, education, occupation, experience, training, income, land holding, religion, caste and family members in politics or social leadership. For understanding the resource allocation process variables used will be adherence to guidelines, health status reports availability and completeness, regularity and timeline of planning committee meetings, composition of meetings, and pattern of projects considered for prioritizing.

Table 1: Framework for data collection.

Methods	Subjects/documents	Variables
Objective 1: Pattern of budgetary allocation		
Secondary data analysis using data extraction form	District level annual report, annual development plans, calendar for planning, administrative orders and circulars of selected LSG	Total budget, service sector budget, health sector budget, total no of projects. No and amount of health projects; in different system, NCD, CD, Infrastructure development, HR, medicines, equipment, NCD screening camps, medical camps, NCD clinics and camps, mental health, Cancer camps, community interventions for NCD, diet modification, physical activity, substance abuse, health awareness, non- health sector projects on NCD.
Primary data collection through interviews	LSG officials and elected representatives.	Profile of LSG: basic information, composition, profile of president
Objective 2: pattern of utilization		
Secondary data analysis using data extraction form	District level annual report Annual report and project documents of selected LSG	Proportion of budget utilized; in different systems, NCD, CD, infrastructure development, HR, medicines, equipment, NCD screening camps, medical camps, NCD clinics and camps, mental health, cancer camps, community interventions for NCD, diet modification, physical activity, substance abuse, health awareness, non-health sector projects on NCD.

Continued.

Methods	Subjects/documents	Variables
Primary data collection through interviews	LSG officials, Grama sabha members and elected representatives.	Factors influencing utilization, monitoring mechanisms, user fee, sustainability.
Objective 3: resource allocation process		
Document analysis using data extraction form	Minutes of Grama sabha Development report Minutes of Vikasana seminar Minutes of working group on health District planning committee report	Document availability and completeness, timeliness, adequate participation; composition, ratio of experts to non-experts, participation of government officers, no and type of concerns raised, no and type of NCD related concerns, no and type of projects formulated, methods for prioritisation, project appraisal, and any economic evaluation methods employed
Primary data collection through interviews	LSG officials, Grama sabha members and elected representatives.	Factors influencing allocation process, prioritisation and appraisal methods, and training in project formulation

Data analysis

Classification, labelling and organization of secondary data will be done initially. After data cleaning and coding, financial analysis will be done. Budget allocation and utilization will be summarized as mean and standard deviation and proportions in terms of actual amount and number of projects will be calculated for outcome variables. Appropriate financial analysis tools associated with fund allocation (budget analysis, allocation efficiency), bivariate (correlation, Chi square, t test and ANOVA) and multivariable analysis (regression) will be done. Efforts will be made to include gender dimension and representation of marginalized sections of society. Statistical analysis will be done using statistical package for the social sciences (SPSS) version 25.0 (SPSS IBM, Armonk, NY).

For process efficiency, analysis of process maps and stakeholder maps will be done. The plan of analysis will include, the description of the actors; the key actors and their beliefs, interests and influences of actors, the context; systemic factors (political, social, economic, others), external events that influence the context and the institutions; rules and norms followed, perspectives and practices at different levels.

For analyzing qualitative component of primary data, deductive coding will be followed, as the checklist for data collection has been made in a thematic way. The newer subthemes emerging from already defined codes will be listed.

Ethical considerations

The study proposal has been cleared by the Institutional ethics committee of SCTIMST, Thiruvananthapuram (No: SCT/IEC/1849/FEBRUARY/2022). Data collection will be scheduled based on the convenience of the participants. Investigator will follow the informed consent process before collecting data. The participants will be briefed on the study objectives, purpose, benefit, risks and voluntariness to decide participation. The privacy, and confidentiality of the data will be ensured at all levels. Anonymity will be maintained throughout.

DISCUSSION

Findings of this study will help in understanding the current pattern of resource allocation and utilization in health sector LSG projects with special reference to NCD. The findings of this study will help policy makers to use this as evidence for future resource allocation exercises. A wide range of factors influence decision making in resource allocation like personal beliefs, public and institutional group pressure, politics, visibility of outcome of projects.[17,18] Previous works from Kerala have studied the link between the socioeconomic status of the Panchayats, people's participation rate in the planning process and the share of resources allocated to health.[29]

A number of analytical frameworks can be used to identify factors that shape political prioritization and policy-responses.[30-32] A study to identify factors leading to the inclusion of NCDs in policy agenda at a global level, was done using Shiffman and smith framework.[5,23] This framework uses a case study method and consists of four categories: the strength of the actors involved in the initiative, the power of the ideas they use to portray the issue, the nature of the political contexts in which they operate, and characteristics of the issue itself. This is elicited with the help of archival research and interviews using a process-tracing method. Another study on priority setting to assess the factors involved in making health in urban poor settings a priority, semi-structured phone interviews and literature reviews were done using process-tracing method.[33] In this study we are planning to adopt selected policy frameworks to identify the determinants of prioritisation and for process mapping.

An evaluation done using in-depth interviews and analysis of change in local health planning processes on a project

aimed at capacity building for decentralized planning done in Maharashtra, revealed positive changes in intervention areas, including increased capacity of key stakeholders leading to preparation of evidence-based, innovative planning proposals, significant community oriented changes in utilization of health facility funds, and inclusion of community-based proposals in village, health facility-based block and district plans.[22] There is limited uptake of economic evidence for priority setting in health care. Scientific and objective priority setting techniques such as programme budgeting and marginal analysis and QALY league tables are seldom used.[34]

Paradigms in decision making for resource allocation have been suggested in previous works. Communitarian claim is one such example, where citizens take the lead in determining the principles or values that are to guide priority setting and others, primarily policy makers play out the process of health care planning.[35] Novel approaches to engage citizens in health priority setting were evaluated which raised questions on the role of public engagement in driving priority setting decision making.[36] In a study examining factors influencing the prioritization of NCDs , results show that most of the times actor power does not extend beyond the health sector and for increasing the role of guiding institutions and civil society, economic arguments, presenting rising costs and burden, are more helpful than the discourse on risk factors and diseases per se.[5]

The different approaches used in to guide resource allocation decisions approaches include evidence-based medicine, burden of disease analyses, cost-effectiveness analyses, and equity analyses. Studies on priority setting of health interventions, propose that instead of approaches that concentrate on single criteria only, we need to make choices taking into account multiple criteria simultaneously.[17]

CONCLUSION

The purpose of this study is to understand the decision-making process in allocation of funds itself and how it can be applied by health officials to influence allocation for NCD control per se. Outcome of this study will include building a framework for an evidence-informed approach for understanding and influencing decentralized health planning. Evidence on burden of NCD and effective interventions for its control should be applied while formulating health sector projects/policy at local level. A thorough understanding of resource allocation process in LSG planning and factors influencing prioritization is needed to devise strategies and approaches for effective engagement of health organizations in decentralized health planning.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Murray CJL, Aravkin AY, Zheng P, Abbafati C, Abbas KM, Abbasi-Kangevari M, et al. Global burden of 87 risk factors in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019. The Lancet. 2020;396(10258):1223-49.
2. Dandona L, Dandona R, Kumar GA, Shukla DK, Paul VK, Balakrishnan K, et al. Nations within a nation: variations in epidemiological transition across the states of India, 1990–2016 in the Global Burden of Disease Study. The Lancet. 2017;390(10111):2437-60.
3. The India State-Level Disease Burden Initiative - Public Health Foundation of India. 2018. Available at: https://phfi.org/the-work/research/the-india-state-level-disease-burden-initiative/. Accessed on 09 May 2024.
4. Sarma PS, Sadanandan R, Thulaseedharan JV, Soman B, Srinivasan K, Varma RP, et al. Prevalence of risk factors of non-communicable diseases in Kerala, India: results of a cross-sectional study. BMJ Open. 2019;9(11):e027880.
5. Heller O, Somerville C, Suggs LS, Lachat S, Piper J, Aya Pastrana N, et al. The process of prioritization of non-communicable diseases in the global health policy arena. Health Policy and Planning. 2019;34(5):370-83.
6. Narain JP. Integrating Services for Noncommunicable Diseases Prevention and Control: Use of Primary Health Care Approach. Indian J Community Med. 2011;36(1):S67-71.
7. Mikkelsen B, Williams J, Rakovac I, Wickramasinghe K, Hennis A, Shin HR, et al. Life course approach to prevention and control of non-communicable diseases. BMJ. 2019;364:l257.
8. Ahmad MS, Talib NBA. Analysis of Community Empowerment on Projects Sustainability: Moderating Role of Sense of Community. Social Indicators Research. 2016;129(3):1039-56.
9. Pati MK, Swaroop N, Kar A, Aggarwal P, Jayanna K, Van Damme W. A narrative review of gaps in the provision of integrated care for noncommunicable diseases in India. Public Health Rev. 2020;41:8.
10. Ohta R, Ryu Y, Kataoka D, Sano C. Effectiveness and Challenges in Local Self-Governance: Multifunctional Autonomy in Japan. Int J Env Res Public Health. 2021;18(2):574.
11. Kumar S, Preetha G. Health Promotion: An Effective Tool for Global Health. Indian J Community Med. 2012;37(1):5-12.
12. Anderson J. Nudge: Improving Decisions about Health, Wealth, and Happiness, Richard H. Thaler and Cass R. Sunstein. Yale University Press, 2008. x + 293 pages. [Paperback edition, Penguin, 2009, 320 pages.]. Economics & Philosophy. 2010;26(3):369-76.

13. Rajesh K, Thomas MB. Decentralization and Interventions in the Health Sector. J Health Management. 2012;14(4):417-33.
14. Wickramasinghe K, Wilkins E, Foster C, Fadhil I, Hammerich A, Slama S, et al. The development of national multisectoral action plans for the prevention and control of noncommunicable diseases: experiences of national-level stakeholders in four countries. Glob Health Action. 2018;11(1):1532632.
15. Thakur JS, Paika R, Singh S. Burden of noncommunicable diseases and implementation challenges of National NCD Programmes in India. Med J Armed Forces India. 2020;76(3):261-7.
16. Ajisegiri WS, Abimbola S, Tesema AG, Odusanya OO, Ojji DB, Peiris D, et al. Aligning policymaking in decentralized health systems: Evaluation of strategies to prevent and control non-communicable diseases in Nigeria. PLOS Glob Public Health. 2021;1(11):e0000050.
17. Baltussen R, Niessen L. Priority setting of health interventions: the need for multi-criteria decision analysis. Cost Effectiveness and Resource Allocation. 2006;4(1):14.
18. Rajesh K, Thomas MB. Decentralization and Interventions in the Health Sector. J Health Management. 2012;14(4):417-33.
19. Varghese J, Durairaj V, Thankappan KR. Local factors influencing resource allocation to health under the Decentralised Planning Process in Kerala. J Health Develop. 2007;1.
20. Budreviciute A, Damiati S, Sabir DK, Onder K, Schuller-Goetzburg P, Plakys G, et al. Management and Prevention Strategies for Non-communicable Diseases (NCDs) and Their Risk Factors. Front Public Health. 2020;8:788.
21. Philip PM, Kannan S, Parambil NA. Community-based interventions for health promotion and disease prevention in noncommunicable diseases: A narrative review. J Educ Health Promot. 2018;7:141.
22. Shukla A, Khanna R, Jadhav N. Using community-based evidence for decentralized health planning: insights from Maharashtra, India. Health Policy and Planning. 2018;33(1):e34-45.
23. Shiffman J, Smith S. Generation of political priority for global health initiatives: a framework and case study of maternal mortality. Lancet. 2007;370(9595):1370-9.
24. Moloughney BWP, Peel (Ont: Regional municipality), Public Health. The use of policy frameworks to understand public health-related public policy processes: a literature review: final report. Mississauga, Ont.: Peel Public Health. 2013. Available at: https://www.deslibris.ca/ID/237675. Accessed on 08 May 2024.
25. Zahariadis N. The Multiple Streams Framework: Structure, Limitations, Prospects. In: Theories of the Policy Process. Routledge; 2007.
26. De Wals P, Espinoza-Moya ME, Béland D. Kingdon's Multiple Streams Framework and the Analysis of Decision-Making Processes Regarding Publicly-Funded Immunization Programs. Expert Rev Vaccines. 2019;18(6):575-85.
27. Sabatier PA. Theories of the Policy Process. New York: Routledge. 2019;352.
28. Kingdon J. Agendas, Alternatives, and Public Policies, Update Edition, with an Epilogue on Health Care (Longman Classics in Political Science). 2nd Edition. Pearson; 2010.
29. Varghese J, Varatharajan D, Thankappan KR. Local Factors Influencing Resource Allocation To Health Under The Decentralized Planning Process In Kerala, India. 2007;3(1):10.
30. Walt G, Shiffman J, Schneider H, Murray SF, Brugha R, Gilson L. 'Doing' health policy analysis: methodological and conceptual reflections and challenges. Health Policy Plan. 2008;23(5):308-17.
31. World Health Organization, Gilson L, Orgill M, Shroff ZC. A health policy analysis reader: the politics of policy change in low- and middle-income countries. 2018. Available at: https://apps.who.int/iris/handle/10665/310886. Accessed on 08 May 2024.
32. Gilson L, Shroff ZC, Shung-King M. Introduction to the Special Issue on "Analysing the Politics of Health Policy Change in Low- and Middle-Income Countries: The HPA Fellowship Programme 2017-2019." Int J Health Policy Manag. 2021;1.
33. Shawar YR, Crane LG. Generating global political priority for urban health: the role of the urban health epistemic community. Health Policy Plan. 2017;32(8):1161-73.
34. Wiseman VL. Inclusiveness in the value base for health care resource allocation. Soc Sci Med. 2014;108:252-6.
35. Mooney G. Communitarian claims and community capabilities: furthering priority setting? Soc Sci Med. 2005;60(2):247-55.
36. Williams I, Phillips D, Nicholson C, Shearer H. Evaluation of a deliberative approach to citizen involvement in health care priority setting. Leadership in Health Services. 2014;27(1):5-19.

Cite this article as: Sujatha C, Kannan S. Decentralized planning for non-communicable diseases: protocol for an explanatory study of local self-government projects in Kerala, India. Int J Community Med Public Health 2024;11:4043-9.

ABSTRACTS OF PAPERS PRESENTED IN CONFERENCES

Impact of pandemic on budgetary allocation for health projects: A study of local bodies of Kerala, India.

Authors: Dr Chintha Sujatha (PhD Scholar), Dr Srinivasan Kannan (Professor) Achutha Menon Centre for Health Science Studies of the Sree Chitra Tirunal Institute of Medical Sciences and Technology, Trivandrum.

A crisis such as COVID-19 posed challenges to health care delivery by local bodies in Kerala. Local self-governments have the mandate of delivering essential public health services like immunization, maternal and child health, palliative services and other primary care services, which often is the only source of such services for marginalised sections. The pandemic forced the local bodies to reallocate resources from routine services to covid management. The present study aims to explore the impact of pandemic on public health priority setting at local level. Data were collected from the state level repositories of fund allocation information for the local self-government institutions for the state of Kerala. Allocation of funds for the health sector projects during 2019-20 and 2021-22 were extracted for 90 Village level local bodies, selected randomly from three districts of Kerala. Difference in proportion of fund allocation for the two study periods were compared. Among the 90 grama panchayaths studied, almost all, 89 (98.89%) had at least one covid related project, with 27% of total health budget allocated for covid related activities. There was decline during pandemic period, in percentage of allocation for maternal and child health (0.46 vs 1.15), palliative services (13.96 vs 21.75), hospital services (38.42 vs 49.79), quality
improvement (0.30 vs 1.05), tribal health (0.10 vs 0.20) and subcentre activities (2.28 vs 3.83). Higher allocation for crisis management has adversely affected tribal health, palliative services, maternal and child health and primary care. This clearly highlights the impact of pandemic on the marginalised and vulnerable communities such as tribal, elderly, and children.

Word count: 257

Key words: pandemic: local bodies; prioritization; kerala; marginalized communities.

Factors associated with priority setting: Budget allocation for non-communicable diseases in local bodies of Kerala, India.

Authors: Dr Chintha Sujatha (PhD Scholar), Dr Srinivasan Kannan (Professor), Achutha Menon Centre for Health Science Studies of the Sree Chitra Tirunal Institute of Medical Sciences and Technology, Trivandrum.

There is a high burden of non-communicable diseases (NCD) in Kerala. Priority setting for resource allocation in local health planning need to be evidence driven and aligned with the burden of disease, and local context. But often, decisions are taken based on political influences, following

previous practices, ‘gut feelings’, or ease of implementation. Present study aims to study the factors associated with budget allocation for NCD projects in local bodies of Kerala, India. Allocation of funds for the health sector projects, of year 2021-22, were extracted from state level repositoriesfor 90 village level local bodies, selected randomly from three districts of Kerala. Data on resource allocation processes were collected through interviews and document analysis. We compared local bodies with high and low budget allocation for NCD projects. Among the 90 local bodies studied, only 54 (60%) had at least one NCD project. Amount allocated for NCD projects was 4.04% of total allocation for health. There were 35 (38.9%) local bodies with high allocation for NCD and 55 (61.1%) had low allocation. Factors associated with higher allocation for NCD projects were practices of considering health status report for prioritization (65.7% vs 34.3%, p<0.001), considering best practices/ evidence (85.7% vs 14.3%, p=0.008), following local agenda (51.1% vs 48.9%, p=0.017), and active participation in planning meetings (53.3% vs 46.7%, p = 0.047). Negative influences were political pressure for tangible outputs (20.8% vs 79.2%, p<0.001) and following previous years pattern for budget allocation (29.1% vs 70.9 %, p = 0.017). Priority setting in resource allocation can be optimized by decision making based on evidence and local context. In reality, priority setting is not only based on evidences, the need of community and burden of diseases, but also influenced by political pressure and conventional choices, gut feelings and incremental allocation.

Word counts: 297

Keywords: priority setting; budget allocation; local bodies; non-communicable diseases; kerala

Title: Budgetary allocation for health sector projects in Local bodies of Thiruvananthapuram: Specific reference to community level interventions for NCD control

First author: Dr Chintha S Co-authors: Dr Srinivasan K

Institution: AMCHSS, Sree Chitra Tirunal Institute for Medical Sciences and Technology

Introduction: Health systems cannot easily address behavioural and environmental risk factors for Non communicable diseases (NCD) control directly. NCD is one area which needs sustainable community level interventions for its control. Role of Local self government (LSG) bodies in implementing such NCD related projects need to be emphasized. Priority setting in decentralized planning shoud be evidence based.

Objective: To analyse the pattern of budgetary allocation for health sector projects at different levels of LSGs in Thiruvananthapuram with specific reference to community interventions for Non Communicable disease (NCD) control

Methods: Secondary data analysis was done on Economic review reports and report on health sector projects obtained from LSG department with permission. Pattern of budgetary allocation of health projects in both urban and rural local bodies of Thiruvananthapuram district for 2019- 20 was studied.

Results: Among the total funds for LSG plan, 55% was for service sector, out of which only 6% is for health sector. Proportion of NCD related projects in terms of number and budget allocation respectively among health sector projects for Grama Panchayaths were 47 projects (5.25%) and 63.19 lakhs (1.8%). Figures for block panchayaths were 13 (9%) and 98.10 lakhs

(10.94%), for district panchayath, 1(0.9%) and 48 lakhs (3%), for municipalities 1 (1.6%) and

4.66 lakhs (1.2%) and for corporation were 1 (1.4%) and 3 lakhs (0.16%). Only 29 (40%) Grama Panchayaths and 5 (45%) Block Panchayaths had at least one NCD project. The single NCD project of District panchayath was for a dialysis unit at Taluk hospital. Cancer screening, mental health programme, diabetic foot clinic and health education were the NCD projects at block level. At Grama panchayath level 21% projects were community-based interventions, 15% projects were for cancer screening, mental health and hospital based NCD clinics each. **Conclusion:** Need to make decentralized planning evidence based and realign priorities towards prevention of risk factors and morbidity related to noncommunicable diseases.

Title: Evaluation methods for Non Communicable Diseases (NCD) control programmes in low resource settings; A systematic review

First author: Dr Chintha S Co-author: Dr Srinivasan K
Institution: AMCHSS, Sree Chitra Tirunal Institute for Medical Sciences and Technology

Introduction: In order to track our progress in preventing and controlling non-communicable diseases (NCD) and their key risk factors, and to improve NCD control programs, evidence generated through effective evaluation methods are needed. A critical review of methods and indicators used will help in assessment of its adequacy, and to devise newer evaluation methods.

Objective: To describe the methods and indicators used in evaluation of NCD control programmes and strategies in low resource settings.

Methods: A Systematic review was done among original research papers reporting evaluation of non- communicable diseases control programmes and strategies in low resource settings. Searches were performed for all papers published up to August 2021 in relevant databases (PubMed, Scopus and Google Scholar). Primary terms "evaluation' and 'NCD control' were used in combination with other terms. Data extraction tables were used. Context of interest were national, state and district level programs, hospitals, primary health centers, and community settings. Evaluation Methods were classified using a framework to guide the analysis of methods and indicators used.

Results: A total of 1030 papers were obtained with the search terms, of which 95 abstracts were selected for screening. Thirty Studies met inclusion criteria. Majority papers (16,56%) were on case management/ NCD clinics. Ten papers (33%) were on community-based lifestyle interventions of which two papers were on cycling as an

intervention and two school-based programs. Only four papers (13%) were on policy and legislation. Outcome evaluation done for 18 papers and four papers had process evaluation. RCT was used in 4 (21%) papers.

Conclusion: Application of appropriate evaluation methods and indicators, will generate accurate evidence for improving NCD control programs.

Abstract for paper presentation at National Clinical Epidemiologist's meet organised by KUHS on September 2022 at Government Medical college, Thiruvananthapuram.

Title: Budgetary allocation for COVID-19 related projects in Local bodies of Thiruvananthapuram and its impact on allocation for non-Communicable diseases control.

Authors: Dr Chintha S (PhD Scholar), Dr Srinivasan K (Professor) AMCHSS, SCTIMST, TVPM

Background: COVID 19 pandemic has burdened health system at all levels. The change in priorities, to meet this crisis has affected the already meagre resource allocation for Non communicable diseases control. This is particularly important at the level of local bodies, which has borne the major brunt of this disaster.

Objective: To analyse the pattern of budgetary allocation for COVID-19 related projects at local bodies in Thiruvananthapuram district and its impact on allocation for non-communicable diseases (NCD) control.

Methods: Secondary data analysis was done on report of health sector projects obtained from LSG department with permission. Pattern of budgetary allocation for COVID-19-related projects in Grama panchayaths of Thiruvananthapuram district for 2021-22 was studied. For studying its impact on budget allocation for NCD, comparison of allocation pattern between 2019-20 and 2021-22 was done. Wilcoxon signed ranks test was used for comparative analysis. $P<0.05$ was considered significant

Results: Among the 73 grama panchayaths studied, 69 (94.5%) had at least one COVID-19 related project. Out of the total 1094 health projects, 199 (18.2%) were COVID projects. A total of Rs 5627.94 lakhs was allocated for health projects, of which Rs 1575.39 lakhs (30%) was for COVID-19 related projects. There is an increase in allocation for health projects when compared with Rs 3433 lakhs for 895 health projects of 2019-20. Mean allocation in lakhs for health projects by each of the grama panchayaths during the pandemic was 82.07(33.34), which was significantly higher ($P<0.001$) than for the pre-covid period, 50.44 (27.09). Mean allocation in lakhs for NCD projects was 2.21(3.45) in the pre-covid period which decreased to 0.02 (89442) during the pandemic. Mean no of NCD projects per grama panchayath decreased from 1.10(1.21) to 0.60(0.68) during the pandemic.

Conclusion: COVID-19 has increased significantly, budgetary allocation for health projects at grama panchayaths. During the pandemic, resource allocation for NCD control programs at community level has further decreased. We should devise means by which we can maintain our priority for controlling the epidemic of NCD amidst future similar disasters.

A4

श्री चित्रा तिरुनाल आयुर्विज्ञान और प्रौद्योगिकी संस्थान, त्रिवेन्द्रम
तिरुवनन्तपुरम - ६९५०११, केरल, इंडिया
SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES AND TECHNOLOGY, TRIVANDRUM
Thiruvananthapuram - 695 011, Kerala, India
(An Institute of National Importance under Govt. of India)
Grams : Chitramet, Phone : +91-471-2443152, Fax : +91-471-2550728 / 2446433, E-mail : sct@sctimst.ac.in, Website : www.sctimst.ac.in

Institutional Ethics Committee

(IEC Regn No. ECR/189/Inst/KL/2013/RR-21)

SCT/IEC/1849/FEBRUARY/ 2022 18.03.2022

Dr. Chintha S
PhD Scholar, AMCHSS
SCTIMST, Thiruvananthapuram

Dear Dr. Chintha,

The Institutional Ethics Committee held on 19th February, 2022, reviewed and discussed your application to conduct the study titled "**DECENTRALIZED PLANNING FOR NON-COMMUNICABLE DISEASES IN KERALA**" (IEC/1849).

The following members of the Ethics Committee were present at the meeting held on 19th February, 2022

SL. No.	Member Name	Highest Degree	Gender	Scientific /Non Scientific	Affiliation with Institution(s)
1.	Prof. C.C. Kartha	MBBS,MD	Male	Basic Medical Scientist (Chairman)	No
2.	Dr. Kala Kesavan P	MBBS,MD	Female	Basic Medical Scientist	No
3.	Smt. Sathi Nair	MA (English Literature)	Female	Lay Person	No
4.	Dr. Pradeep S	MBBS, MD	Male	Basic Medical Scientist	No
5.	Dr. P. Manickam	BSMS, MSc (Epid).,PhD	Male	Health Science Expert/ Social Scientist	No
6.	Dr. Christina George	MD Psychiatry	Female	Clinician	No
7.	Adv. N Anand	BAL, L.LB	Male	Legal Expert	No
8.	Adv. Priya Kaimal	LLM, MBL	Female	Legal Expert	No
9.	Dr. Harikrishna Varma PR	Ph.D (Materials Science)	Male	Medical Technology	Yes
10.	Dr. Narayanan Namboodiri. K K	MBBS,MD,DM	Male	Clinician	Yes
11.	Dr. Ashalatha R	MBBS, MD,DM	Female	Clinician	Yes
12.	Dr. Biju Soman	MBBS,MD, DPH, MSc, DLSHTM	Male	Basic Medical Scientist	Yes
13.	Dr. Srinivas G	PhD	Male	Basic Medical Scientist (Member Secretary)	Yes

The following documents were reviewed:

Original submission

1. Covering letter addressed to the Chairperson, IEC, SCTIMST dated 18.12.2021
2. Covering letter addressed to the Chairperson, IEC, SCTIMST dated 18.12.2021 forwarded by HOD
3. Checklist Form
4. Declaration form
5. CV of PI and Co-PI
6. IEC Application form
7. Project Proposal
8. Proforma
9. Informed Consent Form in English and Malayalam
10. Letter from Local Self Government (IB) Department, Government of Kerala dated 10.09.2021
11. Letter from office of the Director of Urban Affairs, Thiruvananthapuram dated 22.09.2021
12. Letter from office of the Panchayath Director, Thiruvananthapuram dated 22.09.2021
13. SRC Recommendation Letter

Revised submission

1. Covering letter addressed to the Member Secretary, IEC, SCTIMST dated 18.03.2022
2. Copy of Identity Card
3. Covering letter addressed to the Chairperson, IEC, SCTIMST dated 18.12.2021
4. Covering letter addressed to the Chairperson, IEC, SCTIMST dated 18.12.2021 forwarded by HOD
5. Checklist Form
6. Declaration form
7. CV of PI and Co-PI
8. IEC Application form
9. Project Proposal
10. Proforma
11. Informed Consent Form in English and Malayalam
12. Letter from Local Self Government (IB) Department, Government of Kerala dated 10.09.2021
13. Letter from office of the Director of Urban Affairs, Thiruvananthapuram dated 22.09.2021
14. Letter from office of the Panchayath Director, Thiruvananthapuram dated 22.09.2021

IEC Decision

The IEC approved the conduct of the study in the present form.

Remarks:
The Institutional Ethics Committee expects to be informed about the progress of the study, any SAE occurring in the course of the study, any changes in the protocol and patient information/informed consent and asks to be provided a copy of the final report.

There was no member of the study team who participated in voting / decision making process. The ethics committee is organized and operated according to the requirements of Good Clinical Practice and the requirements of the Indian Council of Medical Research (ICMR).

Sincerely,

Dr. G. Srinivas
Member Secretary, IEC

MEMBER SECRETARY
INSTITUTIONAL ETHICS COMMITTEE (IEC)
SCTIMST, THIRUVANANTHAPURAM

A5

PROFORMA FOR DATA COLLECTION

1. Profile of LSG

A. Basic information

1.Name of LSG:	**2.Level:**	**3.District/Taluk/Block:**
4.Population:	5.Area:	6.Density of populn:
7.Special status, if any:	8.No of wards/ division:	9.Average populn of ward:

B.Composition of LSG	**Last term**	**Current term**
1. Political party in power		
2. Ratio of representation of each party		
3. Gender ratio among members		
C.Profile of President of LSG		
1. Name		
2. Age		
3. Gender		
4. Education		
5. Occupation		
6. Political Experience in years		
7. Experience in years as elected member		
8. Family members in politics		
D. Funds for plan projects		
1. Total allocation		

2. Sector wise allocation ratio		
3. Sector wise utilisation		

2. Data extraction form for Document analysis

Document Particulars	Last term term			Current
	Year 3	Year 4	Year 5	Year 1
A.Minutes of Grama/ward sabha (Random ward)				
1. Document present or not				
2. Conducted on time				
3. No of meetings held				
4. Average no of participants				
5. Average number of female participants				
6. Average number of youth				
7. Adequacy of participation (perentage)				
8. Participation of implementing officials				
9. Participation of health officials				
10. Participation of experts				
11. Category of experts				
12. Block panchayath proposals discussed or not				

13. Total No of issues/topic raised				
14. No of health related topics raised				
15. No of NCD related topics				
16. Any CBI on NCD suggested				
17. Specify areas of health related suggestions				
18. E gramasbha conducted				
B.Development report				
1. Document present or not				
2. Adequate representation of health topics				
3. Health status report present				
C. Minutes of Vikasana (Development) seminar				
1. Document present or not				
2. Conducted on time				
3. Adequate participation				
4. Ratio of experts to non experts				
5. Participation of experts				
6. Participation of Government officers				

from institutions under the LSG				
D.Minutes of working group on health				
1. Document present or not				
2. No of meetings				
3. Participants				
4. Ratio of experts to non experts				
5. Experts				
6. MO/ staff from PHC				
7. No of members trained in project planning				
8. Health status report discussed or not				
9. Total no of ideas thrown up				
10. Specify areas				
11. No of NCD related ideas				
12. Any CBI for NCD				
13. Specify ideas on NCD				
14. No of Projects formulated				
15. Specify projects				
16. No of NCD related projects				
17. Any CBI on NCD				
18. Specify NCD related projects				

19. Factors influencing selection of projects				
20. Method used for prioritizing				
21. Project Appraisal				
22. Any form of economic analysis like CEA or CBA used				
23. Factors influencing selection of NCD projects				
24. Factors influencing Non selection of NCD projects				
E. District planning committee report				
1. No of health projects approved by DPC				
2. Specify approved projects				
3. No of NCD projects approved				
4. Specify NCD projects				
5. Any CBI on NCD				
6. Factors influencing project approval				
7. No of NCD projects rejected				
8. Reason for rejection				
9. Average time taken for approval of projects				

3. **Interview guide of stakeholders for details on budget allocation process** (officials of LSG, health standing committee chairperson, other elected representatives, health officials, Grama sabha members, DPC members; atleast one person from each category to be interviewed)

A. Grama sabha/ward sabha meetings

1. On time
2. Participation of people
3. Gender representation
4. Representation of all age and socioeconomic categories
5. Participation of youth
6. Participation of experts
7. Topics discussed
8. Health related ideas
9. NCD related ideas
10. Virtual meetings(E Gramasabha)

B. Development report

1. Is it modified and updated
2. Usefulness in prioritization
3. Are the concerns and ideas in DR adequately addressed by the working group and reflected in the final approved projects?

C. Vikasana seminar

1. Health status reports
2. Participation
3. Participation of Experts
4. Participation of officials
5. Ideas discussed on health

D. Health working group

1. Composition
2. Training of members
3. Expertise of members
4. Adequacy

5. Health status report discussion
6. Ideas discussed
7. Ideas on NCD
8. Factors influencing prioritization
9. Methods used for priority setting
10. Appraisal of projects

A6

4. DATA EXTRACTION FORM FOR SECONDARY DATA ANALYSIS

Project particulars	Last term			Current term
	3	4	5	1
Total Budget (Rs)				
Service sector budget				
Health sector budget				
Total no of projects				
No of health projects				
No of projects in modern medicine system (Amount)				
No of projects in Ayurveda (Amount)				
No of projects in homeopathy (Amount)				
No of communicable disease control projects (Amount)				
No of projects on Infrastructure development (Amount)				
No of projects on purchase of equipments (Amount)				
No and amount for purchase of medicines				
No and amount for purchase of NCD medicines				

No and amount for Human Resources				
No and amount for NCD screening camps				
No and amount for medical camps				
No and amount for NCD clinics and camps				
No and amount for projects on diet modification				
No and amount for projects on physical activity				
No and amount for projects on control of substance abuse				
No and amount for cancer screening camps				
No and amount for projects for creating NCD awareness				
Community based NCD projects; NO/ Amount/ Name				
Other innovative projects				
Specify projects				
No and amount of non health sector projects related with NCD control				
Specify such non health sector projects				

A7

INFORMED CONSENT FORM

Participant Information Sheet

I am Dr Chintha S, PhD Scholar at Achutha Menon Centre for Health Science Studies (AMCHSS), Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum. Inviting you to participate in my research titled "Decentralised planning for Non Communicable diseases in Kerala" which is being my PhD research work done with the supervision of Prof. Srinivasan Kannan, at our institute.

Purpose of the study:

Local self government (LSG) institutions play an important role in community based interventions on Non-communicable disease (NCD) control in addition to the support given to public health institutions on different domains. Kerala is a pioneer in decentralised planning, in which the LSG institutions implement projects on various aspects. The purpose of this research is to study the pattern of resource allocation and the process of decision making in decentralized health planning. This will ultimately suggest the patterns related to the NCD initiatives in terms of the type of projects, the distribution of funds under different heads, and the gap between the NCD burden and the initiatives if any.

The study is designed with the following objectives:

- To analyse the pattern of budgetary allocation of health sector projects with specific reference to non-communicable diseases at different levels of Local self government (LSG) bodies in Kerala during 2017-2021.
- To analyse the pattern of utilisation of health sector projects with specific reference to non-communicable diseases at different levels of LSG bodies in Kerala during 2017- 2021.
- To study the allocation processes and stakeholders in health sector planning of LSG bodies in Kerala

Three districts of Kerala are randomly drawn for studying the role of LSG institutions on NCD initiatives. The Department of Local Self Government, Government of Kerala has kindly agreed to this study. The researcher will visit the Rural and Urban LSG institutions. For the purpose of understanding the financial and other resource allocation on NCD, the researcher will require to access documents that are used for LSG project planning. In addition, the elected representatives, officials in the Government and members of planning committee at the local will also be interviewed. Based on your involvement in the decentralized planning and using the random selection procedure you are selected for the interview. The information you provide will be useful in analyzing the resource allocation process on NCD.

Procedure: The interview will take approximately 15-20 minutes of your valuable time. You will be asked questions related to planning of health sector projects in your LSG with specific reference to NCD. The collected data will be used for research purpose only.

Risk and discomfort:

Participating in this study imposes no risk to your health. However, some questions could be personal in nature.

Benefits:

There may not be any direct benefit for you by participating in this study; however, from a public health perspective, the information provided by you will be of great importance in understanding the decision making process on resource allocation for decentralized health planning with specific reference to NCD. The findings of the present study may help in appropriate policy formulation in decentralized planning.

Confidentiality:

Utmost priority will be given to protect the privacy and confidentiality of your personal information. The collected information will not be shared with anyone. Your identity will be kept anonymous. An identification number will be assigned to each of the participant. All hard copies of filled interview schedules and consent forms will be kept under the custody of principal investigator under lock and key.

Voluntary Participation:

Your participation in this study is purely voluntary and you have the right to withdraw your participation at any time during the interview without any explanation. If wish to not answer some questions you may do so. Refusal to participate will not involve any penalty or loss of benefits to which you are otherwise entitled. If you have additional questions about this study you may contact the names and addresses mentioned below. For any clarification you may contact, Dr. Srinivas G, Member Secretary, Institutional Ethics Committee, SCTIMST, (email iec.mem.sec@sctimst.ac.in).

Researcher's contact details:

Name: Dr. Chintha S
Address: PhD Scholar, AMCHSS,
SCTIMST, Trivandrum. Mobile
number:9447375532
Email Address: chintha@sctimst.ac.in

A8
CONSENT STATEMENT

Participant Unique Identification (UID) Number: (Name)
I have read the details of the information sheet. The nature of the study and my involvement has been explained and all my questions regarding the study have been answered satisfactory. By signing on this consent form, I indicate that I understand what will be expected from me and that I am willing to participate in this study. I have also been informed about the contact information if I need any clarification. I am also aware that my participation is voluntary and I am free to withdraw my participation at any time during the interview without any explanation. Name and Address of the participant:

Signature of Participant:
Signature of Investigator:
Date:

A9

സമ്മതപത്രം

പങ്കെടുക്കുന്നവർക്കുള്ള വിവരങ്ങൾ:

ഞാൻ ഡോ. ചിന്ത എസ്, തിരുവനന്തപുരത്തെ ശ്രീചിത്ര തിരുനാൾ ഇൻസ്റ്റിറ്റ്യൂട്ട് ഫോർ മെഡിക്കൽ സയൻസസ് ആൻഡ് ടെക്നോളജിയിലെ അച്യുതമേനോൻ സെന്റർ ഫോർ ഹെൽത്ത് സയൻസ് സ്റ്റഡീസിലെ (എഎംസിഎച്ച്എസ്എസ്) പിഎച്ച്ഡി സ്കോളറാണ്. DRശ്രീനിവാസൻ കണ്ണൻ, പ്രൊഫസർ, എഎംസിഎച്ച്എസ്എസ്.ന്റെ മേൽനോട്ടത്തിൽ എന്റെ പിഎച്ച്ഡിയുടെ ഭാഗമായി നടക്കുന്ന "കേരളത്തിലെ സാംക്രമികേതര രോഗങ്ങൾക്കുള്ള വികേന്ദ്രീകൃത ആസൂത്രണം" ("Decentralised planning for Non Communicable diseases in Kerala")എന്ന എന്റെ ഗവേഷണത്തിൽ പങ്കെടുക്കാൻ ഞാൻ നിങ്ങളെ ക്ഷണിക്കുന്നു.

പഠനത്തിന്റെ ഉദ്ദേശം:

കേരളത്തിൽ സാംക്രമികേതര രോഗങ്ങൾ (എൻസിഡി) കൂടുതലാണ്. ആരോഗ്യകരമായ ഭക്ഷണക്രമവും വ്യായാമങ്ങളോടും കൂടി സ്വീകരിക്കുന്ന ജീവിതശൈലി മെച്ചപ്പെടുത്തൽ, പുകയില നിയന്ത്രണം, എൻസിഡി സ്ക്രീനിംഗ്, ആരോഗ്യകരമായചുറ്റുപ്പാടു തുടങ്ങിയ പ്രധാന പ്രതിരോധ തന്ത്രങ്ങൾ ഇന്റർസെക്റ്ററൽകോ-ഓർഡിനേഷനിലൂടെയും കമ്മ്യൂണിറ്റി പങ്കാളിത്തത്തിലൂടെയും മാത്രമേ നടപ്പിലാക്കാൻ കഴിയൂ. കമ്മ്യൂണിറ്റി തലത്തിലുള്ള എൻസിഡി നിയന്ത്രണ പരിപാടികൾ ആരംഭിക്കുന്നതിലും നടപ്പിലാക്കുന്നതിലും അതുപോലെ സ്ക്രീനിംഗ്, ട്രീറ്റ്മെന്റ് സേവനങ്ങളിൽ പൊതുജനാരോഗ്യസ്ഥാപനങ്ങളെ പിന്തുണയ്ക്കുന്നതിലും തദ്ദേശ സ്വയംഭരണ സ്ഥാപനങ്ങൾക്ക് നിർണായക പങ്കുണ്ട്. വികേന്ദ്രീകൃത ആസൂത്രണം ഫലപ്രദമായി നടപ്പാക്കുന്നതിന് കേരളം പ്രസിദ്ധമാണ്. ആരോഗ്യം ഒരു പ്രധാന മേഖലയായ എല്ലാ മേഖലകളെയും ഉൾക്കൊള്ളുന്ന വികസന പദ്ധതികൾ തദ്ദേശ സ്ഥാപനങ്ങൾ വർഷം തോറും നടപ്പിലാക്കുന്നു. ബജറ്റ് വിഹിതത്തിന്റെ പാറ്റേൺ വിശകലനം ചെയ്യുകയും വികേന്ദ്രീകൃത ആരോഗ്യ ആസൂത്രണത്തിൽ ഫണ്ട് അനുവദിക്കുന്നതിലെ തീരുമാനമെടുക്കൽ പ്രക്രിയയും എൻസിഡി നിയന്ത്രണത്തിനായുള്ള വിഹിതത്തെ സ്വാധീനിക്കാൻ അത് എങ്ങനെ പ്രയോഗിക്കാമെന്നും മനസ്സിലാക്കുക എന്നതാണ് ഈ പഠനത്തിന്റെ ലക്ഷ്യം.

ഇനിപ്പറയുന്ന ലക്ഷ്യങ്ങളോടെയാണ് പഠനം രൂപകൽപ്പന ചെയ്തിരിക്കുന്നത്:

- 2017-2021 കാലയളവിൽ കേരളത്തിലെ തദ്ദേശ സ്വയംഭരണ സ്ഥാപനങ്ങളുടെ (LSG) വിവിധ തലങ്ങളിൽ സാംക്രമികേതര രോഗങ്ങളെ പ്രത്യേകമായി പരാമർശിച്ചുകൊണ്ട് ആരോഗ്യ മേഖലയിലെ പദ്ധതികളുടെ ബജറ്റ് വിഹിതത്തിന്റെ രീതി വിശകലനം ചെയ്യുക.

• 2017-2021 കാലയളവിൽ കേരളത്തിലെ എൽഎസ്ജി ബോഡികളുടെ വിവിധ തലങ്ങളിൽ സാംക്രമികേതര രോഗങ്ങളെ പ്രത്യേകമായി പരാമർശിച്ച് ആരോഗ്യ മേഖലയിലെ പദ്ധതികളുടെ വിനിയോഗ രീതി വിശകലനം ചെയ്യുക.

• കേരളത്തിലെ LSG ബോഡികളുടെ ആരോഗ്യ മേഖലാ ആസൂത്രണത്തിലെ അലോക്കേഷൻ പ്രക്രിയകളും പങ്കാളികളെയും പഠിക്കുക

കേരളത്തിലെ തിരഞ്ഞെടുത്ത മൂന്ന് ജില്ലകളിലെ തദ്ദേശസ്ഥാപനങ്ങളിലാണ് പഠനം നടക്കുന്നത്. എൽ.എസ്.ജി വകുപ്പിൽ നിന്ന് അനുമതി ലഭിച്ചു. എല്ലാ തലങ്ങളിലുമുള്ള ഗ്രാമ, നഗര തദ്ദേശ സ്ഥാപനങ്ങൾ അന്വേഷകൻ സന്ദർശിക്കും. LSG പ്രോജക്റ്റ് ആസൂത്രണവുമായി ബന്ധപ്പെട്ട രേഖകൾപരിശോധിക്കുകയും വിശകലനം ചെയ്യുകയും ചെയ്യും. തിരഞ്ഞെടുക്കപ്പെട്ട ജനപ്രതിനിധികൾ, സർക്കാർ ഉദ്യോഗസ്ഥർ, ആസൂത്രണ സമിതി അംഗങ്ങൾ എന്നിവരുടെ അഭിമുഖം നടത്തും. നിങ്ങൾ വികേന്ദ്രീകൃത ആസൂത്രണ പ്രക്രിയയിൽ ഏർപ്പെട്ടിരിക്കുന്നതിനാൽ ഈ പഠനത്തിൽ പങ്കെടുക്കുന്നതിന് നിങ്ങളെ തിരഞ്ഞെടുത്തു. നിങ്ങൾ നൽകുന്ന വിവരങ്ങൾ ഈ ഗവേഷണത്തിന് വിലപ്പെട്ട ഇൻപുട്ടായിരിക്കും.

നടപടിക്രമം: അഭിമുഖത്തിന് നിങ്ങളുടെ വിലപ്പെട്ട സമയത്തിന്റെ ഏകദേശം 15-20 മിനിറ്റ് എടുക്കും. NCD-യെ പ്രത്യേകമായി പരാമർശിച്ചുകൊണ്ട് നിങ്ങളുടെ LSG-യിൽ ആരോഗ്യമേഖലയിലെ പദ്ധതികൾ ആസൂത്രണം ചെയ്യുന്നതുമായി ബന്ധപ്പെട്ട ചോദ്യങ്ങൾ നിങ്ങളോട് ചോദിക്കും. ശേഖരിക്കുന്ന വിവരങ്ങൾ ഗവേഷണ ആവശ്യങ്ങൾക്കായി മാത്രം ഉപയോഗിക്കും.

പഠനത്തിൽ പങ്കെടുക്കുന്നതിൽ നിന്നുണ്ടാകാൻ സാധ്യതയുള്ള ബുദ്ധിമുട്ടുകൾ:

ഈ പഠനത്തിൽ പങ്കെടുക്കുന്നതുമൂലം പ്രത്യേകിച്ചു നഷ്ടങ്ങളോ ബുദ്ധിമുട്ടുകളോ നിങ്ങള്ക്ക് ഉണ്ടാകാനിടയില്ല.എന്നിരുന്നാലും, ചില ചോദ്യങ്ങൾ വ്യക്തിപരമാകാം.

പ്രയോജനങ്ങൾ:

ഈ പഠനത്തിൽ നിന്ന് നിങ്ങൾക്ക് നേരിട്ട് പ്രയോജനമൊന്നും ഉണ്ടായേക്കില്ല, എന്നാൽ പൊതുജനാരോഗ്യ വീക്ഷണകോണിൽ നിന്ന്, വികേന്ദ്രീകൃത ആരോഗ്യ ആസൂത്രണത്തിൽ ഫണ്ട് അനുവദിക്കുന്നതിലെ തീരുമാനമെടുക്കുന്ന പ്രക്രിയയും,സ്വാധീന ഘടകങ്ങളും, അത് എങ്ങനെ പ്രയോഗിക്കാമെന്നും മനസ്സിലാക്കുന്നതിൽ നിങ്ങൾ നൽകുന്ന വിവരങ്ങൾക്ക് വലിയ പ്രാധാന്യമുണ്ട്.ആരോഗ്യത്തിന് പൊതുവായും എൻസിഡിക്ക് പ്രത്യേകമായും വികേന്ദ്രീകൃത ആസൂത്രണം മെച്ചപ്പെടുത്തുന്നതിന്

ഉചിതമായ നയങ്ങളും തന്ത്രങ്ങളും രൂപപ്പെടുത്തുന്നതിന് ഇത് സംഭാവന ചെയ്തേക്കാം.

രഹസ്യാത്മകത:

നിങ്ങൾ നൽകുന്നവിവരങ്ങളുടെ സ്വകാര്യതയും രഹസ്യാത്മകതയും സംരക്ഷിക്കുന്നതിന് ഏറ്റവും മുൻഗണന നൽകും. ശേഖരിച്ച വിവരങ്ങൾ പഠനത്തിൽ ഉൾപ്പെടാത്ത ആരുമായും പങ്കിടില്ല, റിപ്പോർട്ടിംഗ് മൊത്തത്തിലുള്ള രൂപത്തിൽ മാത്രമേ നടത്തൂ. ഒരു ഘട്ടത്തിലും നിങ്ങളുടെ ഐഡന്റിറ്റി വെളിപ്പെടുത്തില്ല, ഇതിനായി ഒരുതിരിച്ചറിയൽ നമ്പർ നിങ്ങൾക്ക് നൽകും. പൂരിപ്പിച്ച അഭിമുഖ ഷെഡ്യൂളുകളുടെയും സമ്മത ഫോമുകളുടെയും എല്ലാ ഹാർഡ് കോപ്പികളും പ്രിൻസിപ്പൽ ഇൻവെസ്റ്റിഗേറ്ററുടെ കസ്റ്റഡിയിൽ സൂക്ഷിക്കും.

സന്നദ്ധ പങ്കാളിത്തം:

ഈ പഠനത്തിലെ നിങ്ങളുടെ പങ്കാളിത്തം സ്വമേധയാ ഉള്ളതാണ്, കൂടാതെ അഭിമുഖത്തിനിടെ എപ്പോൾ വേണമെങ്കിലും വിശദീകരണമില്ലാതെ നിങ്ങളുടെ പങ്കാളിത്തം പിൻവലിക്കാനുള്ള അവകാശം നിങ്ങൾക്കുണ്ട്. പങ്കെടുക്കാൻ വിസമ്മതിച്ചാൽ നിങ്ങൾക്ക് മറ്റ് വിധത്തിൽ അർഹതപ്പെട്ട ആനുകൂല്യങ്ങളുടെ പിഴയോ നഷ്ടമോ ഉൾപ്പെടില്ല. ഈ പഠനത്തെക്കുറിച്ച് നിങ്ങൾക്ക് കൂടുതൽ ചോദ്യങ്ങളുണ്ടെങ്കിൽ, നിങ്ങൾക്ക് എന്നെ ബന്ധപ്പെടാവുന്നതാണ്. ആവശ്യമെങ്കിൽ കൂടുതൽ വ്യക്തതകൾക്കായി, നിങ്ങൾക്ക് ഡോ. ശ്രീനിവാസ് ജി, മെമ്പർ സെക്രട്ടറി, ഇൻസ്റ്റിറ്റ്യൂഷണൽ എത്തിക്സ് കമ്മിറ്റി, SCTIMST, (ഇമെയിൽ iec.mem.sec@sctimst.ac.in) എന്നിവരുമായി ബന്ധപ്പെടാം.

ഗവേഷകന്റെ ബന്ധപ്പെടാനുള്ള വിശദാംശങ്ങൾ:

• പേര്: ഡോ. ചിന്ത എസ്

• വിലാസം: PhD സ്കോളർ, AMCHSS, SCTIMST, തിരുവനന്തപുരം.

• മൊബൈൽ നമ്പർ:9447375532

• ഇമെയിൽ വിലാസം: chintha@sctimst.ac.in

സമ്മത പ്രസ്താവന

യുണീക്ക് ഐഡന്റിഫിക്കേഷൻ (UID) നമ്പർ:

ഈ പഠനത്തിന്റെവിശദാംശങ്ങൾ ഞാൻ വായിച്ചു. പഠനത്തിന്റെ സ്വഭാവവും എന്റെ പങ്കാളിത്തവും വിശദീകരിക്കുകയും പഠനവുമായി ബന്ധപ്പെട്ട എന്റെ എല്ലാ ചോദ്യങ്ങൾക്കും തൃപ്തികരമായ ഉത്തരം നൽകുകയും ചെയ്തു. ഈ സമ്മത ഫോമിൽ ഒപ്പിടുന്നതിലൂടെ, എന്നിൽ നിന്ന് എന്താണ് പ്രതീക്ഷിക്കേണ്ടതെന്ന് ഞാൻ മനസ്സിലാക്കുന്നുവെന്നും ഈ പഠനത്തിൽ പങ്കെടുക്കാൻ ഞാൻ

തയ്യാറാണെന്നും ഞാൻ സൂചിപ്പിക്കുന്നു. കൂടുതൽ വ്യക്തതകൾക്കായി ആരെയാണ് ബന്ധപ്പെടേണ്ടതെന്നും എന്നെ അറിയിച്ചിട്ടുണ്ട്. അഭിമുഖത്തിനിടെ എപ്പോൾ വേണമെങ്കിലും ഒരു വിശദീകരണവുമില്ലാതെ എന്റെ പങ്കാളിത്തം പിൻവലിക്കാമെന്ന് എനിക്കറിയാം.
പങ്കെടുക്കുന്നയാളുടെ പേരും വിലാസവും:

ഒപ്പ്:

A11

File No.LSGD-IB1/222/2021-LSGD

GOVERNMENT OF KERALA

Local Self Government (IB) Department
Phone No. 04712518611
E Mail- lsgibdept@gmail.com

No.LSGD-IB1/222/2021-LSGD 10/09/2021,Thiruvananthapuram

From
Additional Chief Secretary to Government

To
Director of Panchayat , Thiruvananthapuram
Director of Urban Affairs , Thiruvananthapuram
Executive Director, Information Kerala Mission ,Thiruvananthapuram

Sir,

Sub: Local Self Government Department - Representation submitted by Dr. Chintha.S, Associate Professor, Government Medical College, Thiruvananthapuram- Completing the data collection form the Local Bodies for doing Ph.D work - Reg.

Ref: Representation dated 25/08/2021 from Dr. Chintha.S

I am to forward herewith a copy of the representation cited for urgent favourable action.

Yours faithfully,
T S Praveen Kumar
Under Secretary
For Additional Chief Secretary to Government.

Approved for Issue,

Section Officer.
Enclosure:- As above.

No. DC1-17346/2021

Office of the Director of Urban Affairs,
Swaraj Bhavan, 1st Floor, Nanthancode,
Thiruvananthapuram, Dated: 22/09/2021.
Phone: 0471 2318896.
e-mail: duatvpm@gmail.com.

From

The Director of Urban Affairs

To

The Secretaries of concerned Municipalities / Corporations

Sir,

Sub: - Directorate of Urban Affairs – Representation submitted by Dr. Chintha. S, Associate Professor, Government Medical College, Thiruvananthapuram - Permission for visiting ULBs and collecting data regarding "Local Self Government budgetary allocation and utilization of health sector projects with specific reference to non-communicable diseases control" as part of PhD work – Reg.

Ref: -
1. Government letter No. IB1/222/2021/LSGD, dated, 10/09/2021
2. Representation from Dr. Chintha. S, Associate Professor, Government Medical College, Thiruvananthapuram, dated, 22/09/2021

******

This is to inform you that Dr. Chintha. S, Associate Professor Thiruvnanthapuram Medical College has submitted an application for permission to visit urban local bodies and collect relevant data required for her PhD research work on "Local Self Government budgetary allocation and utilization of health sector projects with specific reference to non-communicable diseases control". Permission is granted for the same.

You may do the necessary to facilitate her study with respect to matters relating to your Municipality / Corporation.

Yours faithfully,

Dr. Ummuselma. C. (Chungath)
Joint Director (Health)
For Director of Urban Affairs

Copy to: Dr. Chintha. S
Associate Professor,
Thiruvananthapuram Medical College

PS

File No.PAN/11398/2021-G2(DP)

പഞ്ചായത്ത് ഡയറക്ടറുടെ കാര്യാലയം
പബ്ലിക് ഓഫീസ് പി ഒ , 695033 ,
തിരുവനന്തപുരം
directorofpanchayat@gmail.com
0471-2323286 തീയതി : 22/09/2021

പഞ്ചായത്ത് ഡയറക്ടർ

തിരുവനന്തപുരം, കൊല്ലം,കോട്ടയം, കോഴിക്കോട് ജില്ലകളിലെ
എല്ലാ ഗ്രാമ/ബ്ലോക്ക് /ജില്ലാ പഞ്ചായത്ത് സെക്രട്ടറിമാർക്കും

സർ,

വിഷയം: പഞ്ചായത്ത് വകുപ്പ് -ആരോഗ്യ മേഖലയും വികേന്ദ്രീകൃത ആസൂത്രണവും -PHD പഠനത്തിന് ആവശ്യമായ രേഖകൾ പരിശോധിക്കുന്നതിനും വിവരങ്ങൾ ശേഖരിക്കുന്നതിനും അനുമതി നൽകുന്നത് സംബന്ധിച്ച്

സൂചന: 1. ഡോ.ചിന്തഎസ്., അസോസിയേറ്റ് പ്രൊഫസർ, (CAP) ഗവ. മെഡിക്കൽ കോളേജ് ,തിരുവനന്തപുരം നൽകിയ അപേക്ഷ .
2 സർക്കാരിൻറെ 10/9/20 ലെ LSGD-IBI/222/2021-LSGD നം. കത്ത്.

മേൽ വിഷയത്തിലേക്ക് ശ്രദ്ധ ക്ഷണിക്കുന്നു . ശ്രീ ചിത്ര തിരുനാൾ ഇൻസ്റ്റിറ്റ്യൂട്ട് ഓഫ് മെഡിക്കൽ സയൻസിൽ ആരോഗ്യ മേഖലയും വികേന്ദ്രീകൃത ആസൂത്രണവും എന്ന വിഷയത്തിൽ PHD പഠനം നടത്തി വരുന്ന ഡോ. ചിന്ത എസ്., അസോസിയേറ്റ് പ്രൊഫസർ,(CAP) എന്നയാൾക്ക് പഠന വിഷയവുമായി ബന്ധപ്പെട്ട് താങ്കളുടെ ഓഫീസിലെ രേഖകൾ പരിശോധിക്കുന്നതിനും ആവശ്യമായ വിവരങ്ങൾ ശേഖരിക്കുന്നതിനും രേഖകളുടെ പകർപ്പ് നൽകുന്നതിനും ആവശ്യമായ സഹായ സഹകരണങ്ങൾ ചെയ്ത് നൽകേണ്ടതാണ്.

വിശ്വസ്തതയോടെ

H. DINESHAN IAS
പഞ്ചായത്ത് ഡയറക്ടർ

Signature valid
Digitally signed by H DINESHAN IAS
Date: 2021.09.22 07:46:57 PDT
Reason: Approved