

THE ASCENT OF 'KERALA MODEL' OF PUBLIC HEALTH

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Kerala, a state on the southwestern Coast of India is the best performer in the health sector in the country according to the health index of NITI Aayog, a policy think-tank of the Government of India. Their index, based on 23 indicators such as health outcomes, governance and information, and key inputs and processes, with each domain assigned a weight based on its importance. Clearly, this outcome is the result of investments and strategies of successive governments, in public health care over more than two centuries.

The state of Kerala was formed on 1 November 1956, by merging Malayalam-speaking regions of the former states of Travancore-Cochin and Madras. The remarkable progress made by Kerala, particularly in the field of education, health and social transformation is not a phenomenon exclusively post 1956. Even during the pre-independence period, the Travancore, Cochin and Malabar provinces, which merged to give birth to Kerala, have contributed substantially to the overall development of the state. However, these positive changes were mostly confined to the erstwhile princely states of Travancore and Cochin, which covered most of modern day central and southern Kerala. The colonial policies, which isolated British Malabar from Travancore and Cochin, as well as several social and cultural factors adversely affected the general and health care infrastructure developments in the colonial Malabar region.

Compared to Madras Presidency, Travancore seems to have paid greater attention to the health of its people. Providing charity to its people through medical relief was regarded as one of the main functions of the state. The Maharajas of Travancore focussed their attention to their own people in contrast to the primary concern of the British Raj to secure the health of the colonizers. This could be a reason for Travancore to have better medical facilities than in other parts of India. The rulers of Travancore were also at the fore front in the spread of education. A school for girls was established in 1859, which was an act unprecedented in the Indian subcontinent. The Pallikkoodam, a school model started by Buddhists and later imbibed by Christian missionaries paved the way for an educational revolution in Kerala by making education accessible to all, irrespective of caste or religion.

Prior to the entry of Western Medicine in Travancore, Ayurveda flourished here. Other forms of curative and preventive treatment such as Homeopathy, Yoga, Naturopathy, Sidha Vaidya and Unani also found their way in Travancore. To our knowledge, the state encouraged all the systems impartially.

Western style of medical services was initiated in Travancore in 1811 during the reign of Ayilyom Thirunal Gowri Lekshmi Bai who was the Maharani from 1810 to 1813 and Regent from 1813 till her death in 1815 for her son Swathi Thirunal Rama Varma. Travancore, is considered a pioneer in the field of Public Health system. Interestingly, public health work commenced as early as 1813. Vaccination against smallpox was introduced first in that year. Amidst considerable resistance to vaccination from the people, The Maharaja of Travancore set an example by ensuring that members of the Royal family took vaccinations. Six decades later, a Royal proclamation in 1879 made it compulsory for students, inmates of jails, and public servants and others amenable to influence of the

Government to have small pox vaccination. An ambitious vaccination program was launched by the middle of the 19th century. Registration of vital statistics in rural areas was also started along with vaccination.

The Travancore government in their efforts to introduce western medicine, saw Christian missionaries as valuable allies. Christianity had come to Travancore before the dawn of the 16th century. Though their primary aim was to propagate Christianity, they were sympathetic to the sufferings of the people from incurable diseases and sought to help them in procuring medicines. The first missionary party with a chest of medicines reached Tranquebar, 175 miles south of Madras in 1706. They were not trained in medicine. The first medical missionaries arrived in India, much later. The London Missionary Society established in 1795 had the most sizeable medical mission in Travancore. The first medical missionary sent to Travancore was Dr. Archibald Ramsay, and he established a hospital for modern allopathic system of practice at Neyoor in 1838. A year before, Travancore government had opened its first charity hospital with provision for admission of patients at Thycaud in Trivandrum. The LMS medical mission expanded and the Neyoor hospital was one of the largest hospitals in Travancore. They started a medical training class in 1864. Travancore state made large concessions and donations to the London Missionary Society until 1897, when the Travancore government instituted a grant-in-aid system for medical institutions and then declined grants to LMS except for the Neyoor hospital and one other dispensary.

Following London Missionary Society, Salvation Army and Luther missionaries voluntarily came to Travancore with medical service. The Lutheran missionaries came inspired by the success of the Christian missionaries in religious conversion. They adopted various strategies to win the hearts of the low caste and the Muslims. The Lutheran missionaries by 1920s opened dispensaries at Wandoor, Malappuram, Amburi, Vengara and Nilamel. These centres offered free medical services to the Muslims and others. The centre at Wandoor later transformed into Karunalaya (the abode of mercy). , converted from the medical Centre at Wandoor, is a landmark in the history of medical and health care system in the state. Community health care centres were established and family planning program was introduced in the state. These developments in the field of health care systems had an impact and made a sea change in the history of health services in the State.

We have to admit that medical missionaries made a significant contribution to the development of medical facilities in Travancore. The Christian missionaries did yeomen service in eradicating epidemics of plague, cholera and small pox. They availed the service of lady doctors to work and render service among the Muslim women. Health education was also imparted to the people. It created health awareness among the people.

Despite their quality and usefulness, the scale of the mission institutions was much less than that of government institutions. In the year 1900-1901, the government institutions treated more than six times as many patients as did the LMS. This was in contrast to that of education. The missionaries educated a great proportion of pupils even in the 1940s. The state and the missionaries seem to have maintained a favourable relationship in the area of medicine than in education.

The various sovereigns of Travancore took much care to eradicate epidemics such as cholera, plague, small pox and malaria. They patronized the medical field by starting a number of hospitals, dispensaries and health centres at state expense and also extended grant to well deserving doctors, vaidyans and missionaries. Travancore health system thus gained much importance and attracted attention at national level. The Travancore society became free from population explosion. Adulteration of food and misuse of drugs and poisonous substances were checked to a great extent.

All the western style of preventive and curative treatment became widespread. As soon as a new medicine was introduced in Europe, it was made available in the state.

As early as 1870, Dr. Ross, the Durbar Physician in his report had noted that the recurrence of infectious diseases is “due to an almost total absence of all sanitary precautions and observations”. The major causes of death in those days were infectious diseases such as cholera, smallpox, worm infestations etc. Health authorities in Travancore had sufficiently early identified the basic factors underlying the origin and propagation of the diseases. The Administrative reports of Travancore covering the last quarter of the 19th century refers to the import of cholera from the neighboring Tirunelveli district by incoming pilgrims in connection with festivals at Kottar and Suchindram. A Sanitary Department began in 1895. Sanitary measures were hence taken at all vulnerable sites.

Town Improvements Committees and Rural Conservancy Establishments were set up towards the end of the 19th century to supervise sanitary arrangements and improve sanitary conditions in both urban and rural areas. They were responsible for supervision of scavenging, disposal of waste, disinfection of wells and tanks and removal of night soil from public roads and control of sanitation in markets and slaughter houses. Special sanitary measures were taken during fairs and festivals. From 1915 onwards the idea of systematically investigating the causes of an epidemic was encouraged.

Medical expenditure nearly doubled under Sethu Lakshmi Bayi, who was the regent of the kingdom of Travancore between 1924 and 1931. Dispensaries proliferated during her reign. Interestingly, it is reported that villagers provided the furniture and necessary buildings for the dispensaries. Nearly one-third of the population could access health amenities and modern medicines provided by the government by 1929.

The Maharani also created a Public Health Department to deal with epidemics as well as maternity and child welfare in collaboration with The Rockefeller Foundation. Introduction of the Public Health Department in the State was a land mark in the history of medical and health care system in the state. Travancore emerged as a pioneer among the Indian States in the field of modern medicine, public health and sanitation.

In February 1928, The Government of Travancore requested the Rockefeller Foundation to depute one of their staff experts to tender advice to the government in the field of public health. The Foundation appointed Dr. WP. Jackocks to take up public health work in Travancore. Under his guidance, a program of work was prepared which provided for a hook worm survey, study of insects that spread diseases, public health education and propaganda, maternity and child welfare work and starting a Health Unit. The survey covering most parts of the State was completed by 1930-31 and a treatment campaign was started in March 1931. The survey for malaria and filariasis was started in 1931-32 and continued with control measures in subsequent years. These programs had a significant impact on the control of these infections. Two officers were deputed to the United States for training and they returned to take charge of a new Department. The Sanitary Department was reorganized with the help of The Rockefeller Foundation in 1933 and a Department of Public Health was set up. In the field of preventive medicine, a number of vaccines were introduced in Travancore. Vaccination against polio, diphtheria, whooping cough and tetanus and B.C.G vaccination were prevalent in Travancore. Primary Health Centres were opened all over the state to eradicate epidemics. Through the use of posters, slides and pamphlets, health awareness was created among the people. Poor patients received free treatment and private institutions received Grant-in-aid.

The Public Health Department was mandated to find the root cause for all the health problems in the society. As poor nutrition, bad environmental condition, lack of education and unhygienic surroundings contribute much to a number of diseases and for the spread of epidemics the prime mission of the Public Health Department was to make the environment better and provide health education to the poor. Preventive measures were taken at the state level at the state's expenditure.

Public Health Department started a campaign in public health education from the early thirties using all available media. In 1933-34, nearly 50,000 lectures were given by the Health Education Officer to an estimated audience of four lakhs of people. The Health Education Section of the Department was able to disseminate knowledge on personal hygiene and preventable diseases and create health and civic consciousness among the public. Administrative Reports for Cochin State reveals that health care measures taken there were similar to those adopted in Travancore.

The governments of both Travancore and Cochin seem to have directed their attention to identify the principal causes of death and removing the conditions conducive to their occurrence. They had realized that prevention was better than cure. The evolution of health system transformed the state of Travancore into a 'model of health' among the princely states of India, with moderate population growth, low crude death rate and relatively low infant mortality rate. The various programs of public health and sanitation would have contributed to the initial fall in mortality rates.

By the time India gained independence, spectacular advances had already been made in medical care in Travancore. Specialty services and institutions dedicated to tuberculosis, leprosy, psychiatric illnesses, *etc* were started. Doctors were sent abroad to get technical know-how. Thanks to the Food Adulteration Act of 1954, comprehensive Public Health Act of 1955 and the expansions in rural health services, school health services and maternal and child health services, there was further progress in the health care delivery system in Kerala. At the time of Indian independence, there were 140 medical institutions with a total of more than 3300 beds, which by 1956, the year of formation of the Kerala State, jumped to 186 and more than 4500 respectively. Kerala had 270 institutions and more than 7600 beds by the end of the first Five-year Plan.

The government of Kerala in the post-independence period has taken several steps to improve the general socio-economic status of the people and preventive and curative health care through primary, secondary and tertiary level health care Institutions. Subsequent to the formation of the Kerala State in November 1956, the departments of Medical and Public Health services were merged to form the Health Services Department. The phenomenal progress during the fifteen years (three Five-year Plan periods) that followed is evident from the achievement with respect to bed population ratio of 1: 1000 by 1971, five years earlier than the target set by the Health Survey and Planning Committee headed by Dr. AL. Mudaliar.

The health care delivery system is a principal factor for the improvement in Kerala's health status. A strong political will and commitment of governments in power irrespective of their political leanings to the health sector have been catalysts for the change. In health care, the approach of the State Government has always strived to bring facilities within easy reach of all sections of the population. There is no significant rural-urban divide in the number and spread of health care institutions in the State. With the initiation of rural government dispensaries, every Panchayat now, has a medical institution. For effective and meaningful delivery of health services, family planning, maternal and child health services, nutrition and immunization have been integrated and form part of the general health services.

Government of Kerala had been increasing allocation for Health budget over the years and at a time, it was the highest for the country. Several National Programs have been launched. Kerala was the first State in the country to enter into the maintenance phase of National Malaria and Small pox Eradication Programs.

A prideful achievement is that with only 3% of India's population, the tiny state provides two-thirds of India's palliative care services. Kerala is the only Indian state with a palliative care policy and funding for community-based care programmes. Kerala's community-based Neighborhood Network in Palliative Care (NNPC) Project, that employs an army of volunteers and almost 260 local community-based care units supported with funding from the Government, has earned it much approval.

In the 1970s, The Centre for Development Studies at Trivandrum with the help of the United Nations, conducted a case study of selected issues with reference to Kerala. The results and recommendations of this study is widely known as the 'Kerala model' of equitable growth which emphasises land reforms, poverty reduction, educational access and child welfare. A decade later the United Nations Millennium Development Goals, the new charter of development embraced many of the features of the 'Kerala Model' The much-acclaimed Kerala model of development is characterized by achievements in social indicators such as education, healthcare, high life expectancy, low infant mortality and low birth rate, by the creation of productive social infrastructure. The model is based on the policies and practices, which have had an impact on reducing socio-economic inequities and facilitating better utilization of health care facilities. We may note that actions in the non-health sectors were not undertaken with specific health objectives in mind.

Disturbingly, during the last four or five decades, there has been a deterioration in sectors that determine health and this is likely to have a strong negative impact on the health status. There are signs that the state is moving towards a lower health status with high morbidity. In this context, preserving the low mortality rate, which we have achieved over the years would be challenging. Government's investment on health has dropped. The local self- governments, who has the primary responsibility of healthcare are faced with increasing demands and declining resources. Studies reveal that spending on buildings and infrastructure as well as expenditure for supplies which includes drugs and other consumables have started stagnating by the mid-1980s. This has had a major effect on the quality of medical care in primary health centres as well as district and taluk hospitals which are majorly accessed by the common people. People abandoning the basic principles of primary health care and public health and preferring more of curative services at private hospitals are also matters for concern. Be that as it may, there are indications that the newly launched LIFE Mission, AARDRAM Mission and Haritha Kerala Mission would accelerate social development, transform primary health centres and address environmental issues such as waste management and water pollution.

A sensitive and decisive administrative leadership, appropriate top down directions, good communication with the public, people's collective support and large-scale participation of the public as well as private health care institutions as well as effective coordination are the principal causes for making major gains in the health sector in the past. They have also contributed to the success we have seen in community outreach and government led voluntary efforts which aided rigorous contact tracing for control of disease spread and public distribution of essentials during the current COVID 19 pandemic. The recent experience does provide us an opportunity to assess our

strengths and weaknesses and determine how to exploit advances in Public Health Science and medical technologies to design a superior, sustainable and replicable Kerala model in health care.