

Review Article

Relevance of developing public health service cadres alongside a more prevention oriented Indian health system: an overview

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Received: 11 November 2021

Accepted: 20 December 2021

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ABSTRACT

The relevance of public health has been emphasized in the wake of the global epidemic COVID-19. There are several success stories that we often tend to forget, such as the fight against various infectious illnesses like smallpox, poliomyelitis, and current human-immunodeficiency virus (HIV) prevention, to name a few, public health has played a significant impact. Diarrheal diseases, for example, which contributes significantly to India's under-five mortality rate and is one of the leading causes of malnutrition, can be effectively handled by improving access to safe water and sanitation. Because public health encompasses more than just health, we require a workforce with managerial and leadership skills as well as training in public health as a specialty. This paper explores some of the successes and lessons learned from systematic investments in public health in the Indian state of Tamil Nadu, namely The Tamil Nadu model and other countries, as well as the system's flaws. In India, a feasible framework for establishing dedicated public health cadres has also been explored. Evidence was acquired from PubMed, Google Scholar, newspaper stories, and publicly released government orders and papers. The recruitment of cadres may resemble that of the Indian economic/statistical services (IES/ ISS) by the UPSC. Another area to emphasize for health professionals interested in public health is training. Starting from frontline workers, block level workers to district and state we need dedicated public health workforce. Moreover, the need of the hour is to establish such a system which will work alongside pre-existing clinical fields.

Keywords: Indian Public health Service Cadres, Community health needs assessment, Public health, Tamil Nadu model

INTRODUCTION

In last one and half decade India have witnessed considerable advancement in health system along with overall improvement health status. Life expectancy has been improved from 59.6 in 1990 to 70.8 years in the year of 2019.¹ Despite of the fact that overall health system improvement is noticeable, the state wise variation of the health indicators is of the matter of concern. In 2016 global burden of disease study the total disease burden for non-communicable disease (NCD) ranged from 48% to 78%, whereas for communicable diseases it was 14 – 43%.² If we look at under five mortality rates (U5MR), even from

2015 to 2017 it shows a decline of 6 points from 43 to 37 deaths per thousand live births. But at the same time on the year 2017, if we look at the two extremes on the scale, Kerala holds U5MR of 12 and Madhya Pradesh stood at 61.^{3,4} These state wise variations are uniformly noticeable in all other health indicators ultimately points mainly towards health inequality with certain other factors.⁵ At the root of these inequalities between states comes issues like health resource management, ranging from allocation, distribution to utilization of resources, disparity in enforcement of standardized protocols and lack of a definite accountability framework.⁶ The more profound disparity can be understood by seeing varying responses

against COVID-19 in different states. Many states were able to contain the virus early on, while others went through extensive testing. Some states were severely impacted and went through testing later, while others were not adequately controlled or tested.⁷ So, with doctors with clinical excellence, we need a workforce well versed in different aspects of disease epidemiology, health management, health finance and health economic analysis and moreover someone with leadership or managerial capabilities to look over and act as a bridge between the different sectors of health.^{8,9} In a symposium on providing affordable and accessible healthcare, eminent public health expert Dr. T. Sundararaman said that a public health cadre's job responsibilities include largely organising public interventions, addressing social and environmental determinants of health, and taking managerial roles in the delivery of healthcare services, particularly primary healthcare.⁹

Any health system must deliver, first preventive services aiming to decrease exposure to diseases via implementation of measures like ensuring clean water and sanitation. Second clinical preventive services like screening for diseases and vaccination and last curative services.¹⁰ Problem with our health system is in the name of public health, system's effort is largely concentrated more in second and third set of services. So, in a time where we need a major health system reorientation, we need public health cadres to advocate for what is actually needed. Creation of a public health cadre post is not a new idea. Since the 1930s, such a cadre has existed in Tamil Nadu and Maharashtra.¹¹ In this article, we tried to analyse the importance of establishing a dedicated all-India public health cadre in the current health landscape, particularly in light of the COVID-19 crisis, which is putting the Indian health system's resilience to the test. Experiences from a few high-performing Indian states, as well as other countries pioneering in the field, are given in this study. We also sought to figure out what worked well and where there might be some difficulties.

Methods

Being different from a typical systematic review, while searching literature more attention was given to identify most relevant articles matching the particular objective than comprehensiveness of available evidences. Published literature were searched from PubMed and Google Scholar. Documented evidence was also collected from government documents, organizational reports, and newspapers. Search items like "public health cadre", "public health specialist", "Indian health system", "health care delivery system", and "Tamil Nadu health system model" were used.

Examples include "public health cadre" [All Fields] OR "Indian health system" [All Fields].

DISCUSSION

The UK example: what worked well, where it went wrong?

2011-2012 is regarded as the transition year of UK health system, which marks the formation of public health England (PHE), a different organisational entity as a part of department of health, meant to work alongside National health services (NHS).¹²

With the institution of PHE, significant power was transferred to local government authorities from NHS pertaining to health-related decisions with ring-fenced budget for required identified public health interventions. The goal of PHE was to bring together a fragmented health system under the same umbrella. And this goal was achieved through supporting local action through funding and moreover with supportive evidence, data and professional leadership. PHE bridged the gap between health protection planning and response functions with scientific expertise, strategic needs assessment and by bringing in multi-agency partners.¹³

Director of public health (DPH) appointed by different local authorities (block/ district council, town/ city councils, and school services) acted as principal advisor on all health matters. Every Local authority have a local Health and wellbeing board, membered by local DPH, general practitioners, local representatives, members from social care.¹⁴ Local health and policy are discussed through these committees and implementation in clinical side is overlooked by local NHS teams. Thereby involvement of local authorities made UK's health system tailor made for specific geographic and socio-demographic needs.

On the other hand, UK is one of the country's worst hit by the COVID-19 pandemic. Different issues have been cited by different researchers starting from budget cuts for PHE by almost 40% from 2013-2019, overreliance on private contractors regarding testing and contact tracing services in spite of having a public health workforce ready on ground. The most important issue that has been cited was lack of technical expertise who can transform scientific knowledge into implementable actions. This is where serving public health professionals like civil surgeons, senior public health officers come in.¹⁵⁻¹⁷

Lessons from Cuba

Cuban annual gross domestic product (GDP) stood at 3.7% of annual GDP of India. But at the same time on health Cuba spends almost 11.19% of its own annual GDP as compared to India's 3.54%.^{18,19}

Amidst stringent economic sanctions and political conundrum Cuba managed to do remarkably well in health sector. Be it in child immunization with a 99% overall coverage, be it in average life expectancy of Cuban

population being 79 years, Cuba has done a lot while working with very less.²⁰

Following 1959 Cuban revolution, Fidel Castro confiscated many American businesses and properties on Cuban soil, in a response of this on 1962 American then president John F. Kennedy implemented economic blockade of trade relations, or more popularly termed as the U.S. embargo.²¹ The trading rules make supply of food, some medicines and fuel from US tremendously cumbersome. Trading with other countries is also problematic if there is 10% American made content in the product, which will ultimately need a mandatory licencing from U.S authorities. Due to all this it is difficult for the countries health departments to import state of the art technologies or modern expensive medicines from other countries. Keeping these in mind Cuba drifted from curative model to a comprehensive public health approach.²²⁻²⁴

Some unique features of Cuban health delivery architecture are given below.

Basic health team covering 80-150 families

One doctor and one nurse constitute a basic health team, they actively work for community capacity building for healthy living, conducts unannounced drop in visits in patient's home. At 84 doctors for every 10,000 individuals, Cuba has the highest doctor-population ratio.²²

Continuous assessment and risk evaluation (CARE)

Cuba invests more in primary health and public health, thereby attention is given more towards building a workforce ready to act on ground and inside the community, rather than heavily investing on clinical specialities.²⁵ It's a common practice for Cuban doctors and other healthcare workers to visit house to house regularly to discuss regarding diet to treatment modalities with the patients named as continuous assessment and risk evaluation (CARE). This practice helps to identify cases in case of any outbreak situation, while canvassing for symptoms and isolate cases and more specifically helps to understand factors beyond health especially environmental, and socioeconomical.²⁶

Cuba handled the COVID battle far well than UK, which had organized fancy departments and system in place. According to some researchers PHE UK undermined local and regional public health, alongside extensive centralisation. Cuba's shoe leather epidemiology in practice was on point and an eye opener for the country of John snow during COVID response.²⁷

The Tamil Nadu model

Tamil Nadu's success in public health system is quite evident in its health indicators. With an infant mortality rate (IMR) of 15 (half of national average 30), maternal

mortality rate (MMR) being 60, all has seen a steady decline over the years.^{28,29}

At the root of this stands a structured public health system with dedicated cadres in place, separate budget for public health. In 2021-2022 budget estimates Tamil Nadu has allocated 6.1% of its total expenditure on health which is more than the other state's average of 5.5%.^{30,31}

TN had its own public health act in place from 1939. The act forms a legislative basis for all public health related interventions thereby permits capacity of regulation, regular inspection and take appropriate action to protect people's health.³²

Figure 1 depicts the organisational structure of public health cadre in place in Tamil Nadu. A municipal health officer is a MBBS doctor who upon completing a diploma in public health within 4 years of joining and with proper experience can get promoted to deputy director (DDHS) level. DDHS is expected to overlook a whole district from top to bottom including blocks, PHCs and subcentres. At state level there is one director of Public Health heading the separate public health department.^{32,33} The most important point to address is separation of clinical professionals and public health professionals in such a way that both can work in a collaborative manner. Along with a finely orchestrated health care administrative framework Tamil Nadu's success story broadly lies in its investment in comprehensive PHC system. PHCs are under administrative control of director of public health and preventive medicine. As of national health profile 2018 Tamil Nadu had 1372 primary and 8706 health sub centres.³⁴ Rushender et al in their study based on a PHC of Cuddalore district Tamil Nadu, showed that 70% of the sampled population preferred Public primary Health Centre for basic ailments. Not only that, 58.8% of the sampled population utilized services from PHCs regarding chronic illnesses. Systematic investment in PHCs has tested its resilience greatly at the time of this COVID pandemic. Even in rural corners of the state PHCs ramped up their maternity and childcare service alongside parallelly running COVID screening, testing and vaccination services. On a special report by 'The Print' in primary healthcare centre in Kulathur, Thoothukudi district during mid of the month of May 2021 it was found that 11 new-born deliveries were conducted in the centre within last three weeks.³⁵

Steps like 24/7 health care services, outpatient services in evening hours in PHCs, improvement in routine emergency, essential obstetric care, inclusion of alternate medicinal system etc. were all implemented at a very early stage in the state of Tamil Nadu.

A way forward

In 2018, the NITI Aayog convened a meeting to discuss suggestions on creating India's public health cadre. Various implementation tactics, as well as

accomplishments in states such as Tamil Nadu and Odisha, were discussed at that meeting.³⁶ Following the emergence of COVID, a national agreement on the establishment of committed cadres has evolved. We analysed and proposed a possible way forward for organizing health cadres at the district and state levels in this article (Figure 2). A public health wing will act from top to bottom, in addition to pre-existing clinical services. At the block level, block public health officers will be in responsibility of the entire catchment area's health. Medical officers in PHCs will continue to work in the same capacity as before, with additional public health training. At district level separate cadres for four cores public health areas can be employed. Recruitment can be handled similarly like UPSC IES/ISS cadres. Provision of lateral entry at state level should also be discussed at the early stage of the implementation. At state level there will be one directorate of public health headed by one director. And three sub level cadres will be there governing three core areas. Currently under department of health research we have 16 health technology assessment (HTA India/HTAIn) resource centres in different states across India (ICMR HTAIn). At state level these pre-existing centres can be integrated to look over the economic affairs of health without appointing new workforce.^{11,37}

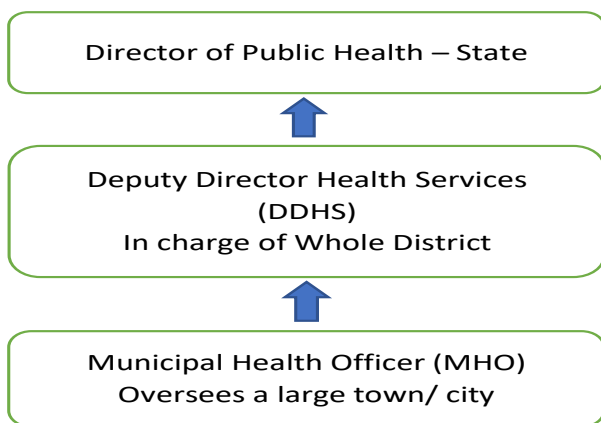


Figure 1: Organizational structure of dedicated public health professionals in Tamil Nadu health system.

| | | IPHS Cadre | | | | |
|-----------------------|--|-------------------------|-----------------------------------|---|------------------|--|
| District Level | Epidemiologist | Surveillance Officer | Environmental Health Specialist | Entomologist | Health Economist | |
| State Level | Directorate of Public Health – Director (DPH) Additional Director of Public Health (ADPH) ↓ | | | | | |
| | Epidemiologist | Surveillance Specialist | Environmental Health & Sanitation | Integration of Health Technology Assessment Hubs in each state at this level – State Health Economic Advisory Board – Chief Health Economic Advisor | | |

Figure 2: A probable organisation structure for IPHS cadres at district and state level.

CONCLUSION

We have Human resources ready at our expense. With adequate training in arena of Public Health we can easily channelize them for the greater goal of reorientation of Health system. Public Health can never be a single person job. Bringing in more academic modalities beyond MBBS, BDS, and AYUSH is needed. Many private and public institutions in India are offering Masters of Public Health programmes with a wide range of admission criteria that went beyond the conventional medical profession. Associations like the Indian association of preventive and social medicine (IAPSM) and the Indian public health association (IPHA), as well as central governing bodies for MBBS, BDS, AYUSH and other fields, must come up now more than ever to build a strong advocacy in favour of cadre formation.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

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Cite this article as: Talukdar R. Relevance of developing public health service cadres alongside a more prevention oriented Indian health system: an overview. *Int J Community Med Public Health* 2022;9:426-31.