View Point

Public Health Education in India: Need and Demand Paradox

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The extent to which we are able to improve the health of the public depends, in large part, upon the quality and preparedness of the public health workforce, which is in turn dependent upon the relevance and quality of its education and training.[1] Public health education for long has been expected to find solutions for multitude of public health problems through building the capacity of public health workforce.[2] The focus on public health education came into consideration as early as the formation of the Bhore Committee, in the 1940s. The report of the Health Survey and Development Committee chaired by Sir Joseph Bhore emphasized upon the inadequate teaching of preventive medicine and public health in the medical student's undergraduate training, thereby highlighting the need and importance of public health education.[3] The contention of the report was to mainstream the art and science of public health in medical education. This was deemed necessary for creating social physicians.

In 1999, World Health Organization convened a "Regional Conference on Public Health Education and Practice in the South East Asia Region in the 21st Century" in Kolkata. The main purpose of this conference was to critically review the public health situation including public health education and practice in this region, and to identify effective ways and means to improve and strengthen public health education and practice. It was discussed that the best way to strengthen public health infrastructure and services is through strengthening public health workforce. In order to generate skilled public health workforce, it is extremely important to strengthen the public health education architecture in the country. The main outcome of this regional conference was the "Calcutta Declaration on Public Health." This declaration provides a broad strategy and framework of action for strengthening public health education in the South East Asia Region including India.[4]

As rightly deliberated in Calcutta Declaration, development of public health workforce is the necessary prerequisite for finding solutions to enormous public health problems and challenges in this country. But what constitutes the public health workforce (human resources in public health)? It comprises public health professionals (medical and nonmedical), doctors, nursing professionals, paramedical workers, grass-root workers, and allied health workers.[5] Although staffing and resourcing remain serious problems in all the categories of this workforce, the need and demand mismatch are more evident and visible for the category of public health professionals trained in core and specialized areas of public health. Hence, this manuscript will mainly focus on this category of human resources in public health.

The "public health professionals" constitute the specialist public health workforce which could be defined as a workforce comprising people who have higher qualifications in public health and who occupy positions exclusively or substantially focused on population health.[6] Currently the public health professionals trained in India can be classified in two different categories: (1) trained in core public health or specialized in some specific area of public health, (2) possessing medical or nonmedical background before acquiring public health training.

Traditionally, when we talk about the public health education in India, we usually refer to undergraduate (MBBS) and postgraduate education (MD [Community Medicine/Preventive and Social Medicine], Diploma in Public Health [DPH], and Diploma in Community

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Medicine [DCM]) in medical colleges, which is primarily training in core public health without any specialization in specific areas of public health. Moreover the postgraduate courses are available for medical graduates only. The public health education system was expected to ingrain the basic tenets of public health in the ethos of medical students. The aim was to embed a problem solving and community outlook at both the undergraduate and the postgraduate level. Currently, there are 335 medical colleges in India, which approximately produces 40,335 medical graduates annually. Community medicine is a compulsory subject for all these medical undergraduates during the course of their medical education. India's MBBS curriculum is a legacy of the old British pattern and is overcrowded and outdated with vague and unstated methods of acquiring the desired competencies. Therefore, the challenge is to work out a written protocol stating the competencies to be acquired and methods to be adopted to acquire such competencies within a time frame. A substantial restructuring of the curriculum, with an increased focus on key competencies in several domains of public health is the order of the day. A total of 184 medical colleges offer MD community medicine/preventive and social medicine courses with a total annual intake of 602 students. A total of 39 medical colleges offer DPH with annual intake capacity of 140 students and 6 colleges run DCM with annual intake capacity of 13 students. Few medical colleges also offer PhD in Community Medicine/Preventive and Social Medicine. In addition to these traditional programs, some of the medical colleges/institutions run following specialized courses for medical graduates with limited annual intake capacity: MD (Community Health Administration), MD (Hospital Administration), Masters in Hospital Administration (MHA), MD (Tropical Medicine), MD (Maternity and Child Health), and PhD (Hospital Administration), Diploma in Hospital Administration (DHA), Diploma in Health Administration (DHA), Diploma in Health Education (DHE), and Diploma in Industrial Health (DIH).[7] Moreover, few institutions in the country offer Diplomat of National Board (DNB) (Social and Preventive Medicine, Health Administration and Maternal and Child Health) courses.[8] The All India Institute of Hygiene and Public Health (AIIHPH), Kolkata, is the oldest public health institute in India, which offers diploma, masters, and doctoral level programs in various domains of public health: Core public health, social and preventive medicine, public health management, public health engineering, maternal and child welfare, dietetics, nutrition, industrial health, health statistics, health education, veterinary public health, community health for nursing professionals, etc.[9] Recently, in 2006, Public Health Foundation of India (PHFI) is established to build Indian Institutes of Public Health (IIPHs) in the country. The mandate of PHFI is to build the capacity of human resources in public health through these institutions. At present four IIPHs are operational and are offering postgraduate diploma programs in following specialized areas of public health: Public health management, biostatistics, and data management, health economics, healthcare financing and policy, clinical research, public health nutrition, and epidemiology.[10]

In the last few years there is a conscious shift in public health education in India with a few institutions (with medical and nonmedical background) initiating public health programs for both medical and nonmedical graduates. Some of them offer core public health programs (General Masters in Public Health – MPH) and some of them offer specialized courses (MPH with tracks/specialization). Presently a total of 23 institutions offer MPH programs in India with annual intake capacity of 573 candidates. However, many of these institutions have not been able to fill their seats and more than 20–25% seats remain vacant as they do not find suitable candidates. In recent past, some institutions have launched specialized courses in public health-related disciplines.[10,11] These courses include masters and diploma programs in health and hospital management/administration, masters program in epidemiology, diploma programs in health economics, and healthcare financing, diploma programs in bio-statistics and data management, diploma programs in public health nutrition, etc. Except for the programs in health and hospital management/administration there is limited intake capacity of other specialized programs which is generally attributed to less demand for such programs.

Despite these initiatives toward building the capacity of public health professionals in the country, there is still a limited availability in teaching and training courses in specialized areas of public health (health economics, healthcare financing, health systems, health policy, health informatics, advanced epidemiology, health social sciences, environmental health, mental health, public health nutrition, public health leadership and governance, entomology, public health engineering, etc). One of the striking examples in this regard is training in epidemiology in the country. The Ministry of Health and Family Welfare, Government of India, launched Integrated Disease Surveillance Project (IDSP) which required a trained epidemiologist to be recruited in each district thereby requiring 626 epidemiologists. However, except few programs being offered by NIE – Chennai, CMC –Vellore, and NICD – Delhi (with very limited intake capacity), there are no formal courses in epidemiology in India. In order to bridge this gap, due to the shortage of epidemiologists a new program – Diploma in Epidemiology in Distance

Learning mode – has to be started in urgency. Thus taking the cognizance of several public health issues in India, we certainly need specialized training in various disciplines in public health. It is imperative that we reorient our medical education appropriate to prevailing public health conditions. Public health faces enormous challenges in terms of the brunt of infectious diseases, chronic diseases, maternal and child health issues, issues related to health systems and public health governance, etc. There is a strong and urgent need to develop trained manpower to address to these issues. Against this background, public health education must be reconfigured to meet complex contemporary challenges and respond to exciting new opportunities that are evident and emerging in Indian public health scenario.

Apart from meeting the large shortfall in availability of the public health professionals, at several levels, the knowledge and skills of these professionals and functionaries have to be appropriately and adequately designed to ensure delivery of public health services at the desired quality and scale to the communities. There is a need to build visible interface between public health training and communities so that the trained professionals can effectively deal with the problems in the communities. Interdisciplinary learning, which enables public health professionals to identify multiple determinants of health and influence them through multisectoral pathways, must be promoted through a fusion of several disciplines which have hitherto been taught in relative isolation. Public health learning needs to become more "real world" oriented and equip the policymaker and practitioner alike, with problem-solving skills. Increased connectivity of the public health education to the health system becomes especially important in this context. The health system does extend beyond health services and incorporates activities in other sectors which impact on the health of populations. Health services do, however, form a very important part of the health system. It is imperative to increase the interface of public health education with the health system, especially with health services at various levels, to ensure that public health professionals can become effective change agents and elevate the health system toward greater efficiency and equity.[12] Public health education that is irrelevant to national health priorities and divorced from public health practice is useless and constitutes a lost opportunity.[13] Given the fact that public health education can hardly be of good quality without actually linked with the health system, and the health system will benefit from serving as a platform for public health education, strategies to enable a close, and effective linkage between the two partners are crucial, regardless of whether the public health education is being delivered through medical colleges or recently established schools of public health.

However, on one hand we recognize the urgent need of multidisciplinary and quality training in both core and specialized areas of public health, and fortunately there has been growth in educational institutions in this country which offer long- and short-term academic programs in these areas, but on the other hand if we critically examine the enrollment of students for these programs in many institutions, the situation is quite disappointing. Many of the institutions who are currently engaged in offering MPH programs have been enrolling 5–15 candidates per academic year, the number being low and variable throughout. Similar situation exists for other specialized programs as well. Although these programs are aimed at building the human resources capacity in the arenas of public health, but the students who are seeking enrollment for these programs link it to job opportunities, which is quite reasonable. As there are currently limited job opportunities available in both public and private healthcare sectors, there is no great demand for these programs. Moreover, the job opportunities for nonmedical public health professionals are even more limited thereby creating hindrance for their entry into this profession. Thus the direct need and demand for these professionals faces a strong paradox. There is a huge disconnect between the two and these handful of professionals are unable to find the appropriate positions to work.

Hence it is quite clear that if we wish to build the public health workforce, we would also require simultaneously creating job opportunities and designing career pathways for the trained public health professionals. This would require a systematic planning and research. It is important to identify the gaps and needs in public health education and to work out pathways to translate this into specific, capacity building interventions. The first step toward this endeavor would be to undertake situational analysis and mapping of public health education institutions and academic programs in this country; then assessing the need of public health professional in different disciplines/domains of public health in both (public and private) healthcare sectors and finally designing the framework of job placements and career pathways for these professionals.

Additionally, to ensure that enough job opportunities are created, building a public health cadre in state health services would be a desirable and welcome step. The public health cadre currently exists in some of the states, and efforts are being initiated in few more states to design and develop such cadre. However, these efforts are unsuccessful for the want of trained public health professionals. Moreover, it would also be important to ensure place for nonmedical public health trained professionals in this framework. There are several responsibilities and tasks in public health which could be

shouldered and rendered by the public health professionals even with nonmedical background which should be recognized, respected and valued. This is the right time to revisit overall public health education framework in India and design appropriate strategies to transform the existing public health workforce dominated by medical professionals to a much wider mix of professionals who can address and improve population health. Considering the multidisciplinary and holistic approach required across the spectrum of public health, it would be useful to understand and appreciate complimentary roles of medical and nonmedical public health professionals and designing a sustainable model for their coexistence in the health system. Time has also come to realize and appreciate the role of public health professionals in expanding the private healthcare sector. In this regard, there has to be concerted and systematic efforts to create job opportunities for these professionals in this sector. It is indeed unfortunate that the public-health-related job opportunities are generally synonymously equated with the public sector and the private sector is usually equated with clinical care only. In order to achieve larger public health goals we do not only need to make the private healthcare sector more sensitive to public health issues and challenges but we also need to ensure their active engagement in public health by creating substantial job opportunities for public health professionals in this sector.

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