Executive Summary

Health systems across the globe are dependent on the health workforce in improving health outcomes. An Institute of Medicine’s (IOM) report notes that public health professionals (PHPs) play a pivotal role in the creation and maintenance of a healthy community. Health workforce in India comprises of broadly eight categories of professionals/ workers namely: doctors [allopathic, alternative medicine], nursing and midwifery professionals, public health professionals [medical, non-medical], pharmacists, dentists, paramedical workers [allied health professionals], grass-root workers (frontline workers) and support staff. The current work is restricted to only one of these eight categories i.e. public health professionals [medical, non-medical]. A public health professional is a person educated in public health or a related discipline who is employed to improve health through a population focus. Public health professionals include professionals from several disciplines and diverse fields encompassing: behavioral sciences/health promotion and communication, biostatistics, medical /health sciences, environmental health, epidemiology, health services administration/management, international/global health, maternal and child health, nutrition, public health laboratory practice, public health policy and public health practice. Public health researchers, practitioners and educators work with communities and populations and contribute towards prevention of occurrence of health problems through implementation of health programs, developing policies, administering services, regulating health systems and conducting research. Public health professionals are a component of the overall health workforce and play a vital role in the creation and maintenance of a healthy community.

Globally, the total number of PHPs is unavailable. Estimates pertaining to the supply, need and demand of PHPs are also unavailable. I undertook this research work for “Estimating supply, need, demand and mapping career opportunities for public health professionals in India”. A systematic, predefined approach was used to obtain the information. Supply estimation: The annual supply was estimated from public health professionals graduating from the institutions using data from two sources – (i) Medical Colleges and (ii) institutions (other than medical colleges, including Schools of Public Health) offering public health programs. The cumulative output from all academic programs was calculated, to estimate the annual supply of public health professionals in the country. Research studies undertaken previously for supply estimation of PHPs were also reviewed for various domains and programs. Thirty-nine in-depth interviews (IDIs) were conducted with respondents that included policy makers, faculty of
public health institutions, public health professionals, employers of public health graduates and students of public health courses. Additionally, two focus group discussions (FGDs) were conducted with public health professionals and students of public health courses to find the details of institutions offering public health programs in India. **Need estimation**: The estimates for need were calculated using “service target approach” and “benchmark analysis”. Additionally, information/opinion regarding need of public health professionals in the country was procured through IDIs and FGDs. **Gap estimation**: The current gap was calculated as the difference between the normative need calculated and net PHPs from the year 2017 to 2026. **Mapping of career opportunities** was undertaken through literature review and desk review for public health professionals in public, private, NGO and INGO sector in India. In-depth interviews (IDIs) and focus group discussions (FGDs) were conducted to study existing career opportunities and challenges in the public and private health sectors. Additionally, we undertook two **case studies**: one related to a public health program – Master of Public Health (MPH) and another one related to a large and important domain – health (hospital) management/administration. **Competency framework** was created for MPH programs on the basis of curriculum analysis and information collected from the experts during IDIs. **Tuition fee analysis for select programs**: The tuition fee associated with select public health program was estimated. This information was also solicited as a part of the interviews with the faculty and students of public health institutions. We also assessed benefits/utility and importance of these programs (as perceived by the students).

In the Indian context, public health professionals include professionals from several disciplines and diverse fields. The overall supply capacity of trained public health professionals from the institutions using data from two sources – (i) Medical Colleges and (ii) institutions (other than medical colleges, including Schools of Public Health) offering public health programs was estimated to be 15,575. However, after taking factors like: seat vacancy, migration, death of the trained workforce into consideration, this number reduces to 9,134 (Best Guess Scenario), 10,220 (Optimistic Scenario) and 11,171 (Aspirational Scenario). Public health programs are currently undersubscribed. On the basis of “service target approach” an overall normative need of around 1,80,916 PHPs was estimated for 2017. In case a public health cadre is set up then there will be an additional need for 33,236 PHPs. As per “benchmark analysis” in the year 2017 there existed a demand of 13,39,180 PHPs per 100,000 population as per Brazil’s 100:100,000 ratio and 29,46,196 as per USA’s 220:100,000 ratio. Currently, there are 11 PHPs per 100,000 population in India. By the year 2030, an increase in the global demand for PHPs is expected.
As PHPs constitute the health workforce and by then an increase in overall demand for health professionals is expected to happen. We also calculated the gap between need and supply of PHPs in India. In the ‘moderate seat occupancy (@68%) - optimistic scenario’, in the year 2017 there is a gap of around 26,298 PHPs however if PHPs are produced annually at a similar rate of 11 PHPs per 100,000 population and additionally if the Public Health Cadre is instituted assuming - 1/3rd of the states will implement Public Health Cadre by 2020, another 1/3rd by 2023 and all states by 2026 – then in the year 2026 this number remains up to 27,289 PHPs. Similarly, in the ‘low seat occupancy (@60%) – best guess scenario’ in the year 2017 there is a gap of around 27,384 PHPs however this increases to be 40,243 PHPs. In ‘high seat occupancy (@75%) – aspirational scenario’ the gap of 25,347 PHPs reduces to around 15,954 PHPs in the year 2026.

Job opportunities are available for both freshers as well as experienced PHPs. International non-governmental organizations (INGOs)/ United Nations (UN) organizations/ Contract Research Organizations (CROs) pay higher compensation packages as compared to public sector & Non-governmental organizations (NGOs). National Health Policy (NHP) 2017 has proposed creation of Public Health Management Cadre in all states based on public health or related disciplines. Structured career frameworks for non-medical public health graduates are non-existent. Competency frameworks are available/ adapted for Indian context. Epidemiology, biostatistics, health policy, health management and research methodology are covered in much greater depth in MPH program. Tuition fee of select post graduate public health programs depicts a wide variability it ranges from Rs. 480 to Rs. 14,29,461. Tuition fee ranges from Rs. 480 to Rs. 1,90,000 for institutes owned by public sector, whereas the tuition fee ranges from Rs. 28,500 to Rs. 14,29,461 for institutes owned by private sector.

We believe that this work may serve as a roadmap for the policy makers and Government of India to understand, plan and take initiatives to meet the demand for public health professionals over the coming years.