



An Analysis of the changing trends in the Size, composition, and distribution of the healthcare workforce in India

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Abstract: Human resources for health (HRH) constitute a fundamental pillar of robust health systems, as recognized by the High-Level Commission on Health Employment and Economic Growth (ComHEEG). Investments in HRH not only foster economic growth but also contribute to achieving Sustainable Development Goals (SDGs). Despite growing acknowledgment of their pivotal role, investments in HRH, particularly in lower and middle-income countries (LMICs) like India, remain below optimal levels. Thus, it is of utmost importance to understand the present status of the existing level and status of the healthcare workforce concerning their size, composition, and distribution pattern in the rural and urban areas of India. This will help in understanding the existing gaps in the HRH, which will further facilitate the policymakers to understand the investments and efforts required to ensure the provision of an adequate level of HRH in our country. In this paper, an attempt has been made to evaluate the present size, composition, and distribution of the healthcare workforce in India.

Keywords- HRH, LMICs, ComHEEG, SDGs, LMICs, ANM, NSSO, NHWA, AYUSH, RMPs, NITI Aayog, NHP, GDP, WHO,

I. Introduction

The research papers address the critical topic of Human Resources for Health (HRH) in India, focusing on its significance, challenges, and potential solutions. HRH plays a vital role in achieving better health outcomes and driving economic growth, making it a crucial area of study for policymakers, healthcare providers, and researchers. The significance of HRH in India lies in its impact on the successful implementation of initiatives like Universal Health Coverage (UHC) through programs such as Ayushman Bharat. However, the country faces numerous challenges in this regard, including disparities in budget allocation, uneven distribution of healthcare professionals, and declining public health expenditure. The selected papers provide valuable insights into these challenges and propose various strategies to address them. They emphasize the need for investment in HRH, coordination between public and private sectors, regulatory collaboration, and the establishment of a dedicated public health cadre. Moreover, they highlight the importance of accurate data analysis and robust methodology to inform evidence-based policymaking in this crucial area. Overall, these papers contribute significantly to advancing knowledge in the field of HRH in India, offering valuable perspectives and recommendations for addressing the complex challenges facing the healthcare workforce.

- i. **Healthcare workforce:** The Health workforce includes clinically trained health professionals, health management, and support workers.
- ii. **Size and composition of health workforce:** The health workforce in India encompasses a diverse array of professionals tasked with delivering healthcare services across various medical specialties. This includes allopathic doctors, AYUSH practitioners (specializing in Ayurveda, Yoga, Unani, Siddha, and Homeopathy), dentists, nurses, auxiliary midwives, pharmacists, technicians, allied health personnel, community health workers, yoga and naturopathy practitioners, registered medical practitioners (RMPs), and traditional medical practitioners and healers. The National Sample Survey Office (NSSO) and the National Health Workforce Accounts (NHWA) report significant disparities in estimates of healthcare professionals in India. NHWA records approximately 1.16 million allopathic doctors, 2.34 million nurses/midwives (including ANM), 1.20 million pharmacists, 0.27 million dentists, and 0.79 million traditional medicine professionals. However, NSSO estimates are consistently lower for all categories, reporting 0.80 million allopathic doctors and 1.4 million nurses/midwives,
- iii. **Regional variations:** Regional distribution of the health workforce reveals a huge variation across various states in India. The number of health workers available per 1000 population based on NSSO data 2011-12 in different states in India. The estimates show that the density of doctors including dental and AYUSH practitioners per 10,000 population is much lower in states like

Assam, Bihar, Himachal Pradesh Jharkhand, and Rajasthan While Delhi recorded the highest density of doctors, Kerala has recorded the highest density of nurses and midwife.

- iv. **Rural-urban distribution:** There is a disproportionately higher concentration of health workforce in urban areas. While rural areas constituted about 71% of the population in 2016, only 36% of the health workforce was available in rural areas.
- v. **Public-private distribution:** The Distribution of the health workforce across the country shows that a huge share of them is employed in the private sector. The share of the private sector among AYUSH, allopathic physicians, and dental practitioners is immense in comparison to nurses and other categories. In contrast to the public sector, India's private sector consists of a wide range of service providers ranging from individual practitioners to for-profit hospitals, not-for-profit hospitals, non-government organizations, and charitable trust institutions. The estimate based on NSSO data for 2016 shows almost 53% of the health workforce in the private sector is self-employed. More than 80% of doctors and 70% of nurses and midwives were employed in the private sector.
- vi. **Rationale for Investment in HRH:** Investing in HRH yields multifaceted benefits beyond the health sector, including improved productivity, social cohesion, and innovation. Maximizing the impact of such investments requires enhancing the efficiency of HRH spending, which necessitates comprehensive analyses of workforce dynamics. Critical considerations include mapping workforce distribution, assessing skill mix, and addressing gender disparities within the health workforce.
- vii. **Challenges in India's HRH Landscape:** India grapples with a severe shortage of health workers, exacerbated by skewed distribution across states. The World Health Organization underscores the need for 1.8 million additional health workers by 2030 to meet minimal population-based thresholds. The National Health Policy (NHP) 2017 and NITI Aayog's strategies underscore the imperative of strengthening medical education and expanding the cadre of mid-level care providers to address these shortages. The COVID-19 pandemic has further underscored India's acute health workforce deficit, revealing systemic vulnerabilities.
- viii. **Addressing Key Concerns:** Research identifies shortages of doctors and nurses, coupled with deficiencies in skill mix and training quality, as prominent issues. Limited nursing institutions and international migration exacerbate the nurse shortage, while concerns persist regarding the quality of existing nursing personnel. Addressing these challenges requires targeted interventions to enhance workforce capacity and distribution, bolstering both public and private sector engagement.
- ix. **Policy Framework and Structural Context:** India's healthcare landscape encompasses diverse ownership models and medical systems, necessitating a nuanced HRH policy framework. While successive expert committees have advocated for increased workforce production and equitable distribution, sustained under-investment in the public health system has favored private sector dominance. Recent reforms aim to augment HRH supply by establishing new institutions and upgrading existing facilities, signaling a paradigm shift towards bolstering the public health infrastructure.
- x. **The baseline number for 2019 has been taken from the education:** adjusted estimates of the health workforce from the NSSO 2017–2018. The projected skilled health workforce numbers will rise from current estimates of 1.77 million to 2.65 million in 2030. However, even this will not result in a rise in the skilled health workforce density as the density will be approximately 17.5 per 10,000 population in 2030. There will be an inadequacy of approximately 1.13 million skilled health workers to reach 22.8 skilled health workers per ten thousand population. However, if there is a scale-up of nursing supply to approximately 200% growth by 2030, the resultant number of nurses will be 2.02 million in 2030 and the total skilled health workforce number will be 3.45 million in 2030 (22.76 skilled health professionals per 10,000 population).
- xi. Recent health sector reforms, particularly since the launch of the National Rural Health Mission (NRHM) in 2005, focused on strengthening the public health system and emphasized improving the Health work population ratio. More recently in 2019, the government of India announced three strategies to enhance the supply of HRH: (i) establishing new institutions to produce health workers; (ii) expanding the intake capacity of the existing medical institutions and (iii) upgrading existing district hospitals to medical college level. Simultaneously, the government also relaxed the norms of establishing medical colleges and nursing institutions in the private sector. All these are likely to significantly increase the supply of health workers in the near future.

Discussion: The country with a population of 1.3 billion, has an estimated active health workers density of doctors and nurses/midwives of 5.0 and 6.0 respectively, for 10,000 persons, which is much lower than the WHO threshold of 44.5 midwives, nurses, and doctors per 10,000 population. The issue is compounded by the crooked inter-state, urban-rural, and public-private sector divide. Calls to urgently address and supplement the skilled health workforce reinforce the central role human resources have in healthcare, which has evolved into a complex multifactorial issue. The dearth of skilled personnel must be addressed if India is to hasten its progress toward achieving universal health coverage and its sustainable development goals (SDGs).

II. Recommendations

- i. **Increase Budgetary Allocation for Healthcare:** Despite a commitment to raise healthcare allocation to 2.5% of GDP by 2025, India's current expenditure on health remains at 1.29% of its budget. The government should strive to align healthcare

- expenditures with international benchmarks, focusing on reducing out-of-pocket expenditures to prevent families from falling into poverty due to healthcare costs.
- ii. **Enhance Efficiency in Healthcare Delivery:** Strengthen the capacity of the public health system to utilize allocated funds effectively, focusing on institutional capacity building and competency-based training. Prioritize the implementation of the National Health Protection Mission to expand health insurance coverage, particularly targeting the majority of the population without insurance.
 - iii. **Regulate and Accredite Health Facilities:** Enforce revised standards for healthcare infrastructure and personnel to accredit health facilities, ensuring standardization across the health system. Regulate the private health sector to ensure compliance with existing rules, particularly regarding patient care costs and profit margins of hospitals.
 - iv. **Expand Digital Health Technologies:** Scale up the adoption of digital technologies across the healthcare sector, leveraging innovations such as telemedicine, online training management systems, and AI-enabled diagnostics. Address the digital divide by prioritizing digital infrastructure development in rural areas to ensure equitable access to healthcare services.
 - v. **Strengthen Healthcare Workforce Planning:** Establish a comprehensive registry of health personnel and infrastructure to improve workforce utilization and distribution. Invest in ongoing training and support for healthcare professionals, prioritizing retention strategies such as native recruitment, non-hierarchical work environments, and individualized mentoring.
 - vi. **Address Challenges in Healthcare Delivery:** Combat violence against healthcare personnel through proactive measures and improved working conditions. Address systemic issues contributing to defensive medicine practices, over-prescription, and unnecessary referrals by ensuring adequate compensation for healthcare providers and promoting a patient-centered approach to care.

Conclusion: The comprehensive review sheds light on the critical dimensions of India's healthcare workforce, emphasizing the urgent need for strategic investments and policy reforms. Despite recent initiatives aimed at bolstering HRH, persistent shortages, skewed distribution, and systemic challenges continue to impede progress toward achieving universal health coverage and SDGs. To address these issues effectively, concerted efforts are required to increase budgetary allocations, enhance healthcare delivery efficiency, regulate health facilities, leverage digital health technologies, and strengthen workforce planning. By prioritizing these recommendations, India can navigate its healthcare workforce challenges and pave the way for a more equitable and resilient health system, ensuring better health outcomes for its vast population.

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