India's struggle with manpower shortages in the primary healthcare sector

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India, after failing to achieve most of the health-related targets of the Millennium Development Goals (MDGs) by 2015, has made a commitment to achieve another set of health-related targets (a total of nine targets under Goal 3) including 'universal health coverage' (UHC) laid down by the sustainable development goals (SDGs) to be achieved by 2030. The achievement of the UHC and other health-related SDG targets is contingent on the availability and quality of public health services at primary, secondary and tertiary care levels. However, all is not well with the public health sector in India, especially at the primary care level. Despite the huge investments made in the National Rural Health Mission (NRHM) over the period 2005–2015 to strengthen the primary healthcare in rural areas of the country, there is still a shortfall in the required number of subcentres, primary health centres (PHCs) and community health centres (CHCs) as well as health manpower, especially specialist doctors. The health manpower – 'the stock of all individuals engaged in the promotion, protection or improvement of population health'[1] – is the backbone of the health system and without them the health system can never function. Acknowledging the role of health manpower for enabling UHC, the High Level Expert Group on UHC for India emphasizes that 'India's mandate for UHC depends, to a great extent, on adequate and effective Human Resources for Health (HRH) providing care at primary, secondary and tertiary levels in both the public and private sectors'[2].

India's health manpower crisis was reported way back in 2004 by the Joint Learning Initiative (JLI)[3] – a network of global health leaders. The JLI's report on human resources for health highlights that India had about 11.3 health manpower (doctors, nurses and midwives) per 10,000 people in 1998, and thus, was among the low-health manpower density countries. Similarly, the World Health Report 2006 (ref. 4) estimated the density of health manpower (doctors, nurses and midwives) in India at 18.7 per 10,000 people in 2004 and placed India among the 57 countries having a critical shortage of health manpower.

The estimates of health manpower density, however, vary based on the sources of data. While the above estimates are based on the official data from the professional councils of doctors and nurses, estimates based on the Population Census and National Sample Survey (NSS) data show even a lower health manpower density in India. Based on Census 2001 data, a recent study[5] estimates that India had approximately 20.12 total health manpower and 12.28 doctors, nurses and midwives per 10,000 people respectively in 2001. Another study[6] based on the NSS 61st round (July 2004–June 2005) on 'employment and unemployment' estimates the densities of all health manpower and doctors, nurses and midwives at 20 and 11.9 respectively, per 10,000 people. Estimates based on NSS 68th round (July 2011–June 2012) data show that the situation is unchanged even in 2011–12; the densities of all health manpower and doctors, nurses and midwives were about 20.9 and 13.4 per 10,000 people respectively[7]. Further, after adjusting for educational qualification, the densities fall to 9.1 and 6.4 per 10,000 people respectively[7]. Thus, in comparison to the international health manpower norms, the total number of doctors, nurses and midwives in India is approximately half of the WHO's benchmark of 25.4 per 10,000 people and after adjusting for educational qualification, the numbers fall to just a quarter of the WHO benchmark.

The situation is even critical in the rural areas as the distribution of health manpower is overwhelmingly skewed in favour of the urban areas. Only about 40.8% of all health workers are in the rural areas, where about 70% of the population resides. The percentage of health manpower residing in the rural areas by cadres are: 39.6% for doctors, 43% for AYUSH doctors, 39.6% for nurses and midwives, 20.4% for dentists, and 45% for pharmacists[5]. As a result, the density of health manpower in rural areas is just a quarter of that in urban areas[5,6]. Even those who serve in rural areas are mostly (over 70%) engaged in the private sector[5], leaving the healthcare services inaccessible to a large section of the rural people, since about one-fourth of the rural population are poor, for whom the private medical facility is economically beyond reach.

Although the NRHM mission (now National Health Mission) has made substantive efforts to augment the health manpower in rural public health sector, the sector continues to suffer from persistent shortage of qualified health manpower. As per data available from the Ministry of Health and Family Welfare, Government of India (Rural Health Statistics 2016–17)[8] there were, as on 31 March 2017, about 156,231 sub-centres (a shortfall of 34,946 from the required numbers), 25,650 PHCs (a shortfall of 6409 PHCs) and 5624 CHCs (a shortfall of 2168 CHCs) in rural India.

The total number of health manpower, as on 31 March 2017 at various health facilities by cadres were: 14,350 medical officers, 4156 specialist doctors, and 2129 radiographers at CHCs; 27,124 doctors, 22,351 auxiliary nurse midwives (ANMs), 14,267 lady health visitors (LHVs), and 12,288 male health assistants at PHCs; 70,738 nurses, 25,193 pharmacists, and 18,952 laboratory technicians at the combined PHC and CHC levels; and 198,356 ANMs and 56,263 male health workers at sub-centres. This adds up to a total of 466,167 healthcare personnel in the public health sector in rural India, which translates into a density of 5.3 healthcare personnel per 10,000 people or one healthcare personnel for every 1890 people in 2017 compared with the density of 4 per 10,000 people or one healthcare personnel for every 2473 people in 2005. The combined density of doctors, nurses and midwives improved from 3.6 to 4.8 per 10,000 people over 2005 to 2017, but it still remains less than one-fifth of the WHO's benchmark of 25.4 per 10,000 people. Going by this benchmark, there was a deficit of 20.6 doctors, nurses and midwives per 10,000 people in rural India, leaving around 80% of rural population without access to public healthcare services.

Even if we consider the national norms under the NRHM, there was a deficit, as on 31 March 2017, of about 18,347 (81.6%) specialist doctors in CHCs. Of these shortages, 4866 (86.5%) were surgeons, 4170 (74.1%) were obstetricians and gynaecologists, 4760 (84.6%) were physicians, and 4554 (81%) were paediatricians. There were 11.8% fewer doctors in PHCs, 22.7% and 40% fewer pharmacists and laboratory technicians respectively, in PHCs and CHCs, and 64.5% fewer radiographers in CHCs. Among the nursing cadres, there was shortage of 20.3% of nurses at PHCs and CHCs; 33% of ANMs, 45.7% of LHVs, and 60.8% of male health assistants at PHCs; and 3.9% of ANMs and 63.7% of male health worker at sub-centres. The distressing fact is that the percentage shortfall of all the public health cadres except nurses and ANMs has increased during 2005–2017 even after NRHM's substantive efforts to deploy doctors and other health workers in rural areas.

Due to the shortages, as on 31 March 2017, about 8% of PHCs were without a doctor, 61% were with only one doctor, 35.8% were without a laboratory technician and 19% were without a pharmacist. Specialists and lady doctors are very short in supply in the rural areas; about 92% of CHCs were without all the four specialist doctors and over 74% of PHCs were without a lady doctor. Many health facilities are also without nurses and midwives; about 4% of sub-centres were without an ANM, 50% were without a male health worker, and 3% were without ANM and male health worker. Interestingly, the post-NRHM period (2005–2017) has seen an increase both in absolute number as well as percentage of health centres without adequate manpower.

The economically backward states and tribal areas of the country face a dire situation of manpower shortage. Substantial deficit persists for all the public health cadres in most of the backward states[9]. The tribal areas had a shortfall of about 83.7% of surgeons, 78.4% of obstetricians and gynaecologists, 84.8% of physicians, 81.5% of paediatricians, 15.6% of doctors, 61.9% of radiographers, 24.6% of pharmacists, 32.6% of laboratory technicians, 27.9% of nurses, 8.4% of ANMs, 54.2% of male health workers, 43.7% of LHVs, and 58.5% of male health assistants.

The shortage comes despite India having about 412 medical colleges with around 50,000 admissions capacity, about 550 AYUSH institutes with over 32,000 admissions capacity, 3000 nursing colleges with over 118,000 admissions capacity, and over 1900 ANM training institutes with around 55,000 admissions capacity[9]. The shortage of health manpower in rural areas is because of both the reluctance of the health workers to work in rural areas and the inability of the public sector to attract and adequately staff rural health facilities[9,10]. Many health workers, especially allopathic doctors and specialists, are reluctant to work in rural areas, because of poor career prospects, lower income (because of very less opportunities for outside earnings in private practice), poor working and living conditions (because of either lack of or poor conditions of staff quarters, safe drinking water, electricity, etc.), and very few job opportunities for spouses and education opportunities for children[9,10]. The shortage is also caused by factors such as desire of medical graduates to study postgraduate courses, preference to work in private sector (due to higher salary), urban centric medical education system, and institutional factors such as delays in recruitment, lack of transparency in identifying vacancies, promotions and transfers, changes in service rules, etc.[10].

Although there has been a long standing criticism regarding the appointment of specialist doctors in rural health centres (because they have very less scope to work proficiently, due to lack of access to, for example, equipments and facilities), the need of specialist doctors in rural areas has been growing over the years with the rise in diseases, such as diabetes, heart disease, cancer, etc. among the rural people. Therefore, the governments, both central and state, have a mounting task to train the doctors, persuade them to serve in rural areas, and even convince them to stay on in the profession. To this end, rural service needs to be made attractive through competitive incentive – both monetary and non-monetary – packages and better working as well as living conditions in the rural areas. This is possible only through a substantial enhancement in the public expenditure on healthcare from its existing level of 1.2% of GDP and enhancement in public expenditure not just by the central government but also by each of the state governments as well.

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