



Human Resources for Health Development in India

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Health development in any country, among other things, depends upon the health workforce. There has been vast expansion in the public health system in India. The rural healthcare system in the country is facing serious problems due to shortage of health man power across the country. There is shortfall of different kinds of manpower in the Sub-centres, PHCs and CHCs. There is acute shortage of trained nurses because of low supply and mass exodus to other countries. States like Uttar Pradesh, Bihar, Orissa, Madhya Pradesh and Rajasthan are the worst affected due to shortage of nurses. The doctor-nurse ratio is at an abysmally low level of 1: 1.5. Similarly, because of shortage of doctors, the population being serviced per doctor is growing. There is a shortfall of 400,000 doctors in the country. As the present number of medical colleges is insufficient to meet the additional requirement of doctors, there is a need to establish 400 more medical colleges. Because of the shortage of health manpower India is wasting considerable resources and losing opportunities to improve the health of its people. Appropriate policies are to be formulated in order to meet this challenge. Finally, it has been concluded that there is an urgent need to increase the supply of human resources. The opening of medical education sector for private sector participation can solve the problem to a great extent.

Keywords : Human Resources, Health.

Introduction

Health workforce is critical for health development. The health sector as contrast to any other sector depends more on people to attain its objectives. The success of health activities in a country depends on the available human resources. Recent evidence has shown an important link between the number of health workers, and both service delivery and health outcomes. Developing efficient and capable health workers is essential for achieving the health goals at the national and global levels. The only route to attaining the health goals of the Millennium Development Goal (MDGs) and National Health Policy (NHP) - 2002 and the five-year plans is through the health goals. The MDG health objectives also focus on human resources in order to reduce infant and maternal mortality, incidence of TB, HIV/AIDS, and malaria. There is no gainsaying the fact that lack of human resources capacity is a major barrier to the achievement of the MDGs. Added to all this is the rapid growth of the Indian economy in the post-liberalisation period. Due to rapid economic growth poverty level in the country is going down. Consequently, the health seeking behaviour of the people has expanded. At the same time new public health challenges have emerged in the form of changing demographics and environmental conditions.

Human resources for health in India are diverse and multifaceted. They include from the rigorously trained biomedicine specialists and super specialists at the end of the community-based healers. But the delivery of health services mainly depends on the trained and qualified doctors of allopathic or modern biomedicine, dentists, radiographers, a range of paramedical

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professionals, such as nurses, pharmacists, laboratory technicians etc. The paper, therefore, will give emphasis on these types of human resources in the public sector of India. There has been vast expansion in the public health system in India since independence. It now includes 142,655 sub-centres, 23,109 primary health centres (PHCs) and 3222 community health centres (CHCs). Apart from these, there are a total of 5479 sub-divisional and district hospitals in the public sector. (Satpathy and Venkatesh 2006) The population coverage norms are 3000 to 5000 for sub-centre, 20,000 to 30,000 per PHC and 80,000 to 1,20,000 per CHC respectively depending on the location of the centre in a hilly, tribal, difficult area or in the plains. The sub-centre is the first contact point between the community and public health system. It is manned by an ANM and a male health worker. Nearly 7 percent of the sub-centres lack an ANM which comes to a total shortfall of 11,190 and 50 percent do not have a male health worker. It is estimated that if an additional ANM is provided to each sub-centre as per the NRHM goals and if the 21,983 new sub-centres are established according to the 2001 population norm, the country will need about 200,000 ANMs. In order to fulfill the total requirement of ANMs, there is a need to augment the training capacity of the training schools and open new training schools (Satpathy and Venkatesh 2006). All the 23,109 PHCs are being upgraded to provide round the clock service with the basic objective of improving institutional delivery. In order to fulfill this programme three staff nurses, instead of one are to be provided. Further, about 700 PHCs are currently without doctors. The states have to also establish an additional 4436 PHCs to meet the shortfall of PHCs as per the 2001 population norms. Because of all these an additional 24,000 MBBS/AYUSH doctors and 46,000 staff nurses are needed to provide services in the PHCs.

The type of human resources for health managing the public health system in India is decided by the health situation recommendations of the Bhole Committee of 1946 and other committees of the government. There are 229 medical colleges with an annual intake of 25600, 747 general nursing and midwifery schools, 235 auxiliary nurse midwives (ANMs) training schools, 254 nursing colleges imparting graduation level courses and 40 colleges conducting post-graduate courses and 56 multipurpose worker (MPW) training centres functioning in the country. In addition to all these there are 358 institutions providing degree level education in pharmacy to 11,670 students per annum. The AYUSH system has about 437 colleges with an annual admission capacity of nearly 87,130. About 622,576 doctors were registered in India till 2004. The state institutes of health and family welfare, district training centres provide in-service training to various categories of health personnel. The rural healthcare system in many states in the country is slowly falling apart. Though a large number of health care centres are present, most remain understaffed. The condition is particularly bad in Uttar Pradesh, Chhattisgarh and the north-eastern parts of the country. Most states suffer from understaffing of health centres. The maximum shortfall in manpower is in case of male health workers. Out of the 146,026 sub-centres in India (as on Sept. 2005), 44,766 or 31 percent do not have a male health worker. A sub-centre is the first contact point with the rural community. Each sub-centre must necessarily be manned by one auxiliary nurse midwife (ANM) and one male health worker for efficient functioning. Primary health centres (PHCs) and CHCs are the other two tiers in the rural healthcare system. Understaffing and vacant positions are seen in these two centres across India. In India as a whole only 48 percent of the PHCs have adequate staff. The percentage of PHCs adequately equipped in staff is more than 97 percent in Tamil Nadu, 96 percent in

Maharashtra and 91 percent in Kerala. Their percentage is below the national average in Jharkhand, Punjab, Assam, Madhya Pradesh, Chhattisgarh, Rajasthan, Bihar and Orissa. It is lowest in Orissa. The percentage of PHCs adequately equipped in Staff is more than 60 percent in 130 districts. A well functioning PHC must have staff strength of 15, with at least one medical officer, lab technician and pharmacist. The situation is even worse in CHCs. While the number of CHCs functioning in all states has improved during the 10th Plan, there remains the problem of acute understaffing. There are 3346 CHCs functioning in rural India, with a requirement of 13,384 specialists. However, only about 7274 specialists are currently working, creating a shortage of nearly 50 percent. In Gujarat, specialists like physicians and paediatricians are not present in the villages.

Table : 1
Percentage of PHCs Having Adequate Staff

States	
Tamil Nadu	97
Maharashtra	96
Kerala	91
Andhra Pradesh	88
Gujarat	86
Uttaranchal	68
Karnataka	58
Uttar Pradesh	53
Haryana	51
India	48
Jharkhand	38
Punjab	38
Assam	35
Madhya Pradesh	34
Jammu & Kashmir	31
Himachal Pradesh	29
Chhattisgarh	26
Rajasthan	26
Bihar	20
West Bengal	6
Orissa	0

Source: Government of India, *National Family Health Survey- III, 2005-06*.

Despite the fact that the existing manpower is an important prerequisite for the efficient functioning of the rural health infrastructure, the overall shortfall in the posts of HW(F)/ANM was 12.6 percent of the total requirement. In case of Health Assistant (male) was 28.8 percent. There was a shortfall of 7.8 percent of the total requirement in case of doctors. Even out of the sanctioned posts, a significant percentage of posts are vacant at all levels. For example, about 8.8 percent of the sanctioned posts of HW(F)/ANM were vacant as compared to about 32 percent of the sanctioned posts of MPW(male)/male health worker. At PHC, about 13.8 percent of the sanctioned posts of Female Health Assistant/LHV, 22.1 percent of Male Health Assistant and 18 percent of the sanctioned posts of

doctors were vacant. At the Sub-centre level the extent of existing manpower can be assessed from the fact that about 5 percent of the sub-centres were without a Female Health Worker/ANM, about 37.2 percent sub-centres were without a male health worker and about 4.7 percent sub-centres were without both Female Health Worker/ANM as well as Male Health Worker. This indicates a large shortfall in Male Health Worker. The current position of specialists manpower at CHCs reveal that out of the sanctioned posts, about 59.2 percent of surgeons, 46.4 percent of obstetricians and gynaecologists, 56.6 percent of physicians and about 51.9 percent of paediatricians were vacant. Overall about 50 percent of the sanctioned posts of specialists at CHCs were vacant. Rural public health facilities across the country are facing the problem of attracting, retaining and ensuring regular presence of highly trained medical professionals. About 80 percent of the district hospitals (DHs) have public health nurse, male health assistants, and pathologists. At least 90 percent of the DHs have obstetrician/ gynaecologists, paediatrician, laboratory technician, female health assistant, multipurpose female worker, staff nurse and pharmacist. The staff at FRUs comprises of multipurpose female worker (91 percent), female health assistant (91 percent), laboratory technician (88 percent), staff nurse.

Table : 2
Shortfall of Auxiliary Nurse Midwives (ANMs) and Doctors in Rural India

State	Shortfall of ANMs*	Shortfall of doctors*
Kerala	104.60	124.45
Maharashtra	100.00	100.00
Tamil Nadu	114.70	100.00
Andhra Pradesh	117.22	117.22
Orissa	100.82	121.08
Rajasthan	102.18	115.10
Uttar Pradesh	100.48	117.48
Madhya Pradesh	104.24	140.02

Note: * Vacancies plus shortages of posts against population norms.

Source: Mahabub ul Haq Human Development Centre. (2005). *Human Development in South Asia 2004: The Health Challenge*, Oxford: Oxford University Press, P. 167.

India is facing an acute shortage of trained nurses because of mass exodus of qualified nurses to Europe for better pay, shortage of teachers in nursing colleges and low interest and knowledge about nursing as a profession. At present, nearly 9 lakh nurses are registered with various state nursing councils in the country. But only 40 percent of them (3.6 lakh) could be in active duty. According to Health Ministry estimates, by the end of the 11th Plan (2007-2012), India would require 10.43 lakh nurses. But with the existing infrastructure, the number would stand at just 6.84 lakh, short by 3.59 lakh. India which has 1597 nursing schools, 833 B.Sc (nursing) colleges and 97 M.Sc. (nursing) colleges, has a capacity to train 79,850 diploma nurses, 41,650 graduate nurses and 1940 post-graduate nurses a year. However, over 20 percent of this number every year head to foreign countries in search of better pay. States like Uttar Pradesh, Bihar, Orissa, Madhya Pradesh and Rajasthan are the worst affected by shortage of nurses. Also, for every doctor, there should be three nurses. But at present the doctor nurse ratio in India is 1:1.5. Having allocated Rs. 319 crore for the Eleventh Plan to strengthen nursing education, the Ministry has identified 230 districts

where there are no ANM and graduate nurse-midwives institutions and where such colleges will be set up.

Table : 3

Number of Registered General Nursing Midwives, Auxiliary Nurse and Health Visitors (2005)

States	General Nursing Midwives	Auxiliary Nurse	Health Visitors
Andhra Pradesh	88,457	98,455	2480
Assam (a)	10,540	15,955	-
Bihar	8883	7501	511
Chhattisgarh	462	522	-
Delhi	10,707	1192	-
Gujarat	85,930	35,935	1352
Haryana	17,186	13,172	694
Himachal Pradesh	7920	9087	411
Jharkhand	322	15	-
Karnataka	64,308	47,407	6836
Kerala	77,596	27,712	7797
Madhya Pradesh	93,106	26,138	1017
Maharashtra (b)	86,406	28,190	551
Meghalaya	1524	623	90
Mizoram	1483	1479	-
Orissa	46,311	30,716	172
Punjab ©	45,801	18,152	2584
Rajasthan	37,667	22,239	850
Tamil Nadu (d)	1,59,843	52,909	11,083
Tripura	794	977	144
Uttar Pradesh	17,827	26,956	2763
Uttarakhand	58	-	-
West Bengal (e)	45,831	56,261	11,380

Note: (a) Data for Assam includes data for Assam, Arunachal Pradesh, Manipur and Nagaland.

(b) Data for Maharashtra includes data for Maharashtra and Goa.

(c) Data for Punjab includes data for Punjab and Jammu & Kashmir.

(d) Data for Tamil Nadu includes data for Tamil Nadu, A & N Islands and Pondicherry.

(e) Data for West Bengal includes data for Sikkim.

Source: Government of India. (2007). *Statistical Abstract of India 2007*, New Delhi: Government of India, P. 538.

India is suffering from a doctor deficiency syndrome. The population being serviced per doctor is growing. The country needs to have at least a million doctors. It is being forced to manage with 600,000 doctors, a shortfall of 400,000. The nation may need up to 400 medical colleges in ten years to bridge the gap. There is also disparity in the availability of medical education within states. While Uttar Pradesh and Bihar have just 12 and 8 medical colleges respectively, Maharashtra has 38 and Karnataka has 33. The ratio worth aiming at is 1000 people per doctor, as recommended by a commission appointed by the Government of India. We are far from the goal. At an all India level, there are about 1700 people per doctor. The number is well short of the ratio prevalent in developed countries such as Australia, which has 249 doctors for every 10,000 population. Canada has 209 doctors for every 10,000 people while UK has 166 and US 548. Among the better states, Karnataka, for instance, has adequate number of doctors and each doctor serves 862 people. Maharashtra

and Kerala are also very close to the goal of 1000 patients per doctor. However, Uttar Pradesh, Bihar and Orissa have far fewer numbers of doctors. The doctor deficiency in various states translates into very bad medical facility. For example, one doctor has to support more than 4000 people in Uttar Pradesh and 2564 in Orissa and 2500 in Bihar. Andhra Pradesh, Gujarat and West Bengal have serious scarcity of doctors. Scarcity of doctors is a chronic problem in Orissa. And it is likely to adversely affect the implementation of the National Rural Health Mission (NRHM). Because of dearth of doctors, as many as 800 posts of doctors are lying vacant in Orissa, mostly in the rural areas. There are only 2260 doctors left to provide health service to more than 4 crore people. India needs to add 400,000 doctors to reach the acceptable level of adequacy. But the present number of medical colleges (around 235) adds up to 25,000 doctors a year. But considering the growth of population, and retirement and expiry of doctors, this number of doctors is just sufficient to keep the current ratio going. Hence, an additional 400 colleges are required to add the 400,000 doctors so that the gap can be bridged within 10 years. The wide disparity in the number of colleges in different states indicates that the need for new colleges is more in some states such as Uttar Pradesh, Bihar and other regions. Indeed Uttar Pradesh itself could need 100 more medical colleges, or Bihar could need 40 colleges to add to its 8 colleges and West Bengal could use additional 50 colleges to its 9 colleges. Government and private enterprise need to step in to fulfill this need. However, these colleges need to be in states like Uttar Pradesh, Bihar, Orissa, and West Bengal. India also faces an acute shortage of dental surgeons. At present, the number of dental surgeons registered in India stands at just over 73,000 against the requirement of nearly 3 lakh.

Table : 4
Number of Registered Doctors

States	1991	2001	2003
Andhra Pradesh	19,610	30,687	34,147
Assam	10,499	14,586	15,526
Bihar	26,376	33,070	34,583
Chhattisgarh	-	-	101
Goa	-	2030	2236
Gujarat	22,392	33,653	36,012
Haryana	644	1146	1285
Himachal Pradesh	-	-	-
Jammu & Kashmir	4407	6875	7900
Jharkhand	-	-	91
Karnataka	32,813	61,163	65,789
Maharashtra	49,365	80,764	88,378
Orissa	11,087	14,315	14,707
Punjab	26,636	32,558	33,417
Rajasthan	14,041	20,438	21,885
Tamil Nadu	46,419	65,771	70,357
Uttar Pradesh	33,178	43,492	46,309
West Bengal	41,722	49,941	51,961
Delhi	-	468	1514
Total	3,93,640	5,77,094	6,25,423

Source: Government of India. (2007). *Statistical Abstract of India 2007*, New Delhi: Government of India, P. 587.

Table : 5
Doctor Deficiency in India

States	Population/doctor	Medical colleges	Colleges required
Andhra Pradesh	1699	27	10
Assam	1826	8	6
Bihar	2506	8	40
Gujarat	1503	13	15
Haryana	1839	3	6
Orissa	2564	3	17
Uttar Pradesh	4111	12	100
West Bengal	1606	9	50

Source: "This Millennium, India Needs a Million Doctors," Economic Times, 4th May 2005.

Table : 6
Distribution and Annual Intake in the MBBS course in Medical Colleges

Sl no	State	No of colleges			Annual intake
		Govt.	Other	Total	
1	Andhra Pradesh	9	5	14	1975
2	Assam	3	-	3	391
3	Bihar	6	2	8	510
4	Chandigarh	1	-	1	50
5	Chhattisgarh	1	-	-	100
6	Delhi	4	-	4	460
7	Goa	1	-	1	100
8	Gujarat	8	2	10	1405
9	Haryana	1	-	1	150
10	Himachal Pradesh	2	-	2	115
11	Jammu & Kashmir	2	2	4	350
12	Jharkhand	3	-	3	190
13	Karnataka	4	18	22	2955
14	Kerala	5	1	6	800
15	Madhya Pradesh	5	-	5	620
16	Maharashtra	18	17	35	4010
17	Manipur	-	1	1	100
18	Orissa	3	-	3	364
19	Pondicherry	1	2	3	275
20	Punjab	3	3	6	520
21	Rajasthan	6	-	6	650
22	Tamil Nadu	11	5	16	1865
23	Uttar Pradesh	9	2	11	1212
24	Uttaranchal	-	1	1	100
25	West Bengal	7	-	-	905
Total		113	61	174	20,172

Source: Government of India, Planning Commission. Report of the Working Group on Health of Women and Children for the Eleventh Five Year Plan (2007-2012), New Delhi: Government of India

International comparison of data on manpower and facilities suggest that the number of medical personnel and hospital beds in India's public sector is huge in absolute numbers. But in per capita terms it is well below the comparable ratios in many low-income countries. The per capita number of physicians in India is about average the low income countries, where as the ratios for nurses and midwives are well below average.

Health Worker Absenteeism

It is not only that there is manpower shortage in the health sector, but absenteeism among the existing health sector personnel poses serious problem for health delivery in the country. The welfare consequence of health worker absence is enormous (Choudhury et al 2006). It is found that 40 percent of the health workers are absent in primary health centres (PHCs) in India while the figures for Bangladesh is 35 percent, Peru 25 percent, and Uganda 37 percent (Table 7). The absenteeism rate in India is also higher than the 35 percent absenteeism rate for the developing countries as a whole. Health workers who are absent from public clinics seem to be providing private medical care. An average of 41 percent of health workers has a private practice. (Choudhury et al 2006) It is also found that for medical providers other than doctors, attendance in CHCs is much higher than in smaller sub-centres where no doctor is assigned.

Table : 7
Absence Rates in Primary Health Centres by Country

Country	Absence Rates in Primary Health Centres (%)
India	40
Bangladesh	35
Indonesia	40
Peru	25
Uganda	37

Source: Chaudhury, Nazmul. et al. (2006). "Missing in Action: Teacher and Health Worker Absence in Developing Countries," Journal of Economic Perspectives, 20 (1), winter, P.92.

The absence rates are high for medical providers and the problem is found to be worse in case of poorer states (World Bank 2003). It is as high as 58 percent in Bihar and Assam (Table 8). The absence rate is 52 percent in Gujarat, 43 percent in Karnataka, 42 percent in Uttar Pradesh, 43 percent in West Bengal and so on. In rural Rajasthan absence is inefficiently high in case of nurses who staff the smaller health sub-centres. On the other hand, 45 percent of the doctors were absent from primary health centres in rural Rajasthan. Absenteeism rate is 45 percent in Sub-Centres, 36 percent in PHCs and CHCs in Rajasthan. Further, in case of Sub Centres it was also found that at sub-centres the doors were closed 56 percent of the times visited. Similarly, in Karnataka, absenteeism ranges from 44 percent in Shimoga (a forward district) to 63 percent in Bidar (a backward district). The high rate of absenteeism in Bidar district has contributed to dismal health indicators (iDpms, 2010).

Absenteeism is a nebulous issue and serious consideration need to be given for it. As more than a third of health workers absent from their health facilities, India is wasting considerable resources and missing opportunities to improve the health of the populations. Poorly functioning government institutions impair provision of health. Faced with high

absence rates policy makers have two challenges. First, how can health policy be adopted to minimise the cost of absence and secondly, how absence can be reduced. Appropriate health policies should be designed to take into account high absence rates. For example, doctor absence may be difficult to prevent, but possible to work around. High salaries combined with effective monitoring may be required to induce well-trained medical personnel to live in rural areas. In order to reduce absence, one approach would be to increase local control. Local level monitoring by the panchayats is likely to give good result. Regular inspection of the hospitals by high level authorities also can minimize absenteeism. Apart from all these priority should be given in building staff quarters and other amenities. This is likely to attract the doctors and other health workers to work in the rural areas.

Table : 8
Absentee Rates for Primary Health Workers in Selected States, 2003 (in percent).

States	Primary Health Care Workers
Andhra Pradesh	n.a.
Assam	58
Bihar	58
Gujarat	52
Haryana	35
Karnataka	43
Kerala	n.a.
Orissa	35
Punjab	n.a.
Rajasthan	39
Tamil Nadu	n.a.
Uttar Pradesh	42
Uttaranchal	45
West Bengal	43
	n.a. - data not available

World Bank. (2005). India: Sustaining Reform, Reducing Poverty. Washington, D.C.: World Bank, P. 44

Conclusion

An acute shortage of trained health care personnel in India continues to be the health sector's greatest curse. To add to that, India holds the top position when it comes to its physicians migrating to developed countries like the UK and US. According to Planning Commission estimates, the country has a shortfall of six lakh doctors, 10 lakh nurses and two lakh dental surgeons. This has led to dismal patient-doctor ratio in the country. For every 10,000 Indians, there is one doctor. In contrast, Australia has 249 doctors for every 10,000 people, Canada has 209, UK has 166 and US has 548. The overriding requirement in the country is for increasing the supply of human resources, from specialists to paramedical personnel. India also has a very low turnout of personnel with post-graduate degrees. The medical education sector needs to be opened up for private sector participation.

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