

Role of Private Sector in Medical Education and Human Resource Development for Health in India

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MEDICAL EDUCATION AND HUMAN RESOURCE
DEVELOPMENT FOR HEALTH IN INDIA**

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ROLE OF PRIVATE SECTOR IN MEDICAL EDUCATION AND HUMAN RESOURCE DEVELOPMENT FOR HEALTH IN INDIA

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[Abstract: This paper examines the growth, geographic distribution, and quality concerns of medical education in India, particularly in the private sector. It is observed that an important feature of the considerable growth of medical education experienced in India, especially after the 1990s, is the significant growth of private medical education. During the last two and a half decades (1990 to 2014), private medical colleges have increased by 405 per cent compared to 72 per cent for government medical colleges and currently, private sector owns more than half of the total medical schools and student enrolments. Interestingly, this growth has occurred primarily in economically better-off and healthier states of India (having three-fourth of the total private medical colleges), while the low-income states are lagging behind though they have poor health indicators. The unequal distribution of medical colleges has resulted regional differences in the access to doctors in the country. Also, there are concerns about the quality of medical graduates produced from the private institutions. The paper suggests policy actions for correcting geographical imbalances in the production and distribution of medical graduates and increasing the density of quality doctors in India.]

Keywords: Medical Education; Private Sector; Human Resources for Health; Regional Spread; India

1. Introduction

Availability of human resource is considered as a critical factor for effective provision and delivery of quality health care to India's vast population. It helps in realising the millennium development goals of improving maternal health and reducing child mortality and to achieve the national health policy goals (Anand and Barnighausen 2004; Mathur and Dua 2005). Also, India's mandate for universal health coverage (UHC) — developing a

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framework for providing easily accessible and affordable health care to all Indians — depends, to a large extent, on adequate and effective health workforce providing care at primary, secondary and tertiary levels. Many studies have argued that the availability of health workers is an important determinant of the health status of populations, i.e. human resources drive health outputs and outcomes, including immunisation levels, outreach of primary care, and, infant, child and maternal survival (WHO 2006; Anand and Barnighausen 2004, 2007; Mitchell et al 2008; Rao et al 2008; Krupp and Madhivanan 2009; Rao et al 2012). However, even with the recognition of the importance of health workforce for accessing better health care, their current availability in India provides a dismal picture.¹ World Health Statistics Report (2014) reveals that in India, between 2006 and 2013, there were 24 health workers per 10,000 population (seven doctors and 17 nurses and midwives) — almost half of the global average of 43 workers per 10,000 population (14 doctors and 29 nursing and midwifery personnel). The availability of human resources (doctors, nurses and midwives) in India is less than the established threshold of 25 health workers per 10,000 population by the Joint Learning Initiative (JLI) of WHO in 2004.² As per the WHO's Global Atlas of the Health Workforce (2010a) data of, India ranked 52 of the 57 countries, facing human resources for health (HRH) crisis.

It is argued that states are struggling with the complexities of escalating human resource costs, additional demand for health workforce, uneven distribution, and skill-mix imbalances in India and the intervention of private sector is suggested as a potential alternative in solving these issues (Jilani et al 2008; Shehnaz 2010, 2011; Davey et al 2014). Thus, in the past several decades, there has been a larger participation of the private sector in building up of the health manpower in India, particularly by establishing a large number of medical and nursing schools. However, there is lack of evidence on how the government of India has managed the opening of markets to the private sector and how this sector contributes to the health system by producing human resources. The overall aim of this study is to analyse the role of private sector in medical education, particularly its growth and geographical distribution. Besides this, the paper also seeks to answer the concern that though privatisation of medical education can widen the scope and availability of medical

¹ According to World Health Organisation (WHO), health workforce can be defined as “all people engaged in actions whose primary intent is to enhance health” (WHO 2006: 1). These include clinical staff such as physicians, nurses, pharmacists, dentists, midwives, allied health professions, and community health workers as well as management and support staff — those who do not deliver services directly but are essential to the performance of health systems, such as managers, ambulance drivers and accountants. However, most of the studies (both in India and elsewhere) in this area have largely focused on examining the issues of physicians, nurses, and midwives.

² Besides the international norm of WHO, the targets set by some important committees established by the Government of India (Bhore Committee 1946; Mudaliar Committee 1961; Bajaj Committee 1987) on health manpower in India are yet to be achieved. For details, see High Level Expert Group Report on Universal Health Coverage for India (2011: 142-143).

professionals in India, can it be an alternative in creating human resources with appropriate skill-mix. More clearly, it examines quality issues in medical education, specifically focusing on the role of MCI. Though it is important to study the importance of HRH in totality and the role of private sector in responding to it, this study, however, has focused particularly on doctors. These are the medical graduates who hold MBBS (Bachelors degree in Medicine and Surgery) degrees from medical institutions recognised by the Medical Council of India (MCI). The paper has used the data obtained from MCI, Ministry of Health and Family Welfare, and World Health Organisation. The discussion on the quality aspect of medical education is based on evidences provided in the literature, major policy documents, and reports of various committees and commissions.

The rest of the paper is organised as follows: section two examines the growth of medical education sector in India and the relative contributions of public and private sectors. It also maps out the regional variations in the distribution of private medical colleges in India. It is followed by a detailed discussion on the availability and distribution of doctors, with special focus on inter-state variations and rural-urban disparity. Section three examines quality issues in medical education, particularly looking at the role of MCI in implementing regulations and improving the quality of private medical education. We conclude with a discussion on major policy implications and the scope for future research in this area.

2. Growth of Medical Colleges in India: Role of Private Sector

India has witnessed a rapid growth in the medical education sector—one of the largest in the world. Starting with 28 teaching institutions at the under graduate level in 1950, we have reached a total of 384 colleges in 2014 with a total intake capacity of about 50,000 medical students. Traditionally, medical colleges in India were largely funded by the government and the contribution of private sector was negligible (Rao et al 2008). But with the implementation of new economic policy of 1991, broadly known as structural adjustment programme (SAP), the trend shifted towards private funding of medical education and the growth of private medical colleges has been phenomenal. The private medical colleges have increased by 405 per cent (from 41 to 209) in the last two and a half decades (1990 to 2014), whereas the government-run medical colleges have increased only by 72 per cent (from 102 to 176), with an overall growth of 169 per cent during this period (*Table-1*). The share of private sector in total number of medical colleges has increased from 3.6 per cent in 1950 to 54.3 per cent in 2014. Similarly, the enrolment share in these colleges currently accounts for more than half (52.1 per cent), in comparison to merely 1.4 per cent in 1950. The annual average growth rate of private medical institutions during 1950 to 2014 is 8.7 per cent compared to 3 per cent in government sector, with a more or less similar growth trend for enrolment figures. Thus, the growth of medical institutions and their intake capacity in India has been driven largely by developments in the private sector and in some states it grew to such a level that in relative size, the public sector became infinitesimally small.

Table-1. Trends in Medical Education, 1950-2014

Year		Institutions			Enrolment/Intake capacity		
		Government	Private	Total	Government	Private	Total
1950	Number	27	1	28	4175	60	4235
	Share	94.4	3.6	100	98.6	1.4	100
1960	Number	56	4	60	7725	610	8335
	Share	93.3	6.7	100	92.7	7.3	100
1970	Number	89	10	99	10925	1350	12275
	Share	89.9	10.1	100	89	11	100
1980	Number	96	14	110	11425	1820	13245
	Share	87.3	12.7	100	86.3	13.7	100
1990	Number	102	41	143	11800	4785	16585
	Share	71.3	28.7	100	71.1	28.9	100
2000	Number	115	61	176	12720	6635	19355
	Share	65.3	34.7	100	65.7	34.3	100
2004	Number	121	100	221	13320	10685	24005
	Share	54.8	45.2	100	55.5	44.5	100
2014	Number	176	209	385	24038	26055	50093
	Share	45.7	54.3	100	47.9	52.1	100
CAGR(1950-2014)		3.0	8.7	4.2	2.8	10.0	3.9

Source: Data for the year 1950 to 2004 is taken from Mahal and Mohanan (2006) and for the year 2014 is from MCI

Note: Figures for the year 2014 are intake capacity and not the enrolment.

Although the involvement of private sector in medical education has spread all over the country, the distribution is found to be quite uneven across different regions. In total, five southern states (Andhra Pradesh, Karnataka, Kerala, and Tamil Nadu) with 21 per cent of the India's total population have nearly half of the medical schools (43.6 per cent) and intake capacity (46.3 per cent). In contrast, 12 states from eastern and northern regions accounting for 45.3 per cent of India's population have only about one-fourth of the total medical institutions and their intake (*Table-2*). It is surprising to note that in Jharkhand, all the three existing medical institutions had established during 1960s and no more college is added to the list afterwards. Similarly, only about 2.8 per cent of the medical colleges (11 in number) with the total intake capacity of 2.2 per cent (1126 students) are located in eight north-eastern states. The population share of these states is 3.76 per cent as per 2011 Census of India. Interestingly, most of the states with less number of medical institutions and intakes (Bihar, Chhattisgarh, Jharkhand, Odisha, Madhya Pradesh, Rajasthan, Uttarakhand, Uttar Pradesh, and Assam) are also the empowered action group (EAG) states that was formed by the Ministry of Health and Family Welfare in March 2001 especially to ensure population stabilisation and intersectoral convergence and these are the states with high fertility rates and weak socio-demographic indicators. Overall, the number of medical institutions and their intake capacity is much higher in states with better health indicators that reflect the distorted distribution of the country's production capacity of health workers.

Table-2. Regional Spread of Medical Institutions and Intakes in India, 2014

<i>Region/State/UT</i>	<i>Institution</i>			<i>Intake</i>		
	<i>Government</i>	<i>Private</i>	<i>Total</i>	<i>Government</i>	<i>Private</i>	<i>Total</i>
<i>Southern</i>	32.39	53.11	43.64	32.82	58.74	46.30
Andhra Pradesh	8.52	13.40	11.17	9.98	14.58	12.38
Karnataka	6.82	16.27	11.95	6.24	20.17	13.48
Kerala	3.98	8.61	6.49	4.58	7.68	6.19
Tamil Nadu	11.93	11.48	11.69	11.09	12.86	12.01
Pondicherry	1.14	3.35	2.34	0.94	3.45	2.25
<i>Western</i>	20.45	20.10	20.26	23.63	19.75	21.61
Goa	0.57	0.00	0.26	0.62	0.00	0.30
Gujarat	5.11	6.22	5.71	6.36	5.37	5.85
Maharashtra	10.80	11.96	11.43	11.23	12.45	11.87
Rajasthan	3.98	1.91	2.86	5.41	1.92	3.59
<i>Northern</i>	19.89	15.79	17.66	18.56	12.07	15.19
Chandigarh	0.57	0.00	0.26	0.42	0.00	0.20
Delhi	3.41	0.96	2.08	3.54	0.77	2.10
Haryana	1.70	1.91	1.82	1.66	1.15	1.40
Himachal Pradesh	1.14	0.48	0.78	0.83	0.58	0.70
Jammu & Kashmir	1.70	0.48	1.04	1.66	0.38	1.00
Punjab	1.70	3.35	2.60	1.87	2.67	2.29
Uttaranchal	1.14	0.96	1.04	0.83	0.96	0.90
Uttar Pradesh	8.52	7.66	8.05	7.75	5.57	6.61
<i>Eastern</i>	16.48	5.74	10.65	15.77	4.26	9.78
Bihar	5.11	1.91	3.38	3.95	1.00	2.42
Jharkhand	1.70	0.00	0.78	1.00	0.00	0.48
Odisha	1.70	2.39	2.08	2.29	1.73	2.00
West Bengal	7.95	1.44	4.42	8.53	1.54	4.89
<i>Central</i>	6.25	3.83	4.94	5.57	4.22	4.87
Chhattisgarh	2.84	0.48	1.56	2.29	0.58	1.40
Madhya Pradesh	3.41	3.35	3.38	3.29	3.65	3.47
<i>North-Eastern</i>	4.55	1.44	2.86	3.64	0.96	2.25
Assam	2.27	0.48	1.30	2.19	0.38	1.25
Manipur	1.14	0.00	0.52	0.83	0.00	0.40
Meghalaya	0.57	0.00	0.26	0.21	0.00	0.10
Sikkim	0.00	0.48	0.26	0.00	0.19	0.10
Tripura	0.57	0.48	0.52	0.42	0.38	0.40
India	100(176)	100(209)	100(385)	100(24038)	100(26055)	100(50093)

Source: Author's estimation from MCI data

Note: Figures in parentheses show the number of institutions and intake capacity respectively

The skewed regional spread of medical colleges and intakes in India are largely due to the unequal spread of the private sector in medical education. In the states of two regions, southern and western, have almost three-fourth of the total private medical institutions in India. Also, these are the richer states with better health outcomes. Fifty-three of the 100 private medical colleges in India are located in five southern states compared to 32.3 per

cent in case of public sector (57 of 176 medical colleges) in 2014. The student's intake capacity of the private medical colleges in this region is 58.7 per cent as compared to 32.8 per cent in government medical colleges. Interestingly, four states (Andhra Pradesh, Karnataka, Maharashtra, and Tamil Nadu) have more than half (53.1 per cent) of the private medical institutions with the enrolment capacity of 60 per cent. But contrary to this, in other four regions (northern, eastern, central, and north-eastern) the presence of private sector in medical education is found to be very less. The share of private medical colleges in two regions (northern and eastern) is only 21.5 per cent (with the intake of 16.3 per cent) as compared to 36.3 per cent (intake capacity of 34.3 per cent) of government medical colleges. Excluding Uttar Pradesh (a state from the northern region), the other 11 states of these two regions have as low as 14 per cent of the total private medical colleges that offer undergraduate courses. It is surprising to note that in the states such as Jharkhand, Goa, Manipur, and Meghalaya and UT of Chandigarh, there is even not a single private medical college yet and some states (Assam, Chhattisgarh, Himachal Pradesh, Jammu and Kashmir, Sikkim, and Tripura) are having only one private college each that have come up in recent years. Similarly, only around 20 per cent of the total private medical colleges are established in the nine EAG states. Therefore, from a regional perspective, northern, eastern and north-eastern regions have a disproportionate number of private medical colleges.

It is important to note that the public expenditure on health in the states with fewer private medical institutions is significantly less and it is even worst on the component of medical education, training and research. In 2004-05, out of the total public expenditure on health, the share spent on medical education, training and research in some of the states with less availability of private medical institutions (namely, Bihar, Madhya Pradesh, Orissa, Rajasthan, and West Bengal) is 11.5 per cent as compared to 14.4 per cent for the states with more number of private medical colleges such as Andhra Pradesh, Gujarat, Karnataka, Kerala, Maharashtra, and Tamil Nadu. Therefore, some states (particularly from northern and eastern regions) are lacking support both from government and private endeavours in establishing new medical institutions. This does not go with the HLEG recommendation of greater focus of public investment for the creation of additional educational institutions in HRH deficient states.

The more detailed analysis, by region and ownership, of medical schools shows that in 2014, around two-third of the total medical colleges in southern region are owned by private sector and in three states (Karnataka, Kerala and Pondicherry) the share is more than 70 per cent (*Table-3*). Similar trend is also observed for students' intake in this region. Interestingly, the intake of students for MBBS course in private medical colleges in Pondicherry and Karnataka is around 80 per cent of the total. Likewise, about 54 per cent of the total medical institutions in western region are privately managed, and in Goa the share is 60 per cent. In contrast, only about 29.2 per cent of the total medical colleges and 22.6 per cent of the total students' intake in eastern region are from the private sector and more or less similar trend is also observed in north-eastern region. In Bihar, Jharkhand, and West Bengal medical education is largely provided by the public sector and the presence of

private sector is quite negligible. Also, only around 20 per cent of the MBBS students in Delhi and Jammu and Kashmir (two states from northern region) have the option to go for private medical colleges, and in Chandigarh, students interested in pursuing medical education completely rely on the public sector. Thus, it is clear from the discussion that the steady increase in medical colleges in India is largely due to rapid growth of the private sector that is concentrated in a few states.

Table-3. Region-Wise Institutions and Intakes in Government and Private Medical Colleges in India, 2014

Region	Institution			Intake		
	Government	Private	Total	Government	Private	Total
Southern	33.93	66.07	100(168)	34.02	65.98	100(23195)
Western	46.15	53.85	100(78)	52.47	47.53	100(10825)
Northern	51.47	48.53	100(68)	58.66	41.34	100(7607)
Eastern	70.73	29.27	100(41)	77.35	22.65	100(4900)
Central	57.89	42.11	100(19)	54.92	45.08	100(2440)
North-Eastern	72.73	27.27	100(11)	77.80	22.20	100(1126)
India	45.71	54.29	100(385)	47.99	52.01	100(50093)

Source: Author's estimation from MCI data

Note: Figures in parentheses show the number of institutions and intake capacity respectively

Out of 385 medical institutions in India in 2014, around two-thirds have been established after 1990. Again, the growth during this period the growth is largely seen in the southern states; the increase is 250 per cent, while the least growth is observed in the eastern region i.e. 86 per cent. Till 1990, medical institutions in India were mostly in the government sector (72.9 per cent) and the presence of private sector was quite negligible. But after 1990 the situation reversed; as out of the total medical institutions established after 1990, more than 70 per cent are from private sector (*Table-4*). The share of private sector in medical education in three regions (northern, eastern, and north-eastern) was less than 10 per cent and surprisingly, in two states of central region (Madhya Pradesh and Chhattisgarh) there were no private medical institutions up to 1990. But during 1991 to 2014 the share crossed to 50 per cent. The role of private sector in southern and western region states was somehow visible till 1990 as its share to total medical institutions was 39 per cent—which has gone up to 75.1 per cent during last 24 years. It is surprising to note that there were no private institutions in Kerala and Pondicherry till 1990 and all the institutions set up after this period were privately owned. Karnataka is the only state where the share of private medical institution has come down from 79 per cent till 1990 to 58.7 per cent after 1990. Thus, the climate of openness and increased privatisation of medical education in India started primarily after 1990 in four regions (i.e. northern, eastern, central, and north-eastern) while in other two regions (southern and western) it had started pretty early. More clearly, out of 39 private medical colleges established in India till 1990, 35 were in southern and western regions and the rest four were in Punjab and Bihar, two colleges in each of the states. Surprisingly, in Maharashtra and Karnataka around half of the private colleges were established before 1990 and some of these had come up in the beginning of 1950s and

1960s, especially in the philanthropic mode. At the other extreme, as many as 22 states and UTs of India (including the bigger states such as Uttar Pradesh, Rajasthan, Madhya Pradesh, and West Bengal) had no private medical institutions till 1990. States where the participation of the private sector was quite late (especially after 2010) includes Assam, Chhattisgarh, and Himachal Pradesh. As argued by Tilak (2014), people with some money in the 1950s and the 1960s used to donate to public institutions or set up philanthropy-based private institutions; today, though, those with even a small fraction of that money prefer to set up a private self-financing college for profit. Therefore, there is a difference within the private medical institutions that were established in 1960s and the 1990s and beyond.

Table-4. Region-wise Medical Institutions in Pre and Post 1990

Region	Up To 1990			After 1990		
	Government	Private	Total	Government	Private	Total
Southern	58.33	41.67	100(48)	24.17	75.83	100(120)
Western	63.41	36.59	100(41)	27.03	72.97	100(37)
Northern	91.30	8.70	100(23)	31.11	68.89	100(45)
Eastern	90.91	9.09	100(22)	47.37	52.63	100(19)
Central	100.00	0.00	100(6)	38.46	61.54	100(13)
North-Eastern	91.11	8.89	100(4)	35.94	64.06	100(7)
India	72.92	27.08	100(143)	29.46	70.54	100(242)

Source: Author's estimation from MCI data

Note: Figures in parentheses show the number of institutions

Besides the government's inability to meet the overwhelming demand for medical education in India (largely due to budgetary constraints and limited infrastructure), some other important explanations for the growth of private sector may include (a) creating conducive environment for privatisation by way of relaxed regulations and permission for establishing medical institutions by MCI, and (b) the large scale of medical tourism practiced in India. It is also argued that migration of doctors and nurses to developed countries is correlated with the fact that India has the greatest number of private medical institutions in the world (Shehnaz 2010). A closer examination of the differential pattern of growth in private medical education across the states provides some specific reasons such as, first, the capacity to pay for costly medical education offered by the private sector may be higher among the students living in better-off states than others; second, in some states it is relatively easy to fulfil MCI norms to establish an institution, for example, in the southern states due to returnee populations of doctors from abroad, the medical colleges have more availability of qualified faculty to teach which meets an important requirement of the MCI; third, there has been an element of competition among states for attracting private investment in medical education and therefore some of the states (particularly states from southern and western regions) have been offering various tax concessions and other special facilities to new investors on a competitive basis.

The Mudaliar Committee set-up by Government of India in 1961 recommended for establishing one medical college for a population of five million. Considering this norm it is

noticed that recently, there is a wide inter-state variation in the availability of medical colleges. All the states from southern region have an excess of medical colleges while many states from eastern and northern regions (also with poor health indicators) such as Uttar Pradesh, Bihar, and Jharkhand have a shortfall (*Table-5*). Two southern states (Karnataka and Tamil Nadu) have more than 30 extra colleges than their requirement while Uttar Pradesh alone still needs 11 more medical colleges to fulfil the Mudaliar Committee norm that was set-up around five decades before, which is primarily due to the large dominance

Table-5. State-wise Number of Required and Existing Medical Colleges, 2014

<i>State/UT</i>	<i>Population 2014 (P) (in millions)</i>	<i>Medical colleges required @ one per 5 million population</i>	<i>Existing number of medical colleges in 2014</i>	<i>Difference</i>
<i>States with more colleges than required</i>				
Andhra Pradesh	86.95	17	43	26
Delhi	20.09	4	8	4
Gujarat	61.33	12	22	10
Karnataka	61.21	12	46	34
Kerala	35.26	7	25	18
Maharashtra	117.2	23	44	21
Pondicherry	1.573	1	9	8
Punjab	28.57	6	10	4
Tamil Nadu	68.65	14	45	31
<i>States with less colleges than required</i>				
Assam	31.69	6	5	-1
Bihar	101.5	20	13	-7
Jharkhand	32.77	7	3	-4
Madhya Pradesh	75.61	15	13	-2
Rajasthan	70.97	14	11	-3
Uttar Pradesh	211.2	42	31	-11

Source: Population figure from National Health Profile 2013, Government of India, 2014a and Medical Institutions from MCI

Note: P stands for provisional

of private sector in some specific states. Though the norm set up by Mudaliar Committee is an old one and the health sector in India has undergone a significant change afterwards, the assessment of the availability of medical colleges according to this norm provides a clear picture on the regional spread of medical education in the country. The HLEG report on UHC (2011) has considered the issue of 'over-medicalisation' and has suggested measures for correcting the severe imbalance in the distribution of medical colleges in India.

3. Availability of Doctors

The rapid growth in the production of health workers such as doctors, dentists, nurses and midwives has not helped to fill vacant positions in the public-health system (Hazarika

2013: 111). Several studies have highlighted that though there is an increase in the overall health workforce in India, there were gross inequalities in the availability of health personnel at the subnational level (Planning Commission 2011; Shehnaz 2011). Till December 2013, the total number of doctors registered with different state medical councils of India was 9,18,303 that gives 7.5 doctors per million population (*Table-6*).³ The number of registered doctors per million population varies widely across states. It is lowest for Jharkhand (1.3) and highest for Goa (17.2). Most of the states belonging to northern and eastern regions of India have less than five doctors per million population whereas most of

Table-6. Cumulative Number of Allopathic Doctors Registered with State Medical Councils, 2013

<i>State Medical Council</i>	<i>Number of registered doctors</i>	<i>Projected population on 2013 (in millions)</i>	<i>No. of registered doctors per million population</i>
With < five registered doctors per million population			
Jharkhand	4373	32.3	1.3
Chhattisgarh	5257	24.9	2.1
Haryana	5717	26.3	2.1
Himachal Pradesh	1896	69.2	2.7
Uttar Pradesh	64,749	207.7	3.1
Bihar	38,260	100.3	3.8
Madhya Pradesh	29,991	74.4	4.0
Odisha	16,786	41.4	4.0
Uttaranchal	4366	10.2	4.2
Rajasthan	32,874	69.9	4.7
With 5–10 registered doctors per million population			
Delhi	9773	19.5	5.0
Assam	20,724	31.3	6.6
West Bengal	62,645	91.1	6.8
Andhra Pradesh	70,799	86.2	8.2
Gujarat	53,376	60.5	8.8
With > 10 registered doctors per million population			
Jammu & Kashmir	12,939	12.0	10.7
Kerala	42,015	35.0	11.9
Maharashtra	1,47,989	115.7	12.7
Tamil Nadu	1,00,165	68.3	14.6
Punjab	42013	28.3	14.8
Karnataka	1,00,440	60.6	16.6
Goa	3215	1.8	17.2
India	9,18,303	1223.6	7.5

Source: Author's calculation from the data of National Health Profile 2013, Government of India, 2014a

³ The figure of registered doctors includes doctors serving in both private and government hospitals till December 31, 2013. It is important to note that the MCI and state medical councils do not maintain a live register with updated figures by taking into account attrition due to death, migration to outside India, and non-practising of medicine by qualified doctors.

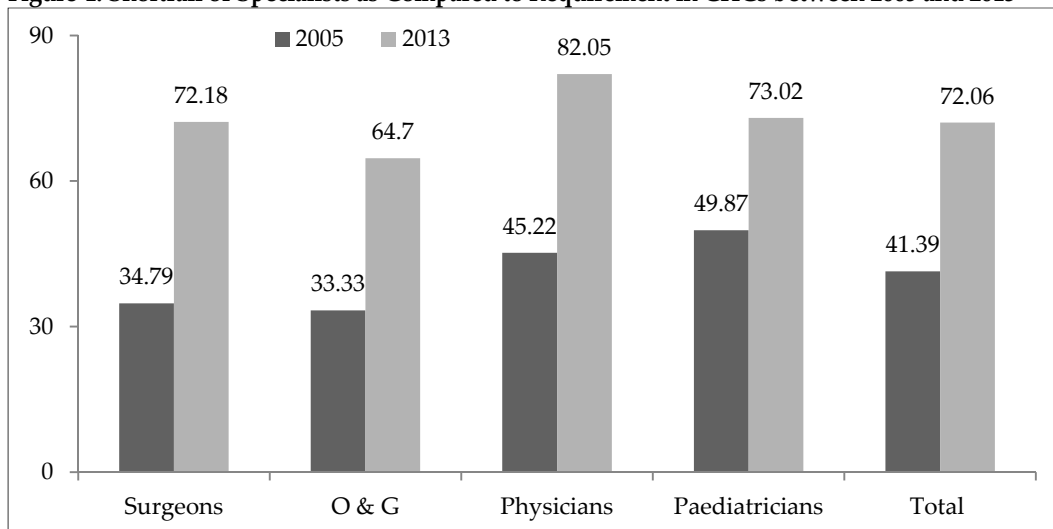
the southern and western states have 5–10 doctors or more than 10 doctors per million population. Using the 2001 Census data, Rao et al (2009) have shown that Goa and Kerala (having more medical schools) have three times higher doctor density than the states like Orissa and Chhattisgarh that have a few medical schools. Thus, the high density of doctors in southern and western region states shows the link between production and availability of doctors. More clearly, states with better availability of medical colleges have higher doctor density compared to the states where less number of medical colleges are available. This supports the finding that a strong relationship is observed between the number of medical schools and the physician density and therefore, establishing more medical institutions in low density areas may improve the situation (Boulet et al. 2007). The missing link between the production and availability of physicians in Andhra Pradesh may be attributed to the internal and international migration of doctors that need to be probed in detail.

The HLEG Report of the Planning Commission (2011: 144) has stated that “the clustering of private colleges around cities exacerbate the shortage of doctors in rural areas”. Not only in India, in many other developing countries also rural areas have insufficient number of health workers, primarily due to the less production of doctors in these locations. Approximately one half of the global population lives in rural areas, but are served by only 38 per cent of the total nursing workforce and by less than a quarter of the total physician workforce (WHO, 2010b: 7). In India also, there is considerable variation in the density of the health workforce between rural and urban regions. The density of total health workforce (doctors, nurse and midwife, dentist, pharmacist and other medical staff) per 10,000 population in urban area is approximately four times higher compared to the rural area, i.e. 42.03 for urban region and 10.78 for rural region. Most importantly, the difference in the density is highest among doctors, 13.34 in urban region and 3.28 in rural region (Rao et al 2009). About 74 per cent of graduate doctors living in urban areas serve only 28 per cent of the national population, while the rural population is largely unserved (Task Force on Medical Education for the National Rural Health Mission, Government of India, 2005a: 9). Due to critical shortage of doctors, unqualified practitioners play an important role in the delivery of health care to a large section of society (Jilani et al 2008). Health care being largely a demand driven service, in rural areas of many Indian states, the shortage of allopathic doctors is met through Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (AYUSH) doctors, and Rural Medical Practitioners (RMPs) who lack formal allopathic training. Rao et al (2012) have found that up to 63 per cent of clinicians practicing in rural India had inadequate or no medical training. The situation is particularly alarming because a relatively small fraction of the country’s health workforce is available in areas where majority of the population resides.

In India, there has been much interest in developing policy solutions (launch of several incentive schemes by the government) to bring and retain health workers, particularly doctors to underserved rural areas. The Task Force on Medical Education for National Rural Health Mission (NRHM) plans steps for the expansion of medical education to address the HRH crisis in rural areas of India. It has recommended measures like

increasing the emoluments of doctors, revamping of medical education from curative to community care, compulsory rural posting, and creating a new cadre of health workers after three years of training. Besides these, the scheme also aims to strengthen primary care human resources by introducing flexibility and financial provision for contractual appointments of 10,000 allopathic doctors, including 2,500 specialists (Planning Commission 2011: 145). Has this mission helped to increase the availability of doctors in rural areas during last eight years of the implementation of NRHM? The data obtained from Rural Health Statistics reveals that between 2005 and 2013, the share of total Primary Health Centers (PHCs) working without doctors has gone up from 3 per cent to 4.4 per cent. The percentage of PHCs without doctors has increased from 7.1 per cent to 10.4 per cent in the major states of northern and eastern regions (Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Odisha, Rajasthan, Uttaranchal, and Uttar Pradesh) while the figure has come down from 1.5 per cent to 0.2 per cent in the states such as Andhra Pradesh, Karnataka, Kerala, Maharashtra, Pondicherry, and Tamil Nadu (having large number of medical colleges) during the last eight years. Surprisingly, the shortfall of doctors compared to requirement in PHCs has increased from 3.8 per cent in 2005 to 9.1 per cent in 2013. Similarly, the shortage of specialists (Surgeons, Obstetricians and Gynaecologists, Physicians, and Paediatricians) has also increased from 41.4 per cent to 72 per cent in the post NRHM period (*Figure-1*). In 2013, there was a shortage of 2,225 doctors at Primary Health centres (PHCs); 14,952 specialists at Community Health Centres (CHCs) (72 per cent of the required number). There is a 37 per cent increase in the shortfall of surgeons (from 34.79 per cent to 72.18 per cent) that is highest among the four specialists, whereas the least

Figure-1. Shortfall of Specialists as Compared to Requirement in CHCs between 2005 and 2013



Source: Author's Estimation from Rural Health Statistics in India 2005 and 2013, Ministry of Health and Family Welfare, Government of India, 2005b, 2014b

has increased for paediatricians (23.15 per cent). In 2013, the percentage shortage of specialists in CHCs of the southern states was found to be lower (77.6 per cent) compared to the major states of northern and eastern regions (84.29 per cent).

In India, medical graduates look forward to practicing in towns and cities and the rural areas fail to attract and retain them (Singh 2005). Many studies have reported that in developing countries, students from private medical institutions are more likely to end up working in urban areas, even though rural medical service is an often emphasised need (Huntington et al 2012). It is also argued that the clustering of private colleges around cities has worsened the shortage of doctors in rural areas as doctors trained in these institutions prefer to serve in nearby towns/cities and hesitate to go to rural areas and even to small towns. In some cases, instead of serving in remote locations they choose to work overseas. The study of Diwan et al (2013), conducted with the cross sectional survey of 792 first year medical students in five public and four private medical schools in the state of Madhya Pradesh, has found that public medical students were more likely to be willing to work in rural areas than private medical school students. The shortage of health workers in rural and remote areas is because of both the disinclination of qualified private providers to work there and the inability of the public sector to attract and adequately staff rural health facilities (Rao et al 2011). The study by Ramani et al (2013) has suggested that in India, to place qualified health workers in rural areas the service conditions need to be attractive for them. It will help to bring health workers into the public sector system and to motivate in-service health workers to remain in rural areas. However, besides these there is also an urgent need to establish medical colleges in rural and semi-urban regions. It is expected that the outturn from these institutions will be interested to work in the areas close to their institutions. To attract private investment in medical education in underserved regions, some states have started a few special incentive schemes. For example, recently the state cabinet of Uttar Pradesh has approved that private players who invest in setting up medical colleges in three divisions (Devipatan, Basti and Mirzapur) where there are no medical colleges will get capital subsidy of up to Rs 200 million (June 18, 2013, *The Indian Express*).

4. Quality of Medical Education in India: Issues and Options

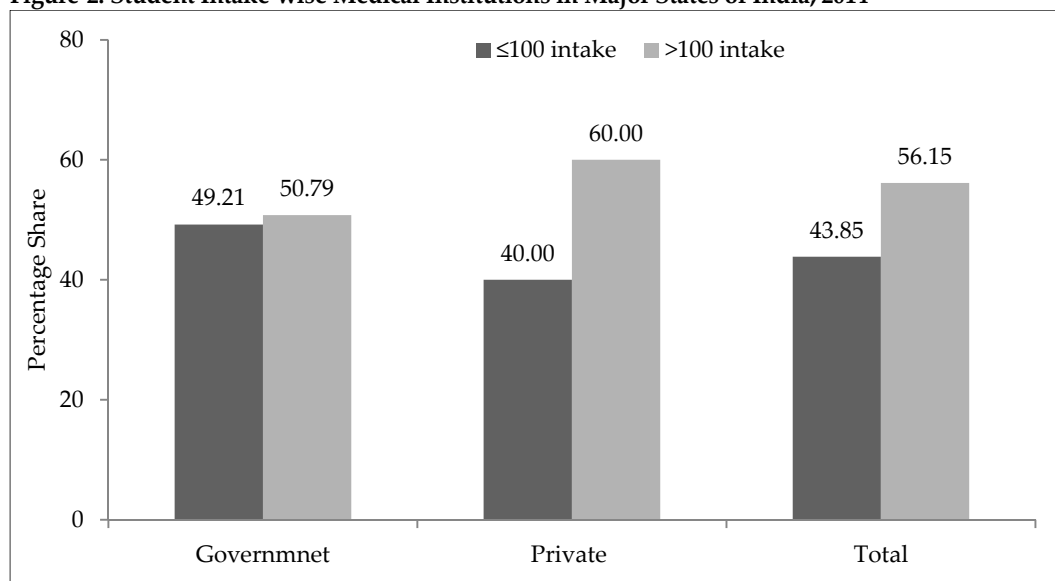
Developing an effective health care delivery system and ensuring universal access to health in a country immensely depend on the nature and quality of medical manpower it produces (Dasgupta 2014). But it is an oft-repeated criticism that medical colleges in India are producing graduates who are not well-equipped to tackle the health care needs of the society (Sood and Adkoli 2000). It has been argued that the unregulated growth of medical education in the private sector and poorly implemented regulations relating to admissions, faculty strength and infrastructure in medical colleges adversely impacts quality of training in India's medical institutions (Vallyamma et al 2009: 46). In this section an attempt is made to discuss quality issues in private medical education with a focus on the role of MCI.

The increase in the training capacity and production of health workforce in India has been largely because of the growth in private-sector involvement in medical education and this trend is likely to increase in the future, since many of the policy documents and some landmark court judgements (both in the health and education sectors) have supported this idea (Government of India 2002; Government of India 2007; Planning Commission 2007; HLEG Report on UHC for India 2011; Delhi High Court Order on Privatisation of Medical Education 2011). Also, the entry of private sector into medical education in India is attributed to a lack of legislation or other regulatory instruments by MCI. The mushrooming of private medical colleges raises concern over irregularities and corrupt practices to secure permission from authorities (Sujatha 2014: 269). While private participation in medical education has helped to overcome the shortcomings resulting from inadequate expansion of the training capacity in the public sector, it has raised questions on the quality of medical training (Hazarika 2013; Rao et al 2011). It is widely felt that the MCI and state medical councils have not been able to universally ensure quality education in medical colleges, particularly in private medical institutions. By law, private medical institutions in India must be organised as non-profit entities with admissions and tuition fees kept within reasonable bounds (Mahal and Mohanan 2006: 1009). But contrary to this, the sharp increase in the number of private medical colleges is motivated by the financial reward offered by the high demand for medical education coupled with high tuition fee (Supe and William 2006). The quality of students admitted to private medical institutions often depends on the paying capacity rather than merit. Though some private institutions have laid down some minimum standards, these are far below the standards set by public institutions. Thus, the quality of graduates coming from private medical institutions is likely to be compromised (Shehnaz 2010). These are run for profit, with serious shortage of faculty, laboratory facilities, and patient load that have led to poor quality education and the production of unskilled health workforce.

There is an acute shortage of teaching manpower in medical colleges, particularly in private colleges, both in the long standing and newly started ones. The shortage of the teachers ranges from 20 per cent to 33 per cent in many departments of medical colleges, which is mainly due to the non-availability of qualified personnel (Ananthakrishnan 2007). Acute shortage of teachers in medical colleges has an adverse impact on the quality of education and it is more severe in pre and para-clinical specialities like Anatomy, Pharmacology, Forensic Medicine and Community Medicine. A confidential inspection report commissioned by the Maharashtra state government's medical education and drugs department reveals that out of the 17 private medical colleges that taught modern medicine, nine were short staffed by between 50 per cent and 63 per cent and further, most of the faculties of these colleges were working on part-time basis. The report points out that in spite of a huge faculty shortage, the MCI has been recognising several private colleges from year to year (Kumar 2004). While a large number of colleges earlier had 50 intakes or less, with the quality of education being the foremost consideration, majority of the colleges established recently have larger intakes (150 and more) which leads to shortage of both teachers to fulfil MCI norms and clinical material for teaching purposes (Ananthakrishnan

2010: 156). In 2014, among the medical colleges in major states of India, 56 per cent have more than 100 intake capacity. As expected, the colleges with more than 100 student intake have come up largely in the private sector (60 per cent) as compared to the government sector (51 per cent) (*Figure-2*).

Figure-2. Student Intake-wise Medical Institutions in Major States of India, 2014



Source: Author's Estimation from MCI data

The quality of medical education largely depends on the active participation of doctors in research, training and other outreach activities. But there is a global concern over the decline in the interest of doctors in research, specifically in devolving and under developed countries. It is argued that in medical institutions in India, research is considered a luxury as there is lack of funds even for routine teaching and service (Deo 2012). Even if it is difficult to assess the quality and quantity of research done by medical college teachers in India due to the lack of information, an indirect measure, i.e. the number of articles from India indexed in PubMed shows that between 1989 and 1993, India contributed only 0.6 per cent of the indexed articles which subsequently increased to 1.5 per cent between 2004 and 2008 (Ananthakrishnan 2010). Though not completely representative, these figures reflect India's quantitative contribution to global medical research. Furthermore, these research outputs have largely come from a handful of medical institutions such as All India Institute of Medical Sciences (AIIMS) and, Post Graduate Institute of Medical Education and Research (PGIMER), Chandigarh; the contributions of remaining institutions are negligible. An Indian Council of Medical Research (ICMR) survey of scientific papers published during 1990-1994 reveals that almost 20 per cent of medical colleges had not published a single paper during this period (Satyanarayana 1998) and subsequent studies have shown that the situation has worsened, i.e. the number of colleges not producing even a single paper has gone up since then, largely due to the mushrooming of new colleges (Deo 2009;

Reddy 2013). Though it is very important to examine the reasons, consequences and possible solutions of the poor state of medical research in India, we feel it needs altogether a separate study and thus is not discussed here in detail.

The curriculum revision of the medical courses plays an important role in imparting quality education to students. The common criticism against the present medical curriculum is that it fails to inculcate appropriate skills and competence among learners to serve the community effectively (Dasgupta 2014). There is hardly any attempt to restructure the curricula of the medical education that is required to keep pace with the changing dynamics of public health, health policy and health demographics. The task force on planning for human resources in the health sector has clearly stated that the present undergraduate medical curriculum is inadequate to turn out well-trained and competent medical professionals. Therefore, the curriculum needs to be reoriented to make it more responsive to the needs of the community so that doctors can deliver effective service in rural or underserved regions. Similarly, the HLEG (2011) has suggested that the health professional education should be directed towards population-based primary and preventive health care instead of being driven by a curative-treatment paradigm. It has also recommended the use of Information Communication Technology (ICT) for standardised teaching across institutions and the development of institutional networks to facilitate and disseminate e-learning packages and resource materials. Similarly, National Knowledge Commission (NKC) has emphasised the need for revision of medical education curriculum by incorporating competency-based pedagogical methods.⁴ The study by Zaman and Rauf (2011) has found that a carefully designed integrated curriculum can help in sensitizing the undergraduate medical students and equip them to identify and address complex issues related to maternal and infant mortality in Pakistan. In India also, the curriculum followed for the training of medical graduates lacks integration between basic sciences and clinical disciplines that is required to provide a meaningful learning experience and also to promote a holistic approach towards patients and their problems (Sood and Adkoli 2000). Are the MCI and medical colleges serious about restructuring the curriculum of medical education in the country? This is an issue need to be examined on an urgent basis.

The MCI is the apex statutory body and is responsible for establishing and maintaining high standards of medical education and recognition of medical qualifications in India. However, in practice, it is only a recommendatory body, without genuine autonomy and authority, which has led to the unregulated expansion of private medical colleges that are supplying low quality human resources for the health sector. The system of regulation practiced by MCI is neither adequate nor appropriate to meet the needs of the profession and over the years it has led to a progressive decline in medical education (Government of India 2007). It has also failed to provide a synergistic approach in addressing the need for

⁴ The objective of establishing National Knowledge Commission by the Government of India in 2005 was to recommend reforms in different issues related to education and for this paper issues pertaining to medical education have been considered.

human resources for health in India by coordinating with the other professional councils like Indian Nursing Council and the Pharmacy Council. Although it is widely advocated that privatisation of medical education is a powerful tool to support public health system by producing the required health professionals, at the same time it should be monitored with stringent implementation of the rules set by MCI so that health of the nation would not be compromised in the long run (Davey et al 2014). The NKC working group report on medical education strongly recommended amendments to the Indian Medical Council Act to make MCI a truly autonomous statutory body and not simply as a recommendatory body to the central government.

5. Conclusion

The paper has raised more questions than it has answered on the issue of private sector involvement in medical education and its role in human resource development for health in India. One of the important reasons for this is the lack of comprehensive information. However, using available information, the study finds that one of the most dominant features of Indian medical education is the rapid expansion of private sector that has led to the two most important issues: (a) regional inequality in the production and distribution of doctors, and (b) supply of low quality doctors to the large pool of health workers in India. The overwhelming increase in the private medical institutions in India is primarily due to the lower public spending on health sector and particularly on medical education and health manpower. The current public expenditure on health (1.3 per cent of GDP) is far more below than the target set-up by HLEG report to spend at least 2.5 per cent of GDP in the end of 12th five year plan. Further in 2004-05, the share of public expenditure on medical education, training and research as a percentage to total health expenditure is only about 14 per cent.

The medical colleges that have come up in the private sector in India are largely concentrated in the better-off provinces, and catering to the need of urban population. The bulk of the growth in private medical education has concentrated in five southern region states such as Andhra Pradesh, Karnataka, Kerala, Pondicherry, and Tamil Nadu; while states like Bihar Chhattisgarh, Jharkhand, Madhya Pradesh, Rajasthan, Uttaranchal and Uttar Pradesh are lagging behind though they have poor health indicators. The uneven distribution of medical colleges has led to severe health system imbalances across states, both in production capacity and in quality of education and training. There is considerable variation in the density of doctors between rural and urban areas which indicates the difficulty rural Indians face in accessing health care. Due to the lack of qualified physicians, people in rural areas rely on unqualified health practitioners, who have either no training or have training in alternative system of medicine, but prescribe allopathic medicines. Majority of the qualified doctors available in the country serve in urban areas and do not have interest to work in rural areas, even with different policies and guidelines (such as launch of several incentive schemes for doctors serving in rural areas, making the service in rural areas mandatory) laid out by the state in this regard. The other important issue

highlighted in the paper relates to the existing deficiencies in the quality of training imparted at private medical colleges, leading to production of doctors who do not possess the requisite skills and competence. The focus of the MCI is mainly on availability of infrastructure and other facilities in these institutions and there is hardly any attempt to evaluate faculty engagement in academic achievements and quality of care. In some cases private medical colleges are not able to comply with the MCI regulations as the private hospital beds that are attached to the medical colleges often lie vacant due to the high cost of the care.

The findings from the study provide a few important suggestions for policy makers and planners of India. Firstly, even though providing health services to rural areas has been a priority, a large percentage of physicians are present in urban areas, and therefore, strategies must be devised to increase the availability of doctors in rural areas. Secondly, restructuring of the MCI and state medical councils is the need of the hour to produce quality doctors in India. When the issue of quality is addressed in relation to the quantitative expansion of medical institutions, the intention is not to minimise the growth, rather it is to draw the attention of the policy makers and other stake holders engaged in this sector to the issue of rapid quantitative expansion without compromising on the quality. While the private sector can provide flexibility in production, government should ensure that the medical graduates produced in such institutions are with the appropriate skills that are required to meet the health needs of the population. Finally, and perhaps most importantly, policies should be devised to reorient private sector for the production of quality medical graduates to meet domestic needs, particularly in the underserved areas.

This work is an initial effort to understand the size, growth and distribution of doctors and the role of private sector in producing them that is extremely important for the purpose of health workforce planning in India. Also, it shares some possible implications of privatisation of medical education in India. From a research perspective, the findings of this study underline some potential areas for future investigation. Some of the frontline research issues include: factors driving the emergence of private sector in medical education, consequences of the growth of private sector on production of quality medical graduates, and analysing the extent of private investment made in the medical education in India. Detailed studies aimed at examining the link between the type of institution (from where the students are getting their training) and their motivations and career aspirations, particularly the willingness to work in rural areas are certainly called for. Since the present study focuses specifically on allopathic doctors/physicians, similar exercise can be carried out for other equally important segments of the health workforce like nurses & midwives, AYUSH practitioners, pharmacists—both at all-India level and with the focus on a particular region or state. In India, these individuals provide most of the healthcare, especially in rural areas that lack physicians.

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- 153 WP2013/04: Currency Concerns under Uncertainty: Case of China, *Sunanda Sen*

* Most of the working papers are downloadable from the institute's website: <http://isidev.nic.in/> or <http://isid.org.in/>

About the ISID

The Institute for Studies in Industrial Development (ISID), successor to the Corporate Studies Group (CSG), is a national-level policy research organization in the public domain and is affiliated to the Indian Council of Social Science Research (ICSSR). Developing on the initial strength of studying India's industrial regulations, ISID has gained varied expertise in the analysis of the issues thrown up by the changing policy environment. The Institute's research and academic activities are organized under the following broad thematic areas: *Industrialization; Corporate Sector; Trade, Investment and Technology; Regulatory Mechanism; Employment; Public Health; Media Studies; and Other Issues.*

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About the PHFI

The Public Health Foundation of India (PHFI) is a public private initiative that has collaboratively evolved through consultations with multiple constituencies including Indian and international academia, state and central governments, multi & bi-lateral agencies and civil society groups. PHFI is a response to redress the limited institutional capacity in India for strengthening training, research and policy development in the area of Public Health.

Structured as an independent foundation, PHFI adopts a broad, integrative approach to public health, tailoring its endeavours to Indian conditions and bearing relevance to countries facing similar challenges and concerns. The PHFI focuses on broad dimensions of public health that encompass promotive, preventive and therapeutic services, many of which are frequently lost sight of in policy planning as well as in popular understanding.

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