Medical Education in India: Who Pays?

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It is with the aid of public resources that medical education and the subsequent production of medical humanpower has consolidated itself. Most of this humanpower finds its way into the private sector. Even worse there has been a sustained migration of doctors mostly to developed countries. This we feel is a serious concern. Public resources must be used for public benefit.

MEDICAL education in India is almost entirely the responsibility of the state. Ironically between 2/3rds and 3/4ths of those qualifying from public financed medical schools participate in the private sector. This means for every three allopathic doctors the government trains at the cost to the public exchequer for its own health services, it also trains seven doctors for the private sector at public cost. Besides this a more or less similar pattern exists for non-allopathic medical education (Ayurveda, Unani, Siddha and Homoeopathy) which together accounts for twice the number of allopathic doctors. As though this drain on the public exchequer is not enough, out of every 100 allopathic doctors going to the private sector between 34 and 57 have been migrating out of the country each year, mostly to developed capitalist ones, and recently also to the Gulf countries. This is indeed gross injustice to the poor Indian masses who have contributed their mite in training these doctors in the hope that they will in turn care for them. However, the focus here is not the dynamics of this injustice, which is so openly and unashamedly practised, but to view in a historical perspective the growth and financing of medical education in India.

Prior to the First Five Year Plan there were 28 medical colleges (unless otherwise specified we mean allopathic), all except one being publicly owned, from which about 2500 doctors graduated every year. By the end of the Second Five Year Plan the number of medical colleges had doubled and the doctor outturn increased 2 $^1/_2$ times, and at the start of the Fourth Five Year Plan the number of medical colleges had quadrupled and doctor outturn increased six times (see table 1 and 2). Most of this growth was in the state sector and with the aid of public resources. After the Fourth Five Year Plan the increase in medical education facilities have been very small but expenditure has increased at a galloping pace.

As of present (1987) there are 123 medical colleges in the country with 102 being owned and run by the government or other public bodies like the municipal corporations (four colleges) and universities (three colleges). The remaining 21 colleges are owned and run by private bodies, with most of them getting some financial assistance or subsidies or support from the state in conducting the colleges. Thus, it is largely with the aid of public resources that medical education and the subsequent production of medical human-power has consolidated itself.

This drain of public resources, especially of doctors is only one dimension of the expropriation of medical education, the other is the concentration of the outturns from medical colleges in the urban areas (see table 3), even in the state health sector which can be seen. Between 1952 and 1983 the number of hospital beds had increased 3 1/2 times but as a ratio to the population it had increased barely twice. Thus in the first plan period there was one hospital bed for 2717 population but in 1983 the availability of beds had increased to one bed for 1362 population. But, this aggregate picture is misleading because of the concentration of available facilities in urban areas.

Thus between the first and sixth plan periods the availability of hospital beds changed from one per 706 population to one per 395 in the urban areas in comparison to rural areas where the change was from 9438 population per bed to 5937 population. Since the distribution of medical humanpower data is not available in a disaggregated form the distribution of hospital beds may be assumed as an indirect indicator. Thus in the first plan period only 39 percent of hospitals and 23 percent of beds were in rural areas when 80 percent of the population lived there. In contrast in 1983 when about 76 percent of the population was in rural areas the availability of medical care facilities in comparison to urban areas had declined to 26 percent of hospitals and 17 percent of beds in rural areas. In 1987 the number of hospital beds in rural areas declined further (from 1894 in 1983 to 1633 in 1987) accounting for only 21 percent of all hospitals, the proportion of beds stayed at around 17 percent. In the case of government hospitals the situation is equally bad— in 1983 of all government hospitals a quarter were in rural areas and of all hospital beds in the state sector only 10 percent were in rural areas (CBHI/GOI, 1985). While there is no direct data of medical humanpower available, except 1981 census data — according to the 1981 census of all working (main earners) allopathic doctors only 28 percent worked in rural areas and of all nurses and midwives 38 percent were in rural areas (Census/GOI, 1987).

Besides allopathic services and humanpower there are non-allopathic institutions and humanpower— ayurveda, unani, siddha and homoeopathy. In terms of health care facilities (hospital and dispensaries) in these systems of medicine, the ratio to allopathic facilities is fairly small but humanpower of these systems of medicine is far larger than that of the allopathic (see Tables 3 and 4). Also, in comparison to allopathic doctors, a much larger proportion of non-allopathic doctors are found in rural areas —56 percent according to the 1981 census. Thus in the year

1986-87 there were totally 830, 400 doctors of all systems of medicine, besides 210,000 nurses and over 10,000 dentists (see Table 4). In addition to this in the same year there were 372,140 paramedics (ANMs, MPWs, Midwives and LHVs) (CBHI/GOI, 1988). If we take doctors of all the systems and calculate the ratio of doctors to population we find that in India one doctor exists for every 935 persons, and assuming the rural/urban distribution of the 1981 census we estimate that in 1986-87 for rural areas there is one doctor per 1574 persons (for allopathic one per 6116 persons) and for urban areas there is one doctor per 421 persons (for allopathic one per 793 persons).

Thus it is amply clear that humanpower resources in the health sector as regards the number of doctors is quite adequate, establishing the fact that medical education in terms of supply of doctors has kept pace with the growth of population and is today at a level (or supply) that is sufficient to meet the needs of the country's population. However, the hitch is that it does not meet the needs of the people because a large majority of doctors take up private practice, concentrate in urban areas or migrate abroad — in fact, more allopathic doctors migrate abroad than go to rural areas of India.

As stated earlier, medical education in India has been almost wholly financed by the public exchequer. This money comes mostly from tax revenue collected by the government from the people. Direct payment by students in the form of fees etc is presently very small.

Before we look at the data on medical education expenditure it will be in order to explain in some detail the structure of the state health sector financing.

State health expenditure is divided into three major heads called 'medical', 'public health' and 'family welfare'. 'Medical' is further divided into 'allopathy' and 'other systems of medicine' (non-allopathic). The main sub-heads under allopathy are (a) direction and administration (b) medical relief (c) education, training and research (d) ESIS and CGHS (e) and other sub-heads, and under 'other systems' there are separate sub-heads for ayurveda, unani, siddha and homoeopathy. 'Public Health' is divided into 'Public health and sanitation' and 'sewerage and water supply'— the former being mainly expenditure on communicable diseases prevention programmes and the latter mainly rural and urban water supply schemes. The 'Family Welfare' account includes expenditure on rural and urban family planning services and maternity and child health services.

All the three accounts have a 'capital outlay' section which is mostly construction activity. Thus, under 'medical' the main sub-heads are construction, expansion and improvement of (a) hospitals, dispensaries and health centres and (b) medical colleges. Under 'public health' it includes almost entirely water supply schemes and under 'family welfare' construction of family planning centres.

In this article we are concerned with the sub-head 'medical education' under the medical account section. The data on state expenditure on medical education being analysed here is for the period 1951-52 to 1982-83, a total of 32 years, from the First Five Year Plan to the middle of the Sixth Five Year Plan. The expenditure reported here is 'revenue expenditure'— that is, expenditure incurred out of revenues collected by the state and covers the union government and all state and union territory governments. This expenditure includes only the component spent on medical, dental and nursing colleges. The hospital and other supportive services needed for medical and nursing education are not included in this amount—this component of expenditure is not available separately. Capital expenditure is excluded from 'medical education expenditure'. We will deal with this separately.

Between 1951-52 and 1982-83 the state's expenditure on medical education has been substantial. It has seen a healthy growth of 2.8 percent per year in sharp contrast to 1.4 percent growth rate of total state health expenditure and only 1.24 percent growth of total government expenditure (CAG/GOI, various years).

At this stage we would like to emphasise that it is not possible to calculate how much is spent on training of each medical person because detailed breakups of expenditure on each category of personnel are not available and the supportive, administrative and hospital costs incurred for training are also not known. Performance budget states may provide this information but for macro analysis this information is too voluminous to put together because it is available for each college separately. Even here,

Table 1 : Medical Education Infrastructure 1951-52 to 1986-87 (figures at end of period)

Reference years	Medical Colleges		Nursing institutions	Dental colleges
	Number	Percent Private		
Plan I 1952-56	41	7.3	241	7
Plan II 1957-61	60	5.0	208	12
Plan III 1962-66	87	9.2	254	14
Plan holiday 1967-69	94	9.6	259	15
Plan IV 1970-74	105	8.6	270	15
Plan V 1975-79	106	8.5	283	17
Plan VI 1980-83 @	111	10.8	324	25
1986-87	123	17.0	374	26

@ 4 year period including 1979-80 annual plan and first three years of Sixth Plan.

Source : *Health Information of India* (earlier called *Health Statistics of India* and *Pocket Book of Health Statistics*), CBHI, GOI, various years.

however, the supportive costs cannot be known—only field studies at the teaching hospital level will help in breaking down these costs. For instance, in Maharashtra, of the total expenditure on medical education for the years 1981 to 1989 on an average 84 percent was spent on training of MBBS doctors and the rest on other personnel (see Table 6). If we assume this proportion for India for the year 1983 then the cost per doctor to the state for only the medical college component works out to Rs. 84951.78. In the same year, given the average cost of Rs. 50 million per medical college and teaching hospital (on the basis of data for Maharashtra) the annual cost per qualifying student for the teaching hospital (excluding medical college expenditure indicated above) works out to Rs. 372,312.35. Let us also assume that this entire cost is necessary for training of medical humanpower. Taking the same proportion of 84 percent as expenditure for MBBS doctor training Rs. 312,742.37 becomes the teaching hospital cost per doctor and the total cost per doctor totalling to Rs. 397,694.5 (Please note that we are taking one year's expenditure on medical education and teaching hospitals to be the cost of the $4^{1}/_{2}$ years. This method is perfectly okay because in any one year there are 5 batches of medical students. Thus if we divide the above figure by five we will get per medical student cost per year and if we again multiply by $4\ ^{1}/_{2}$ -we prefer 5 — we come back to the same figure). Whether this approach is correct is debatable but the fact that a supportive structure of a teaching hospital is needed for medical education cannot be discounted. Whether the present type of teaching hospital is the right type is a different question altogether but the inclusion of the entire cost of teaching hospitals as part of medical education, we feel, is perfectly justified — and this cost today (1988) in Maharashtra is Rs. 80 million per teaching hospital (for JJ Hospital and Grant Medical College, Bombay the cost is Rs. 150 million). Besides, administrative and capital costs have not been included.

In the First Plan period the state spent Rs. 66.4 million on medical education. (See Table 5) During this period 12,520 MBBS doctors, 657 postgraduates, 142 dentists and 9345 nurses and general nurses qualified from the 41 medical colleges, 7 dental colleges and 241 nursing schools/centres. (Table 1 and 2). This expenditure working out to Rs. 13.28 million per year, was 5.3 percent of all expenditure on medical services by the state and 3.5 percent of the expenditure on total health care (including FP, public health and water supply) spent by the state. (Table 5). More than one - half of this expenditure was by the union government and the three provinces of Bombay, (Gujarat and Maharashtra) West Bengal and Madras (Tamil Nadu). This concentration of expenditure in these provinces continues even today. (See Table 7).

Table 2 : Outturn of Medical Personnel 1951-52 to 1982-83

Reference years	MBBS Doctors	Dentists	Post-graduates (Medical & Dentist)	Nurses (BSc)	General Nurses	Nurse/ Doctor Outturn Ratio
Plan I	12520	145	657	132	9213	1:1.34
	(2504)	(29)	(131)	(26)	(1843)	
Plan II	16047	579	1708	141	12196	1:1.30
	(3209)	(116)	(342)	(28)	(2439)	
Plan III	24631	1210	4002	286	20355	1:1.19
	(4926)	(242)	(800)	(57)	(4011)	
Plan Holiday	26494	1015	3866	290	16284	1:1.60
	(8831)	(350)	(1289)	(97)	(5428)	
Plan IV	55818	2338	8198	570	28981	1:1.89
	(11164)	(468)	(1640)	(114)	(5796)	
Plan V	63350	2410	15860	976	29891	1:2.05
	(12670)	(482)	(3172)	(195)	(5978)	
Plan VI @	46870	2133	17296	1032	30501	1:1.49
	(11718)	(533)	(4324)	(258)	(7625)	

@ 4 year period including 1979-80 annual plan and 1st three years of Sixth Plan period
Figures are total for period, and parentheses figures are annual average.

Source : *Health Information of India* (earlier called *Health Statistics of India* and *Pocket Book of Health Statistics*). CBHI, GOI, various years.

In the Second Plan period, expenditure on medical education almost tripled in contrast to less than doubling of health expenditure. The average annual expenditure on medical education during this period had increased to Rs. 38.04 million which was 8.3 percent of state health expenditure. (Table 5) This is reflected in the 46 percent increase in the number of medical colleges, a 28 percent increase in outturn of MBBS doctors and over 2 $^1/_2$ times increase in post-graduates.

Between the Second and Third Plan periods state medical expenditure leaped again by 2 $^1/_2$ times averaging Rs. 93.3 million per year during the Third Plan period. The number of medical colleges had more than doubled now in comparison to the First Plan Period, and the outturn too had leaped to 24631 from 16047 in the Second Plan — a 53 percent increase. The post-graduate outturn again increased at a much faster rate of 134 percent between the Second and Third Plans. Medical education expenditure in the Third Plan period, increased to 12 percent of medical services expenditure and 7 percent of health care expenditure. (Table 5).

The pattern of growth continued through the Plan Holiday and Fourth Plan period when state expenditure on medical education was 14.3 percent and 16 percent respectively, of state medical services expenditure (Table 5). By the end of the Fourth Plan there were 105 medical colleges in India (96 owned by public bodies) and the outturn of medical graduates in the Fourth Plan period was 55,818 medical graduates and 8198 post graduates. By this time the production of dentists had picked up and every year about 468 dentists were qualifying. However, the growth in the production of nurses remained slack, as even in the Fourth Plan period only one nurse was being produced for every two MBBS doctors. (Table 2).

The situation in the Fifth and Sixth Plans did not change very drastically. Between the Fourth and Fifth period the production of post graduates almost doubled. The ratio of production of nurses to doctors worsened in the Fifth Plan, though improving slightly in the Sixth Plan (Table 2). The expenditure on medical education in these two Plans stabilized at about 13 percent of medical services expenditure and 7 percent of health care expenditure. The average annual expenditure on medical education in the Fifth and Sixth Plan was Rs. 60.8.94 million and Rs. 1187.43 million, respectively (Table 5). Today (1988) this expenditure is about Rs. 3000 million (estimated by author) and against this about 13,000 medical graduates, 4500 postgraduates, 700 dentists and 10,00 nurses are being produced. Besides this there is capital expenditure incurred every year. This data in the national accounts is available only from 1974. Thus in the 5th and 6th Plan periods if capital expenditure on medical education is added to the medical education expenditure, we see that capital expenditure accounts for 10.5 percent and 19 percent of this combined expenditure, respectively, increasing the 5th and 6th Plan annual expenditure to Rs. 680.17 million and Rs. 1467.07. million, respectively. (Table 5). This is a phenomenal expenditure when we consider the fact that between 80 percent to 85 percent of this goes in production of medical graduates and that 75 percent of these graduates go to the private sector. By any standard this is a phenomenal drain on the resources of the public exchequer.

As if this is not enough there is another aspect of this drain of resources. Since the First Plan period the migration of doctors to other countries, especially developed ones, has been very high. In the First Plan period 810 doctors were migrating every year. In 1986-87 this figure had reached 5304. (Table 8). At this figure in comparison the outturn of medical graduates than in the First Plan, 32.35 percent of doctors migrated abroad and in 1986-87 40.8 percent did so. This high rate of migration is very closely linked to imperialism. Our entire medical

Table 3 : Medical Care Facilities (Public and Private) 1951-52 to 1986-87

Reference years	Hospitals	Dispensaries	PHCs (only rural)	Hospital Beds (excluding PHC)	Population (millio
Plan I	3307 (39.3)	7194 (84.0)	725 (23.0)	145297	379
Plan II	3054 (32.8)	9406 (53.3)	2695 (15.8)	229634	409
Plan III	3971 (32.5)	10231 (78.9)	4631 (18.0)	306518	464
Plan Holiday	4023 (30.7)	10440 (79.1)	4919 (21.0)	328323	506
Plan IV	4014 (25.2)	10200 (71.6)	5283 (21.0)	355361	554
Plan V	6168 (29.1)	15968 (69.8)	5423 (17.4)	476942	620
Plan VI @	7181 (26.4)	21780 (59.4)	7210 (17.4)	53637	687
1986-87	7764 (21.0)	25871 (53.2)	14145	594747 (17.6)	776

@ 4 year period including 1979-80 annual plan and 1st three years of Sixth Plan Period. Figures at end of period.

Figures in brackets are percent rural.

Source : Health Information of India (earlier called *Health Statistics of India* and *Pocket Book of Health Statistics*). CBHI, GOI, various years. *Statistical Abstract of India* —1984, CSD, GOI, 1985.

education curriculum is western oriented. Doctors are trained in a system which best suits the system of developed capitalist countries. This encourages migration. Not only this but international funding and via it policy too plays its role in causing the continuation of the existing system. For instance all the schools of medical excellence (AIIMS, PGIMR etc.) have been set up with assistance of imperialist agencies. As an example, between 1950 and 1974, nearly 99 percent of all health sector assistance by the Rockefeller Foundation to India went to medical education and research, including attractive fellowships for study abroad (Rockefeller Foundation, various years). Thus, not only do doctors go to the private sector but a significantly large number migrate to other countries as well.

This, we, feel is a serious concern. We are not against the investment of medical education; in fact, if necessary, investment must be increased. What is wrong is the drain of public resources for the benefit of the private sector and of imperialism (through migration). To conclude we feel that the outturn of medical education needs to be regulated. Public resources must be used for public benefit only— this should be the principle in regulation. The mix of expenditure also needs to be changed. More resources have to be committed to the production of nursing professionals whose numbers are only one-fourth of what should exist in India today. Thus a drastic change is needed in the investment and expenditure policy for medical education in India to change radically the growth patterns of medical education and expenditure on it. This change is even more urgent presently, given the wave of privatisation. In 1988, for instance, 13 new medical colleges have been sanctioned, bringing the total to 146 medical colleges; and the striking feature of this is that 12 of these colleges were in the private sector. The danger here is that even private colleges are funded through public finances. Like education in general, this is also true of medical education.

Table 4 : Medical Humanpower 1951-52 to 1986-87

Number Registered at End of Period

Reference years	Allopathic Doctors	Dentist	Nurses	Homeopaths	Ayurveds	Unani	Siddha
Plan I	76904	3003	24724	NA	NA	NA	NA
Plan II	85784	4181	39350	27468	73382	NA	NA
Plan III	111580	4731	59914	NA	NA	NA	NA
Plan Holiday	138744	5485	77824	110514	155828	24530	15413
Plan IV	200003	6559	106751	145434	223109	30400	18128
Plan V	255138	8487	154230	112638	233824	28737	18357
Plan VI @	297228	8725	170888	123852	251071	28382	11532
1986-87 *	340000	10000	210000	150000	300000	28800	11600

@ 4 year period including 1979-80 annual plan and 1st three years of Sixth Plan period

* estimated by author.

NA = Not available

Note : The registered data, with the exception of dentists, is not vey reliable.

Source : Same as Table 1.

Table 5: Medical Education Expenditure 1951-52 to 1982-83

Reference Years	Medical education Expenditure		Receipts on a/c of medical education (fees etc)	Percent of expenditure received as fees etc.	Medical Education Expenditure as percent of	
	Revenue a/c	Capital a/c			Medical Service Expenditure	Total Health Expenditure
Plan I	66.4 (13.28)	—	19.05 (3.81)	28.7	5.33	3.47
Plan II	190.2 (38.04)	—	23.9 (4.78)	12.6	8.25	5.20
Plan III	466.5 (93.3)	—	44.85 (8.97)	9.6	11.99	7.01
Plan holiday	486.06 (162.02)	—	40.92 (13.64)	8.4	14.28	7.14
Plan IV	1319.95 (263.99)	—	76.60 (15.32)	5.8	16.06	7.25
Plan V	3044.70 (608.94)	356.15 (71.23)	76.95 (15.39)	2.5	12.79	7.21
Plan VI	4749.72 (1187.43)	1118.56 (279.64)	76.28 (19.07)	1.7	13.33	6.95

Figures are total for period in Rupees million. Figures in brackets are annual average. @ 4 year period including 1979-80 annual plan and 1st three years of Sixth Plan period.

Source: *Combined Finance and Revenue Accounts* 1951-52 to 1982-83, Comptroller and Auditor General of India, GOI, various years.

Table 6 : Medical Education and Teaching Hospital Expenditure in Maharashtra : 1981-1989

Rupees in Millions

Reference Year	Medical Education Expenditure (1)	Medical Colleges Expenditure (2)	Teaching Hospitals Expenditure (3)	Total Medical Education Expenditure (1+3)	Column 2 as percent of column 1
1981-82	112.49	97.71	239.03	351.52	86.9
1982-83	122.21	104.63	241.87	364.08	85.6
1983-84	143.70	121.54	272.46	416.16	84.6
1984-85	150.24	124.96	299.83	450.07	83.2
1985-86	162.11	138.82	334.69	496.80	85.6
1986-87	186.68	158.11	399.41	586.09	84.7
1987-88*	203.48	172.39	447.78	651.26	84.7
1988-89@	244.87	192.32	393.67	638.54	78.5

* Revised estimate
@ Budget estimate

Note: Expenditure only for eight government owned medical colleges, excludes 3 municipal owned colleges of Bombay and 1 private college.

Source : *Performance Budget* of Department of Medical Education and Drugs, Ministry of Health and Family Welfare, Government of Maharashtra, 1983-84 to 1988-89.

Table 7 : Medical Education Expenditure in Selected Major States 1951-51 to 1982-83

State	Plan I 1952-56	Plan II 1957-61	Plan III 1962-66	Plan Holiday 1967-69	Plan IV 1970-74	Plan V 1975-79	Plan VI@ 1980-83
Union Government	0.94	1.27	5.24	12.71	16.62	149.00	295.33
Maharashtra	2.24	7.08	9.22	11.92	23.08	48.92	112.41
Gujarat	(included in Maharashtra)		4.11	8.35	13.80	22.62	47.43
Tamil Nadu	2.51	2.18	6.44	13.18	25.91	46.30	77.00
West Bengal	1.31	1.65	2.91	8.36	13.24	37.73	68.17
Percent share of above govts.	52.7	31.9	30.0	34.0	35.1	50.0	50.1
Andhra Pradesh	0.58	5.36	10.36	14.56	20.63	38.97	75.04
Karnataka	0.02	1.09	4.91	6.56	11.37	29.20	60.15
Kerala	0.30	1.98	5.18	9.76	13.69	26.34	52.94
Goa, Daman & Diu	—	—	1.25	4.10	8.03	4.40	6.32
Uttar Pradesh	0.69	0.81	4.59	8.47	15.25	43.44	59.43
Madhya Pradesh	1.72	2.89	5.82	8.74	11.87	25.73	40.99
Bihar	0.32	2.38	3.58	5.22	9.27	15.96	42.53
Rajasthan	0.21	1.44	4.49	10.59	16.30	25.97	46.11
Orissa	0.35	3.17	8.18	14.00	24.07	16.54	26.22
Assam	0.78	1.59	6.12	12.80	19.34	12.87	20.28
Punjab	0.98	2.39	9.55	7.22	8.98	19.62	36.40
Haryana		(included in Punjab)		1.67	5.13	20.78	38.47
Jammu and Kashmir	—	—	1.16	2.23	3.89	12.84	58.38
Other States & Union territory	0.33	2.76	0.09	1.08	3.52	11.71	23.83
INDIAN TOTAL	13.28	38.04	93.30	162.02	263.99	608.94	1187.43

Figures are Annual Average of Period in Rupees Millions.
@ 4 year period including 1979-80 annual plan and first three years of 6th plan.

Source: Same as Table 5.

Table 8: Migration of Doctors to Other Countries: 1951-52 to 1986-87

Reference Years	No. of Doctors Migrating	Annual Average
Plan I	4050	810
Plan II	5175	1035
Plan III	5950	1190
Plan Holiday	7200	2400
Plan IV	15450	3090
Plan V	21300	4260
Plan VI @	18548	4637
1986-87	5304	5304

@ 4 year period including 1979-80 annual plans and first three years of Sixth Plan.

Source : *Health Information of India*, CBHI, various years
The Brain Drain Study: Phase I — Analysis of ordinary passport issued during 1960-67, IANR, 1970.

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