

# Public Private Partnership for Healthcare Infrastructure: A Critique

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The new paradigm of development in health care has shifted the curative and rehabilitation principles into prevention and promotion of health care; it is also meant to empower people for self care to have healthy life style. Health for all is meant for everybody over ages, demography, sex and society. The healthcare sector in India is today at the point of inflection in transforming the delivery setting in terms of the formats, quality of care, affordability and geographical access. The delivery capacity of India's healthcare industry has not been able to match up with the burgeoning population and socio economic changes due to shortages of infrastructure. The shortage of infrastructure, manpower and services in health sector in India is mainly attributable to the large gap in overall development between rural and urban areas. This gap levies substantial disincentive on health manpower for working in rural areas. India needs an annual incremental addition of healthcare facilities equivalent to almost half of what UK or France or Italy may need for their entire populations. Against a world average of 3.96 hospital beds per 1000 population, Russia has 9.7, Brazil has 2.6, China has 2.2, and India languishes at just over 0.7 indicating the big gap. Just to bring the availability of the beds to 1.7 per thousand from the current levels, it is required to create a million or more new beds, requiring substantial financial investment. In these circumstances, it is very difficult to imagine fresh capital formation of this magnitude anytime in the near future, since, generating adequate return on investment under current healthcare sector dynamics is a huge challenge.

An attempt has been made in this paper to identify the issues or quantum of the problem related with Indian Healthcare Infrastructure and how newer modes of financing including Private Equity infusion i.e. PPP and could contribute to this massive task of infrastructure building in this vital sector.

## Introduction

Good health is universally acknowledged to be of intrinsic value and therefore constitutes an integral element of development. One can be rich but sick enough to not enjoy any opportunities that wealth opens up, and poor health may translate into worsening economic opportunities as well. In fact, one can also be healthy but too poor to pursue valued objectives.

In the health care segment, stagnant public spending on health, less than 1 percent of GDP, places India among the bottom of 20 percent of countries. Most low-income countries spend more than India, where current levels are far below what is needed to provide basic health care to the population. The bulk of public spending on primary health care has been spread too thinly to be fully effective, while the referral linkages to secondary care have been suffered. As in other countries, preventive health services take a back seat to curative care.

The growing demand for quality healthcare and the absence of appropriate infrastructure pose a challenge both to the government and private healthcare delivery providers. Over the last five decades, India has built up a vast health infrastructure and manpower at primary, secondary and tertiary care in government, voluntary and private sectors. These institutions are manned by professionals and Para-professionals trained in the medical colleges. Currently, private sector health services range from those provided by large corporate hospitals, smaller hospitals / nursing homes to clinics / dispensaries run by qualified personnel.

The healthcare sector in India is witnessing a surge of activity and the beginning of what is seen as a rapid phase of growth. Emerging healthcare segments like diagnostic chains, medical device manufactures as well as hospital chains are increasingly attracting investments from a variety of venture capitalists. At a broader level, this trend in healthcare is often seen as

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a manifestation of the overall surge in private equity and also growing interest among private equity funds for Indian companies. The capital and expertise of private equity act as a catalyst for creating enterprise value. Healthcare is poised to be a new driver of growth for economy. Given the geographical access required for delivering care and the fact that infrastructure has to be spatially distributed. Further, infusion of advanced information technologies and related developments in the healthcare domain leads to change, though exciting, presents new challenges pertaining to affordability of technology, availability of IT skilled medical workforce, use of data standards and interoperability.

Healthcare could greatly enhance the 'Brand Perception' of the country. No wonder that all prospective stakeholders are excited at the very thought of this market. Clearly, some of the most exciting laps of the healthcare race will be run in India in the coming years.

### **Country of Paradoxes: India's Healthcare System**

If one tries to understand health system prevailing in India he finds that Country has considerable Healthcare Resources i.e. India is one of the countries having larger number of medical colleges in the world; producing large number of doctors exported to many countries and is considered among the best in the world. India gets 'Medical tourists' from many developed countries reflecting the high standard of medical skill and expertise here. Tourists seek care in its state-of-the-art, high-tech hospitals which compare with the best in the world. Turning to medicines, India is the largest producer of drugs by volume in the world and is among one of the largest exporter of drugs in the world. Despite the existence of such impressive healthcare resources, majority of citizens has very limited access to quality healthcare, and has poor health indicators, there are low levels of immunization, massive inequities in access to healthcare, about two-thirds of the population lack access to essential drugs, a large private sector

leads to high profit motives of private providers, even the middle class cannot easily afford major investigations, hospitalization and operations. Why Indian populations are worse off in this respect even compared to other developing countries?

There seems to be something deeply wrong with our entire Healthcare system. It is possible to organize our healthcare system differently, so that today every community, every family and every person in our country can be assured of decent healthcare. Some other developing countries have shown the way, and have made universal access to decent healthcare for their population a reality (National Coordination Committee, Jan Swasthya Abhiyan, 2006).

### **Long Standing Weaknesses of the Public Health System of India:**

In India during British rule, state and philanthropic intervention played a significant role in healthcare, though most of these facilities were located in large towns, thus projecting a clear urban bias and neglect of the rural population. Modern medicine gradually undermined systems of Ayurveda and Unani, and those traditional practitioners who survived often concentrated in the small towns and rural areas where modern medicine had not yet penetrated. Despite the Bhore committee's recommendations at the dawn of independence towards correcting the rural-urban imbalance and suggestion of integrated planning for increasing access to health services, even post independence the weakness of public health services in rural areas and growth of private practice continued.

Public health remained a low priority in successive five-year plans and public health efforts remained focused on specific vertical programmes, of which the Family Planning programme was the most prominent. This contributed to the slow and inadequate improvement in health of the population. It may be noted that until 1983 India had no formal health policy; the planning process and various committees appointed from time to time provided

most of the inputs for the formulation of health programme design.

This unsatisfactory situation was recognized in the National Health Policy of 1983, which was critical of the curative-oriented western, urban-based model of healthcare, and emphasized a primary healthcare approach. Although, significant expansion of healthcare infrastructure did take place during the 1980s, this remained grossly underutilized because of poor facilities and low attendance by medical staff, inadequate supplies, insufficient hours, lack of community involvement and lack of proper monitoring mechanisms.

This already unsatisfactory situation seriously worsened with the inception of globalisation-liberalisation-privatisation from 1990s onwards. A new National Health Policy was announced in 2002, which acknowledged that the public healthcare system is grossly deficient on various fronts and resource allocations are generally insufficient. Thus the phase of privatisation-liberalisation has witnessed staggering health inequities, revival of communicable diseases and an even more unregulated drug industry with drug prices shooting up, adding up to the current crisis in public health.

A much overdue response to this situation, with certain positive features but overwhelmed with its own contradictions, was launched in the form of NRHM in 2005. One can conclude that the objective of universal access to good quality, appropriate healthcare, envisaged over half a century ago at the dawn of Independence, today remains unrealized. Public health has effectively remained a low priority for the Indian state in terms of financing and political attention. Consequently, there has been a major and growing divergence between the policy rhetoric (such as the Alma Ata Declaration) and actual implementation. Moving in to occupy the interruption, there has been a massive growth of the private sector, which is unaffordable for a large section of the population, and which lacks any regulation and standardization (National

Coordination Committee, Jan Swasthya Abhiyan, 2006).

## **A Brief Review of Health Sector of India**

The efforts of Government of India for providing the safer and healthy environment can be witnessed in form of an in the introduction of various Government programmes, policies, and legislations implemented from time to time.

An attempt to put forward a cursory overview on the health care sector of India is being made in this part on basis of available factual data concerning health care indicators of India, infrastructure for health, and expenditure incurred for the health care sector although in case of certain selected health indicators, India has improved substantially during 1951 to 2001.

One can find continuous improvement in various health indicators from the year 1951. To illustrate, life expectancy had reached to 64 years; the Infant Mortality Rate (IMR) has fallen to 63 per 1,000 Populations; Crude Birth Rate has declined to 25 whereas Crude Death Rate has fallen to 8.1. (J. Kishore, 2006). As per the Report "Macroeconomics and Health, 2005" of the National Commission, longevity in India had reached to 66 in the year 2004 whereas IMR has declined by over 70 per cent in the year 1990. Besides, the favourable changes were observed in case of selected diseases such as Malaria which has been contained at 20 lakh cases. Smallpox and Guinea-warm have been completely eradicated, and Leprosy as well as Polio has reached to nearly state of elimination. A significant improvement in the Quality of Health Care over the years becomes evident as shown in Table Number 01. Crude Birth Rate (Per 1000 Population) has induced from 40.8 in the year 1951 to 23.1 in the year 2007. Crude Death Rate (Per 1000 Population) has declined from 25.1 in the year 1951 to 7.4 in the year 2007. Similarly, Total Fertility Rate (Per Woman) had gone down from 6.0 in the year 1951 to 2.8 in the year 2006.

IMR (Per 1000 Live Births) had reduced from 146 of the year 1951 to 55 in the year 2007. Child (0 to 4) Mortality Rate (Per 1000 Children) was 57.3 in the year 1972 which has reduced to 17.3 in the year 2006. The Life Expectancy at Birth for Males had increased from 37.2 in year 1951 to 62.6 during years 2002 to 2006. The Life Expectancy at Birth for Females had increased from 36.2 of the year 1951 to 64.2 during years 2002 to 2006. (The Economic Survey, 2006-2007, 2007 – 2008 & 2008-2009). During years 2000 to 2005, over 1, 00,000 deaths have been averted due to the up scaling of Directly Observed Treatment Short-Course (DOTS) (Ibid).

The progress has not only been observed in case of selected health indicators and diseases but the Indian health care is considered best at the global level. Indian doctors are comparable to the best in the world as they are technically proficient, and

capable of performing sophisticated procedures and that too at a fraction of the cost available in the west (Ministry of Health and Family Welfare, 2005).

Further, one can also find significant improvement also in Health Care Infrastructure as shown in Table Number 02. One can find consistent increase in the total number of Dispensaries and Hospitals as well as Total Number of Beds in the Hospitals as well as Doctors & Nursing Staff (Ibid). The Rural Primary Public Health Infrastructure has recorded an impressive increase consisting of 1, 45,000 Sub-Centers as well as 23,109 Primary Health Centers, and 3,222 Community Health Centers, catering to a population of 5,000, 30,000 and 1,00,000 respectively as well as 3,000, 20,000 and 80,000 Populations in Tribes & Desert Areas respectively (Annual Report of Health & Family Welfare Report, 2005-2006).

**Table 1: Selected Health Indicators in India**

Sr. No.	Selected Indicators	1951	1981	1991	Current level
01	Crude Birth Rate (CBR) (Per 1,000 Population)	40.8	33.9	29.5	23.1 (2007)
02	Crude Death Rate (CDR) (Per 1,000 Population)	25.1	12.5	9.8	7.4 (2007)
03	Total Fertility Rate (TFR) (Per Woman)	6.0	4.5	3.6	2.8 (2006)
04	Maternal Mortality Ratio (MMR) (Per 1,00,000 live Births)	NA	NA	427 (1992-1993) NFHS	254 (2001-2004)
05	Infant Mortality Rate (IMR) (Per 1,000 live Births)	146 (1951-1961)	110	80	55 (2007)
06	Child (0 to 4) Mortality Rate (Per 1,000 Children)	57.3 (1972)	41.2	26.5	17.3 (2006)
07	Couple Protection Rate (In Percentages)	10.4 (1971)	22.8	44.1	48.2 (1998-1999) NFHS
08	Life Expectancy At Birth [8.1] Males	37.2	55.4 (1981-1985)	59.0 (1991-1995)	<b>62.6</b> <b>(2002 – 2006)</b>
	[8.2] Females	36.2	54.7	59.7 (1991-95)	<b>64.2</b>

Source: The Economic Survey 2006 – 2007, 2007-2008 & 2008 – 2009. NFHS: National Family Health Survey; NA: Not Available.

**Table 2: Trends in the Health Care Infrastructure in India (1951 – 2004)**

Sr. No.	Particulars	1951	1981	2005	(Period/Source)
01	SC/PHC/CHC	725	57,353	1,71,608	*
02	Dispensaries and Hospitals (All)	9,209	23,555	27,770	**
03	Beds (Private & Public)	1,17,198	5,69,495	9,14,543	(All types)**
04	Nursing Personnel	18,054	1,43,687	8,65,135	***
05	<b>Doctors (Modern System)</b>	61,800	2,68,700	6,56,111	***

Source: Ibid.

\*RHS: Rural Health Statistics, 2006. \*\* Health information of India, 2004. \*\*\* National Health profile, 2005.

Public health is of crucial importance to any community and it needs to be given priority. If one considers, the Health Expenditure of India in view of prevalent trends on basis of the various Five Year Plans of India as shown in the Table number 03, it becomes evident that the priority to Health Sector of India showed declining trend in terms of Expenditure incurred on Health as a

per cent of Total Development Plans of India. The amount spent on Health Sector of India in the First Year Plan (1951-1956) was 3.33 per cent that has been reduced to 2.09 per cent in the Tenth Five Year Plan in India (2002-2007). Therefore, there exist a need to enhance and broaden the Public Health Knowledge with new research activities and community based experiences.

**Table 3: Trends in Health Expenditure of India (1951 – 2002) :( Rupees in Millions)**

Five Year Plans	Period	Amount	Total Plan Investment (All Development Heads)	Health (Central & States)	
				Outlay/ Expenditure	Per cent of Total Plan
<b>First</b>	<b>1951-1956</b>	<b>Actual</b>	<b>1,960</b>	<b>652</b>	<b>3.33</b>
Second	1956-1961	Actual	4,672	1,408	3.01
Third	1961-1966	Actual	8,576.5	2,259	2.63
Annual	1966-1969	Actual	6,625.4	1,402	2.12
Fourth	1969-1974	Actual	15,778.8	3,355	2.13
Fifth	1974-1979	Actual	39,426.2	7,608	1.93
	1979-1980	Actual	12,176.5	2,231	1.83
Sixth	1980-1985	Outlay	97,500	1,821	1.87
Sixth	1980-1985	Actual	1,09,291.7	20,252	1.85
Seventh	1985-1990	Outlay	1,80,000	33,929	1.88
Seventh	1985-1990	Actual	2,18,729	36,886	1.69
	1990-1991	Actual	61,518	9,609	1.56
	1991-1992	Actual	65,855	10,422	1.58
Eighth	1992-1997	Outlay	4,34,100	75,822	1.75
Ninth	1997-2002	Outlay	8,59,200	19,818.4	2.31
Tenth	2002-2007	Outlay	14,84,131.3	31023.3	2.09
<b>Eleventh</b>	<b>2007-2012</b>	<b>Outlay</b>	<b>36,44,718</b>	<b>NA</b>	<b>NA</b>

Source: www.cbhidghs.nic.in (1) GOI, 1997 (Adapted from Human Development in South Asia, 2004), & Central Bureau of Health Intelligence, Ministry of health & Family Welfare.

### **Health Infrastructure:**

Health Infrastructure is an important indicator to understand the healthcare delivery provisions and mechanisms in a country. It also signifies the investments and priority accorded to creating the infrastructure in public and private sectors.

### **Educational Infrastructure:**

So far as educational infrastructure is concerned Medical education infrastructures in the country have shown rapid growth during the last 18 years. The country has 289 medical colleges, 282 Colleges for BDS courses and 122 colleges conduct MDS courses with total admission of 32,815, 22,650 and 2,365 respectively during 2008-09. There are 1,620 Institution for General Nurse Midwives with admission capacity of 62647 and 523 colleges for Pharmacy (diploma) with an intake capacity of 31513 during 2007-08. There are 11,289 hospitals having 4,94,510 beds in the country 6,298 hospitals are in rural area with 1,42,396 beds and 2,774 hospital are in Urban area with 3,24,206 beds. Medical care facilities under AYUSH by management status i.e. dispensaries & hospitals are 22,566 & 3,367 respectively during 2008. There are 1,45,272 Sub Centers, 22,370 Primary Health Centers and 4,045 Community Health Centers in India as on March 2007 (Latest). India has 924 Government licensed Blood banks and 368 voluntary blood banks. Private hospitals have 718 blood banks and other private charitable centers are 520 in India during 2008. The details of services infrastructure is given in able number 04.

### **Healthcare Infrastructure Expenditure in India and Future Forecast:**

KPMG's trend monitor, 2009, of Indian Healthcare edition for Healthcare Infrastructure Forecasts suggests the Indian healthcare industry was estimated to double in value by the year 2012 and more than quadruple by the year 2017. Total healthcare infrastructure expenditure for 2013 was predicted to reach \$14.2 billion, a near 50

percent increase on the 2006 total. The main factors propelling this growth were rising income levels, changing demographics and illness profiles, with a shift from chronic to lifestyle diseases. This is likely to result in considerable infrastructure challenges and opportunities.

The State-wise expenditure on healthcare infrastructure during the year 2006, as shown in the Table 5, indicates greater inequalities between Geographical areas in India.

Of the 32 states, the six states of Maharashtra, Rajasthan, West Bengal, Uttar Pradesh, Tamil Nadu and Andra Pradesh represent just over 50 percent of the total expenditure in the year 2006. Maharashtra alone spent around 12 percent of the total expenditure at approximately US\$1.1 billion, yet the state accommodates fewer than 10 percent of the overall population. Twelve states spent less than US\$100million each in the year 2006, together representing less than 4.5 percent of total national expenditure and 3.6 percent of the population.

Among these the smallest expenditure states were Goa, Andaman and Nicobar Islands, Mizoram, Sikkim, and Pondicherry. The state of Uttar Pradesh was only the third largest in terms of absolute expenditure in 2006 but hosts over 16 percent of the population. The states of Himachal Pradesh, Manipur and Andaman and Nicobar Islands were the only states to spend over US\$30 per capita on healthcare infrastructure in 2006, with about two thirds of the remaining states spending less than US\$15, including the 6 largest absolute expenditure states. The state with the highest per capita healthcare expenditure for 2006 was the Andaman and Nicobar Islands at \$36, while the state with lowest was Bihar at just \$1.9, revealing uneven distribution of infrastructure expenditure. The states of Manipur and Nagaland were expected to grow the fastest through the medium term, each projected to have average annual growth rates over 8 percent against an overall national rate of 5.8 percent. Of the larger states, expenditure on healthcare infrastructure is

Table 4: Medical Care Facilities under AYUSH by Management Status as on 1.4.2008(Provisional)

Sr. No.	Management	Ayurveda		Unani		Siddha		Yoga		Naturopathy		Homoeopathy		Amchi		Total	
		H	D	H	D	H	D	H	D	H	D	H	D	H	D		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<b>A. Under jurisdiction of States/Union Territories</b>																	
1	State/Govt./UT Administration	2195	12863		965	270	478	4	27	12	15	90	4943	0	5	2801	19296
2	Local Bodies	14	880	0	43	0	0	0	1	0	8	0	758	0	0	14	1690
3	Others	168	606	24	0	4	0	8	40	158	209	140	118	2	125	504	1098
<b>Total (A)</b>		<b>2377</b>	<b>14349</b>	<b>254</b>	<b>1008</b>	<b>274</b>	<b>478</b>	<b>12</b>	<b>68</b>	<b>170</b>	<b>232</b>	<b>230</b>	<b>5819</b>	<b>2</b>	<b>130</b>	<b>3319</b>	<b>22084</b>
<b>B. CGHS &amp; Central Government organizations</b>																	
4	C.G.H.S.	1	35	11	3	2	37	1	88								
5	Railway ministry	39	129	0	168												
6	Labour Ministry :	130	5	32	0	167											
7	Ministry of col	16	0	16													
8	Research Councils	23	2	12	6	2	2	5	4	23	1	41	39				
9	National Institutes	3	1	1	1	1	1	2	6	4							
<b>TOTAL</b>		<b>27</b>	<b>223</b>	<b>13</b>	<b>17</b>	<b>3</b>	<b>10</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>6</b>	<b>5</b>	<b>223</b>	<b>0</b>	<b>1</b>	<b>48</b>	<b>482</b>
<b>All India (A+B)</b>		<b>2404</b>	<b>14572</b>	<b>267</b>	<b>1025</b>	<b>277</b>	<b>488</b>	<b>12</b>	<b>70</b>	<b>170</b>	<b>238</b>	<b>235</b>	<b>6042</b>	<b>2</b>	<b>131</b>	<b>3367</b>	<b>22566</b>

Note :- Provisional

Source: D/o. AYUSH, Ministry of Health &amp; Family Welfare.

Source: National Health Profile, 2008. (H- Hospitals, &amp; D- Dispensaries)

**Table 5: India: Expenditure on Healthcare Infrastructure during the Year 2006 by State Governments**

Sr. No.	Name of the States	Percentage of Expenditure on Healthcare Infrastructure as a Part of Total Expenditure	Sr. No.	Name of the States	Percentage of Expenditure on Healthcare Infrastructure as a Part of Total Expenditure
01	Maharashtra	12.0	17	Assam	01.6
02	Rajasthan	08.2	18	Jharkhand	01.6
03	Uttar Pradesh	08.1	19	Jammu and Kashmir	01.6
04	West Bengal	07.9	20	Uttranchal	01.2
05	Tamil Nadu	07.5	21	Chattisgarh	00.9
06	Andhra Pradesh	07.0	22	Manipur	00.8
07	Kerala	06.7	23	Tripura	00.5
08	Gujarat	06.2	24	Nagaland	00.4
09	Karnataka	05.2	25	Chandigarh	00.3
10	Haryana	04.8	26	Arunachal Pradesh	00.3
11	Delhi	04.3	27	Meghalaya	00.3
12	Madhya Pradesh	03.5	28	Goa	00.2
13	Punjab	02.7	29	Andaman and Nicobar Islands	00.2
14	Himachal Pradesh	02.2	30	Mizoram	00.2
15	Bihar	01.8	31	Sikkim	00.1
16	Orissa	01.6	32	Pondicherry	00.1

Source: Pradip Kanakia & Kai Rintala (2009); KPMG International, 2009.

expected to grow the fastest in Rajasthan and West Bengal. Maharashtra maintains its dominance as the state with the highest cumulative healthcare infrastructure expenditure over the forecast period, with a projected spend at over US\$7.3 billion. Only the 2 other states of Rajasthan and West Bengal were projected to witness cumulative healthcare expenditures of over US\$5 billion from 2009 to 2013.

The KPMG analysis suggests that there is uneven focus on healthcare infrastructure in India, the variety of organizational structures and processes in

healthcare delivery may result in greater inequalities between geographical areas. The historical and forecast future of healthcare infrastructure expenditure in India is given in table 6 which clearly shows the uneven focus among the states. Though the forecast shows continuous growth in healthcare infrastructure expenditure but it can be noticed that there is significant uneven increase in expenditure which poses a challenge for the stated Government to handle the growing requirement for healthcare infrastructure requirement.



Table 6: Historical and Forecast Future Healthcare Infrastructure Expenditure in India (in US \$ at 2006 prices)

Sr. No	Name of the State	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	%-↑fm 2000 to 2013
01	Andaman and Nicobar	7	7	9	10	13	13	15	17	18	20	21	23	24	26	371
02	Andhra Pradesh	402	408	447	493	547	603	672	759	774	825	877	928	980	1031	256
03	Arunachal Pradesh	17	19	25	22	24	29	30	33	35	37	39	41	44	46	271
04	Assam	109	114	132	119	146	148	154	160	169	176	183	191	198	206	189
05	Bihar	143	144	140	160	145	173	171	217	201	210	218	227	236	245	171
06	Chandigarh	11	12	23	18	22	31	33	40	42	46	50	54	58	62	564
07	Chattisgarh	37	32	43	46	54	76	90	108	109	120	130	141	152	162	438
08	Delhi	248	287	280	314	334	365	408	443	455	482	509	535	562	589	238
09	Goa	10	10	11	12	15	16	19	21	22	23	25	27	28	30	300
10	Gujarat	386	380	383	432	474	532	582	633	651	689	728	767	806	844	219
11	Haryana	222	273	279	320	342	392	455	505	523	562	600	639	678	716	323
12	Himachal Pradesh	130	131	142	161	161	184	210	278	258	277	295	314	332	351	270
13	Jammu and Kashmir	69	76	90	102	105	131	150	169	176	190	204	218	233	247	358
14	Jammu and Kashmir	105	100	114	112	127	141	152	161	167	176	185	194	203	212	202
15	Karnataka	297	307	350	380	405	443	499	550	567	603	640	676	712	748	252
16	Kerala	370	339	324	397	483	558	637	696	720	774	828	882	936	991	268
17	Madhya Pradesh	207	230	239	248	268	307	336	365	375	397	419	441	464	486	235
18	Maharashtra	771	631	678	748	815	1018	1149	1195	1232	1311	1390	1469	1548	1627	211
19	Manipur	24	32	39	44	56	71	79	100	103	113	123	134	144	155	646
20	Meghalaya	20	21	22	22	24	25	26	27	28	29	30	31	32	33	165
21	Mizoram	7	7	9	11	12	13	14	16	17	19	20	21	23	24	343
22	Nagaland	10	13	17	19	24	30	36	42	44	48	53	57	62	66	660
23	Orissa	113	125	125	133	139	156	154	165	171	178	185	192	199	207	183
24	Pondicherry	11	11	11	12	12	12	12	12	13	13	13	13	13	14	127
25	Punjab	164	175	188	196	205	230	260	288	289	306	323	340	357	374	228
26	Rajasthan	416	386	434	470	590	596	781	866	867	934	1001	1068	1135	1203	289
27	Sikkim	5	6	8	9	11	12	14	16	17	19	20	22	23	25	500
28	Tamil Nadu	481	506	529	572	611	666	714	783	801	844	887	929	972	1015	211
29	Tripura	20	27	33	37	43	45	51	62	64	70	75	80	86	91	455
30	Uttar Pradesh	503	530	554	558	613	672	771	805	825	869	914	958	1002	1047	208
31	Uttanchal	58	61	82	88	93	99	114	131	136	146	156	166	176	186	321
32	West Bengal	370	389	424	456	554	608	760	819	850	917	985	1052	1119	1187	321

Source: Pradip Kanakia &amp; Kai Rintala (2009); KPGM International, 2009.

### **Need for Adopting Advanced Information Technologies and Related Developments in the Healthcare Domain:**

The Hospital Management Information System includes latest infrastructure related with information technology, also called as e-health, will provide benefits to citizens, doctors, healthcare staff administrators and medical superintendents. Benefits to citizens includes efficient health services due to digitized health records, electronic patient data, organized record keeping and referral services, hospital related and health promotion, reduced per visit time, standardized charges. Benefits for doctors and healthcare staff includes increased efficiency due to easy access to electronic EMR, pattern treatment, SMS alerts for patients, recording observations, reduced time to-serve patients, building knowledge-base for research & development support and keeping track of and manage biomedical waste as per FDA guidelines. Benefits to state administrators and medical superintendents includes getting real time data, getting state-wide holistic view of hospitals, monitoring pre-defined health indicators, decision support, management information system comprising of status update reporting, monitoring effectiveness of national programs and identifying areas of improvements and comparing data using state wide reports (<http://www.ehealthonline.org>, 2009).

E-Health offers a good option wherein a significant proportion of patients in remote locations can be successfully managed locally with advice/ guidance from specialists in cities, without having to travel far. This allows linking patients in remote areas to urban standard services without de-linking urban service providers from their environment. The arrangement offers easier, cost effective consultation, prescription mechanism and allows a referral chain. It also improves depth, range and refresh rate for disease surveillance and response. However, this change over to digital way of thinking in the health sector has rather high initial costs. The licensing terms and conditions, bilateral and interconnection agreements, nonexistence of regulations, security and trade issues

are serious bottlenecks which need to be addressed. India is the ideal setting for telemedicine assisted health care as it already has a strong fiber backbone and indigenous satellite communication technology with large trained manpower in this sector. Various state governments, departments of the Government of India, private institutions and NGOs have been running a number of e-Health projects over recent past with successful outcome. Such adoption of advanced information technologies and related developments, known as e-health, in the healthcare domain presents though exciting new challenges pertaining to affordability of technology, availability of IT skilled medical workforce (Prof. Indrajit Bhattacharya, 2009).

### **Insights in to Major Challenges of the Insufficiency of Healthcare Infrastructure in India:**

India faces a dual challenge. Even as it needs to contain and reduce prevalence levels of pre-transitional diseases, it is burdened with a growing increase of HIV/AIDS infections alongside the emergence of non-communicable diseases which are very expensive to treat, such as diabetes, vascular diseases, hypertension, mental health, cancers, injuries, respiratory infections, etc. Worse, there is increasing evidence that these 'lifestyle' diseases affect the poor due to low resilience to infections, poverty induced malnutrition and stress. Coping with these set of new diseases along with the pre-transition diseases calls for reforms in India's health system. We need to address the demand for infrastructure, latest technology, new skills such as counseling, psychiatry, trauma care, etc. We also need to reorganize the financial systems that provide incentives to providers and patients for adopting rational and cost effective health practices based on core values of patient safety and adherence to ethical norms of conduct. Convincing scientific evidence at the global level demonstrates that appropriate interventions in the organizational and financial structures, holding income and growth constant, can improve health indices. Given the fact that India has limited resources, we need to achieve higher returns on investments already made in health infrastructure (<http://mohfw.nic.in>).

### **Healthcare Infrastructure Not in Pace with Growth in Population:**

Indian healthcare infrastructure over the last decade has not kept pace with growth in population. The available capacity has increased but not in line with rising demand. This is likely to be in part due to lack of capacity building in semi urban and rural areas. Ratio of Hospital Beds/Population is very low. To illustrate, against a world average of around four hospital beds per 1000 population, India lags behind at just over 0.72. This is a clear indication of the insufficiency of healthcare infrastructure in India.

### **Changes in Demographic and Illness Profile:**

The Indian healthcare industry is estimated to double in value by 2012 and more than quadruple by 2017. The main factors propelling this growth are rising income levels, changing demographics and illness profiles with a shift from chronic to lifestyle diseases. This is likely to result in considerable infrastructure challenges and opportunities.

### **Greater Inequalities between Geographical Areas:**

The Indian healthcare system is controlled by respective state authorities, presenting an opportunity to improve responsiveness to healthcare needs at a more local level. According to the analysis of KPMG report on "Global Infrastructure: Trend Monitor-Indian Healthcare Edition - Outlook 2009-2013", suggests that there is uneven focus on healthcare infrastructure in India. The variety of organizational structures and processes in healthcare delivery may result in greater inequalities between geographical areas.

### **Migration of Rural Population to Urban Areas Increased Demand for Urban Healthcare Services:**

There is a growing agenda to deal with the issues of urban healthcare infrastructure as rural to urban migration has significantly increased demand for these services. The healthcare sector in India is undergoing considerable reform prompted by the continuing phase of rapid economic growth. Emerging markets, such as diagnostic chains and medical device manufacturers, are attracting increasing amounts of investment. Thus, there is a growing need to deal with the issues of urban healthcare infrastructure as rural to urban migration has significantly increased the demand for these services.

### **Navigation of the PPP Model for improving Healthcare Infrastructure:**

There is growing appreciation for the role private involvement may have in meeting public demand and government is piloting the use of PPP models to help improve infrastructure and healthcare provision. Successful implementation of Public Private Partnership in Healthcare infrastructure and services poses many challenges and raises issues of sharing of gains between partners, ownership and many other issues (Pradip Kanakia & Kai Rintala, 2009).

### **Conversations. Connections. Collaborations in Healthcare System Through Information Technology (IT):**

In India, the healthcare sector has been a late adopter of IT. Most hospitals and healthcare organizations started their automation by installing disparate, in-house developed, small solutions and systems. Of late, the rising popularity of more sophisticated health IT solutions, however, has enabled the infusion of advanced information technologies and related developments in the healthcare domain. The change, though exciting, presents new challenges pertaining to affordability of technology, availability of IT skilled medical workforce, use of data standards and interoperability, and best regulatory framework (or the lack of it), among others. Overcoming these challenges and barriers will provide the necessary impetus for the advancement of e-health in India. With several IT vendors indulging in development of e-health solutions, and initiation of a number of government projects in this domain, the sector is poised for a consistent growth in future (Dr. Ravi Gupta, 2009).

### **Need for Public Private Partnership to Improve Infrastructure and healthcare Provision:**

There are good reasons why the people in India have moved away from public sector healthcare centers to those run by the private sector. Quite apart from the problems of access and availability of efficient and helpful medical personnel at the public sector healthcare centers, there is a gradual change in the mindset of people who are now increasingly seeking better medical care even though it might come at a price. The Public private Partnership will help in

overcoming such situation.

There is growing appreciation for the role private involvement may have in meeting public demand, and Government have started looking into the use of PPP models to help improve infrastructure and healthcare provision. The government is also exploring setting up state funded healthcare insurance schemes to support healthcare delivery for the poorer sections of the population. For investment to be effective, the provision of healthcare infrastructure and insurance should be strategically coordinated. Unlike in developed markets, where there focus on generating specialized healthcare facilities and innovations to drive improvements in health services, the Indian healthcare delivery model (including use of PPP) has to date only had success in the provision of more healthcare services in relatively small segments. The challenge remains to develop scalable and sustainable healthcare delivery models to deal with India's diversity and changing socio-economic population profiles. The major innovation in Indian healthcare delivery models needs to be focused on developing and delivering low cost, affordable, basic healthcare services.

It is widely accepted that the deficiencies in public sector health system can only be overcome by significant reforms. The need for reforms in India's health sector has been emphasized by successive plan documents since the Eighth Five-Year Plan in 1992, by the 2002 national health policy and by international donor agencies. Partnership with the private sector has emerged as a new avenue of reforms, in part due to resource constraints in the public sector of governments across the world.

There is growing realization that, given their respective strengths and weaknesses, neither the public sector nor the private sector alone can operate in the best interest of the health system. Over the years the private health sector in India has grown remarkably. The private sector is not only India's most unregulated sector but also its most potent untapped sector. Although inequitable, expensive, over-indulgent in clinical procedures and without quality standards or public disclosure of practices, the private sector is perceived to be easily accessible, better managed and more efficient than its public counterpart. It is assumed that collaboration with the private sector in the form of Public/Private Partnership would improve equity, efficiency,

accountability, quality and accessibility of the entire health system.

Advocates argue that the public and private sectors can potentially gain from one another in the form of resources, technology, knowledge and skills, management practices, cost efficiency and even a make-over of their respective images (<http://medind.nic.in>).

#### **Challenges in Public Private Partnership:**

In India, contracting out of primary health care services has been successfully tried in Tamil Nadu, Gujarat and Andhra Pradesh, Rajasthan, but still its large scale application is a challenge.

Broadly the private sector includes all non-state actors, some explicitly seeking profits (for-profit) and others operating on a not-for-profit (NFP) basis. The former are conventionally called private enterprise, the latter non-governmental organizations (NGOs). While the health system as a whole has common objectives of equity, efficiency, quality and accessibility, public and private providers interpret the contents of these objectives differently. Generally, the motive of the government is to provide health services to all at minimum cost or free; it develops policies and programmes to provide equity of access to such services. Not-for-profit organizations have special concern for reaching the poor and the disadvantaged but, their sustenance depends on philanthropic donations or external funding. As a result their interventions remain ad hoc, and their up-scalability remains doubtful. But they provide good quality care, need little regulation or oversight from government, are able to attract dedicated staff, and cater to the needs of those otherwise excluded from mainstream health care. Moreover, they are also willing to undertake health care challenges that the for-profit sector is unwilling or unable to take on. Given their non-profit motives and grass-root level presence, NGOs can play useful oversight roles in the system. Their size and flexibility allows them to achieve notable successes where governments have failed.

Opinion is divided on the motives of the (for-profit) private sector, ranging from outright distrust to strong support for close co-operation with it. One view is that the private sector is primarily motivated by money and has no concern for equity or access. They are related to the use of illegitimate or unethical

means to maximize profit, less concern towards public health goals, lack of interest in sharing clinical information, creating brain drain among public sector health staff, and lack of regulatory control over their practices. Another view is that private sector strength is its innovativeness, efficiency and learning from competition. Management standards are generally higher in the private (for-profit) sector. The private sector can play an important role in transferring management skills and best practices to the public sector. In India, the formal for-profit sector has the most diverse group of facilities and practitioners. Since it accounts for the largest proportion of services and resources in the health sector, it is argued that future strategies to improve public health should take into account of the strengths of the private sector.

There is no pattern to indicate whether the public/private partnership as a policy option was guided by donor agencies or due to compulsions of resource constraints or due to competitive bureaucracy.

However, public/private partnership seems to have been prompted by visionary personalities from the bureaucracy and from civil society. Policy pronouncements by government alone are not sufficient for public/private partnerships to succeed. Visionary leadership, social entrepreneurship and relationships based on trust between the stakeholders are equally important for successful partnerships. There is no uniform pattern to suggest which types of services are to be provided through partnership and what type of services should be off-limits to the private sector.

Contracting is the predominant form of partnership, although other forms of partnerships are beginning to attract greater attention. Pre-negotiated partnerships seem to be more effective than competitive bidding. Apparently wherever the partnerships initiatives have been made by the bureaucracy, the success seem to be limited compared to partnerships initiated by the private sector.

Capacity of private partners and public sector officials towards managing the partnerships is yet to be fully developed. Public sector managers may perceive the new initiative as a burdensome task, requiring them not only to placate their subordinates but also to seek better performance from their private partners. This is a daunting task. Private partners, who are known for their informal and flexible systems and

organizational processes, are uncomfortable with the rigid organizational and managerial processes and procedures of the public sector. Designing partnership (contract) agreements requires sufficient capacity-building measures but central government leadership may not be ideal for achieving this aim.

Policy innovations such as public/private partnerships are, of course, highly contextual. Partnership with the private sector is not a substitute for the provision of health services by the public sector. Also, public-private partnership initiatives cannot be uniform across all the regions or suitable under all kinds of political and administrative dispensations. While private partnership is an administrative decision, an obvious but important point is that it must enjoy political and community support. In states where the private sector is prevalent, partnership initiatives could be an alternative, not necessarily because of competitive efficiency.

Any policy initiatives to strengthen the flagging public sector health services in India would be welcome. But a government that fails to deliver quality social services due to lack of basic administrative capacity would not be able to contract either clinical or non-clinical services. The first step must be to improve basic administrative systems (<http://medind.nic.in>).

#### **Public Private Partnership to Meet the Future Challenges:**

Uneven health and development progress in various parts of the country and often this difference is so dramatic that one can hardly believe that they are part of the same nation and have followed the same development path for the last five decades. Even within the states that are doing reasonably well, there remain regions of darkness where little has changed since Independence. Obviously, these parts of the country should be of major concern in the coming decades.

We are also living under two shadows in India: the familiar one of infectious diseases like malaria, tuberculosis, etc., and the new and growing cases of non-infectious chronic diseases like cancer and coronary diseases. The large widespread health infrastructure that has been set up throughout the country seems to be non-functional and unresponsive in many parts. Over-centralized and lopsided planning, inadequate and unbalanced financial

outlays, lack of accountability to communities, low moral values and, very often, dereliction of duty by medical and nursing professionals plague the system. A thorough review of the National Health Policy and a total revamping and restructuring of the health infrastructure are immediately called for. Due to the prevailing situation in the government sector, there has been an unprecedented growth of the private sector, in both primary and secondary health care all over the country. Given the current ethical standards of the medical profession and free market technology-driven operational principles, the private sector generally does not provide quality health care at a reasonable cost. Before this sector becomes a public menace, it is necessary to introduce participatory regulatory norms (<http://www.uhrc.in>).

## Conclusion

India showed rapid economic growth from 2003 to the start of the global economic slowdown in 2008. India's growth rate was second only to that of China amongst the largest economies in the world. It has been observed that India's past expenditure on infrastructure has fallen short of demand and as a result it may be constraining current and future economic growth of India. With a population over a billion, the coordination and strategic choices concerning expenditure on healthcare infrastructure are of vital importance. It remains to be seen that how Government policies currently in place will shape the Indian healthcare infrastructure market in the future. Private healthcare capacity in India can be considered as significant. Given the anticipated incentives to be offered by the Government, including the use of user fee financed provisions and the opportunities for Public private partnership (PPP), it is believed that the private sector market will attract future foreign investment.

In conclusion, it is clear that the need of the hour is for reorganizing and increasing investment in health and related sectors. Current government expenditures could be made more efficient by restructuring the financing and organizational systems to get over the pre-transition diseases and also to develop the capacity to cope with the huge epidemic of non-communicable diseases which are more expensive to treat; and address the key barriers — human resources and institutional capacity to achieve higher levels of access, efficiency and quality.

Given the large scale of healthcare resources in the country, a reorganized system of Universal access, ensuring good quality, appropriate healthcare for all could be a concrete possibility in the near future. However, this would require large scale changes in the way that healthcare in the country is organized. Keeping the interests of the general public paramount, powerful vested interests would have to be curbed, regulated and made accountable. Along with raising public finances for health, significant redistribution of healthcare resources based on equity considerations by focusing on Public private partnership would be necessary. A paradigm shift would be required, with emphasis on rational, appropriate care for all based on integration of systems instead of expensive, often irrational care based on high-tech 'medical consumerism' for the few.

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