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University and college teachers and students of Economics, Political Science and Sociology/Social Anthropology are invited to send to us questions of wider interest on the subjects of their study. We shall endeavour to publish in subsequent issues of the journal answers to selected questions received by us. This will form a separate section of the journal. The authors of the selected questions shall receive complimentary copies of one year's issues of the journal, as a token of our appreciation.

SPECIALIST SERVICES IN THE INDIAN RURAL PUBLIC HEALTH SYSTEM FOR MATERNAL AND CHILD HEALTHCARE - A STUDY OF FOUR STATES

Shreekant Iyengar and Ravindra H. Dholakia

The present study attempts to examine the role of specialist services in the rural public health system of India in the areas of maternal and child healthcare. The study uses primary data collected through a survey of doctors and paramedical staff working at public health facilities regarding availability and quality of the specialist services in gynaecology, paediatrics and anaesthesia. The study discusses in detail aspects of infrastructure, manpower and operational challenges faced in effective provisioning of specialist services through the rural health facilities of four largest states - Bihar, Madhya Pradesh (MP), Rajasthan and Uttar Pradesh (UP). The findings of the survey reveal a significant dearth of specialist doctors with their concentration at the district level. Moreover, there are severe misallocations of the specialist doctors and, lack of manpower support, equipment and basic infrastructure within the public health system causing serious challenges in effective provisioning of specialist services for maternal and child healthcare. Lastly, the efforts made by the government for providing additional manpower support for these services are also not giving the desired results.

Keywords: Maternal health, child health, specialist doctors, emergency obstetric care (EmOC), rural healthcare.

JEL Classification: I18 and I11

I. INTRODUCTION

A specialist service can be defined as a service provided by a doctor holding a post-graduate degree with specialisation such as gynaecology, paediatrics, surgery or anaesthesia. Such doctors generally are not the primary contact point for patients but are referred to by general practitioners (doctors) attending to primary ailments [NHP, 2015]. The specialist medical service in the Indian public health system finds its place at the levels of the CHC (community health centre) and above. The levels below only have general medical practitioners at the PHC (primary health centre) and auxiliary nurse and midwife (ANM) at sub-centres (SC). In the primary health system of rural India, the CHCs and district hospitals act

as a primary referral for the facilities located at the village and cluster levels. Specialist services, therefore, become relevant for providing secondary healthcare services specifically in these areas.

One crucial aspect of healthcare systems and specialist services is provisioning of services related to maternal and child care. These include ante-natal (ANC) and post-natal care (PNC), institutional deliveries and new-born and child care. While lower level facilities of SCs and PHCs are expected to provide a majority of these services, higher level facilities become crucial in case of emergency obstetric care and intensive infant and child care [IPHS - MoHFW, 2012]. The effective access and delivery of these services to all including the vulnerable sections of the

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population would be crucial for improving health outcomes such as maternal mortality (MMR) and also neonatal mortality (NNMR) to a considerable extent. While the maternal deaths among the vulnerable sections could be related to the poorer access to specialist delivery service among poor [Pitchfort, et al., 2006], the occurrence of neonatal deaths among the poor could be reduced by faster access to paediatric care [Rammohan, et al., 2013]. The millennium development goals (MDGs) for MMR and under five mortality rate (U5MR) to be achieved by 2015 are 109 and 42, respectively [MoSPI, 2006]. However, the recent national average for MMR was 178 during 2010-12 [Census of India, 2013]. Achieving these MDGs through reduced maternal and child deaths would not only require effective attention at the SC and PHC levels but also a strong and effective specialist services such as emergency obstetric care (EMoC) at higher level facilities once identified and referred from the lower level facilities [Fortney, 2001; and Rammohan, et al., 2013]. The access to such services in rural areas can only be ensured through public health systems as private facilities are largely available only at urban locations¹ [Rao, 2012].

Providing quality healthcare through a public health system would essentially require a strong and effective manpower in place. This has implication on the availability of medical and paramedical staff at various levels of public health facilities. The Indian public health system (IPHS) norms clearly define the types and number of these staff required at different kind of health facilities indicating the perceived need if not the demand of the population covered. The IPHS norms clearly define the required number and type of health facilities (namely sub-centres, PHC and CHC) on the basis of the rural population covered under each of these facilities. Moreover, the norms for hilly and tribal areas are different considering the geographical condition and distribution of population. These norms also indicate the required medical and paramedical manpower on the basis of the size and type of health facility

and the services offered by them. The placement of these facilities and their locations under the public health system are, therefore, based on these pre-defined norms.²

Specialist services under the public health system face major challenges. Three significant ones are - (i) availability and diversity of specialist doctors at public healthcare facilities; (ii) availability of paramedical staff; and, (iii) availability of required supporting infrastructure at each such facility. In the context of maternal and child care services, the most crucially required specialists would be obstetricians/gynaecologist and paediatricians. Moreover, anaesthetists, surgeons and physicians would also be relevant in providing other related specialist care at the CHC level. Considering the availability of specialists, it is observed that, as of March 2014, there were 5363 CHCs in the country that had a total number of 4091 specialist doctors [RHS-MoHFW, 2014b]. These included surgeons, gynaecologists, physicians and paediatricians. Of these, the number of gynaecologists and paediatricians working at CHCs were only 1263 and 961 respectively [RHS-MoHFW, 2014b]. The number of doctors available were much less than the required numbers considering one specialist of each type to be available at every functioning CHC in the country as per the IPHS norms for CHCs [IPHS - MoHFW, 2012].

Data of specialist doctors available at CHCs in India show a substantial shortfall in each specialisation with clearly increasing trend in the shortfall over time (Table 1). The number of existing CHCs reported in Table 1 also indicates the required number of each specialist because, as per IPHS, every CHC should ideally have one specialist in each of the specialisations. Given the actual number of specialists in position, the shortfall is calculated. The National Rural Health Mission (NRHM) was implemented from the year 2005 to the year 2012. Therefore, we consider the situation in 2006, 2013 and 2014.

Table 1. Number of Specialists at CHC In-position and Shortfall from 2006 to 2014

Sr.No.	Number of	2006		2013		2014	
		In-Position	Shortfall	In-Position	Shortfall	In-Position	Shortfall
1.	CHCs	3346		5187		5363	
2.	Specialists	In-Position	Shortfall	In-Position	Shortfall	In-Position	Shortfall
3.	Ob-Gyns	1215	2131 (64%)	1959	3228 (62%)	1263	4100 (76%)
4.	Paediatricians	678	2668 (80%)	1403	3784 (73%)	961	4402 (82%)
5.	Surgeons	1201	2145 (64%)	1510	3677 (71%)	936	4427 (83%)
6.	Physicians	884	2462 (74%)	933	4254 (82%)	931	4432 (83%)

Source: (RHS-MoHFW, 2006; RHS-MoHFW, 2014a; RHS-MoHFW, 2014b)

It is observed that the number of specialists in each discipline increased during 2006 to 2013 due to NRHM, but during 2013-14 there has been a sharp fall in the numbers of specialists, implying a steep increase in the shortfall from their required number to ensure satisfactory coverage. The shortfall as a percentage of the required specialist in the country during 2006-13 is simply mind-boggling and the problem became more acute post NRHM in 2014. This could be possibly due to poorer availability of facilities and support to these doctors leading them to discontinue their services in public sector and/or due to fall in recruitment of new doctors in the system after NRHM. Hence, it reflects the extent of the dissatisfactory state and inadequacy of public healthcare coverage for mothers and children.

Apart from the given types of specialists as listed in Table 1, IPHS norms also require an anaesthetist at the CHC level (IPHS - MoHFW, 2012). The presence of anaesthetists would be relevant for various surgical procedures including caesarean section (C-section) deliveries. However, as per the district level household and facility survey 2007-08, only about 17% (710 of 4162) of CHCs were found to have an anaesthetist [IIPS, 2010].³

Specialist services also face the problem of inadequate infrastructural facilities and para-medical staff in the public health systems in the country. For maternal and child care, the availability of operation theatres (OT), labour rooms and new born stabilisation units or new born care corners become quite crucial especially at the CHCs. It is very often observed that many of these facilities tend to be inadequate at public health facilities especially in remote rural areas [Sodani & Sharma, 2011]. Out of a total 5363 CHCs functioning in the country as of March 2014, nearly 18% did not have a functional operation theatre, about 21% did not have a new born corner and 66% did not have a new born stabilisation unit [RHS-MoHFW, 2014b]. As for other support facilities, while about 93% of the CHCs had functional laboratories, only 50% had functional X-Ray machines. Moreover, it was also found that only 54% of CHCs had residential quarters available for specialist doctors and only 32% facilities with doctors staying in the quarters [RHS-MoHFW, 2014b]. This is an area of definite concern as it could be argued that unavailability of adequate residence facility for doctors within the health facility premise could lead to their absenteeism which could be a factor resulting in underutilisation of public healthcare services [Goel & Khera, 2015].

Among the paramedical staff at CHCs it was found that there is a 20% shortfall in the nursing staff. A significantly large shortfall of 64% was found in case of radiographers, 52% in pharmacists and about 75% in laboratory technicians at the CHCs [RHS-MoHFW, 2014b]. A relatively larger shortfall in the availability of technicians as compared to the infrastructure, i.e., X-ray machines and laboratories, would leave the infrastructure underutilised and ineffective. Moreover, the unavailability of medical and paramedical staff at the health facilities and inadequate infrastructural facilities act as one of major reasons for a delay in providing services such as EmOC thereby increasing risk of maternal deaths. These factors are definitely avoidable in order to bring down the risk of maternal mortality [Ghebrehwet & Morrow, 2007].

This state of affairs, revealed by the available data, leads to three questions: Firstly, how do the Centres function in the context of (i) allocation of doctors, (ii) their salaries and incentives and (ii) their working environment and culture. Secondly, what efforts are undertaken by the government to improve specialist services through training of doctors? Lastly, how do these services or the absence of them affect the institutional deliveries and OPD (outdoor patients)?

With the above objectives in mind, the study begins by examining the data available through secondary sources regarding provisioning of

specialist services under the public health system. This is done considering four major states of the nation, namely, UP, MP, Bihar and Rajasthan [sometimes called the BIMARU states] and comparing their performance with the national average. The motivation to select these states was made on the basis of a previous study regarding specialist services focusing on these four states [Bajpai, et al., 2013]. That study attempted to examine the status of specialist services in the rural public health system using primary data of health facilities from selected states. The study highlighted a few selected variables regarding manpower and infrastructure of the specialist services under public health system. Moreover, on the basis of practices regarding specialist services in some Indian states and in selected countries of the world, it focused on various strategies and interventions that could be made for improving specialist services. However, it did not look into the details of specialist services in the rural public health sector on the basis of various factors that are likely to impact these services. This is attempted in the present study.

II. HEALTH STATUS AND SPECIALIST SERVICES IN THE SELECTED STATES

The four selected states have a higher proportion of rural population and are growing faster than the national average (Table 2). These states, therefore, have a lower degree of urbanisation and require relatively greater amount of resources and efforts to provide healthcare services in rural areas.

Table 2. Rural and Total Population in Selected States in India (in Crores)

States	2001			2011			Average Annual Growth of Rural Population (2001-11)
	Total	Rural	%Rural Population	Total	Rural	%Rural Population	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Bihar	8.29	7.43	89.5%	10.38	9.21	88.7%	2.17%
MP	6.04	4.44	73.5%	7.26	5.25	72.4%	1.70%
Rajasthan	5.65	4.33	76.6%	6.86	5.15	75.1%	1.76%
UP	16.62	13.17	79.2%	19.96	15.51	77.7%	1.65%
India	102.86	74.25	72.2%	121.02	83.31	68.8%	1.16%

Source: Census of India 2001 and 2011.

Considering the health outcomes in terms of the vital statistics of these states, it is observed that these states perform poorly on the whole compared to the national average. Table 3 shows that while in terms of IMR, MMR and crude birth

rate (CBR) all these states have poorer performance, Bihar and Rajasthan do better than the national average in crude death rate (CDR) and only Bihar does better in case of neonatal mortality (NN).

Table 3. Vital Statistics in Selected States in India

States	CBR	CDR 2013	IMR	MMR 2010-12	NN 2012
(1)	(2)	(3)	(4)	(5)	(6)
Bihar	27.6	6.6	42	328	28
MP	26.3	8.0	54	230	39
Raj	25.6	6.5	47	255	35
UP	27.2	7.7	50	292	37
India	21.4	7.0	40	178	29

Source: [SRS Bulletin, 2014], [Census of India, 2013] and [PHFI, 2014]

Table 4 shows the number of available health facilities per million people. It is found that the number of CHCs per million persons is relatively low in UP and significantly low in Bihar but is higher in MP and almost double in Rajasthan, compared to the national average. This could be due to the fact that both these states have special features of higher proportion of tribal population and/or desert areas, which require more health-care facilities per million population as per Indian Public Health Standards (IPHS). In terms of the sub-district hospitals (SDH), only MP is at par with the national average and in case of district

hospitals both MP and UP are relatively better off than the national average. It may be noted that UP does not have any sub-divisional hospitals in their health system [UP - Dept. of Health, 2015]. Instead, the state has two types of hospitals at the district level with one general and one female hospital [UP - Dept. of Health, 2015]. Therefore, the number of district hospitals tends to be significantly larger than the number of districts in the state. Lastly, it is also observed that in these states, except Rajasthan, the figures are below national average in terms of the total and rural government hospitals per million persons.

Table 4. Infrastructure Availability in Public Health System of Selected States, 2014

(Figures per Million of Population)

States	CHC	Sub-Divisional Hos- pitals	District Hospitals	Total Govt. Hos- pitals	Rural Govt. Hospitals
(1)	(2)	(3)	(4)	(5)	(6)
Bihar	0.67	0.43	0.35	17.30	17.83
MP	4.60	0.87	0.70	7.09	7.53
Raj	8.26	0.28	0.50	55.53	61.19
UP	3.87	0	0.80	5.18	3.91
India	4.43	0.85	0.62	19.27	20.74

Source: RHS Bulletin, March 2014 and MoHFW, Govt. of India.

Given the infrastructure, it would also be relevant to take a look at the additional facilities at the DHs and CHCs in these states. The data are given in Tables 5a and 5b. It may be observed that in all the selected states the proportion of DHs having 24-hour water facility, three phase electricity connection (except Bihar), generator/in-

verter and ambulance are greater than or at par with the national average. However, the percentage of DH having HIV test in MP and with ultra-sound facility in Bihar and MP are relatively lower. Moreover, except Rajasthan, all the three states have relatively lesser DHs with operational blood banks.

Table 5a. Percentage of District Hospitals in Selected States with Facilities, 2007-08(in %)

States	24 hr. water facility	Three phase electricity connection	Standby inverter/generator in working condition	NIC Terminal Available	Ambulance	ELISA for HIV Test	Ultrasound Facility	Fully Operational Blood Bank
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Bihar	91.2	85.3	100	8.8	91.2	73.5	17.6	52.9
MP	93.5	93.5	95.7	54.3	95.7	60.9	56.5	39.1
Raj	100	100	90.6	15.6	90.6	78.1	87.5	84.4
UP	95.2	95.2	96.4	26.2	90.5	69.0	88.1	58.3
India	91.9	92.1	61.6	27.2	91.6	70.0	74.7	68.8

Source: [IIPS, 2010]

It is observed that in terms of facilities like quarters for specialists at CHCs, all states except Bihar do better than the national average. However, compared to this, the percentage of specialists staying at the quarters in CHCs was found to be relatively lower for all states. In terms of the referral transport facility, Bihar and MP do better, while Rajasthan and UP perform poorly compared to the nation as a whole. Comparing the states with the national status on the availability of other services, it is observed that there are relatively lesser CHCs in Bihar and UP with functional laboratories, in Rajasthan and UP with functional O.T. and in UP with labour rooms. The percentage of CHCs with new born stabilisation units are found to be significantly lower in Bihar and MP and the number of CHCs with new born corners were found to be significantly lower in Bihar and relatively lower in Rajasthan and UP again compared to the national average.

One area where all the selected states lag significantly is availability of all four specialists at one place (CHC or DH). While it is observed that Bihar has a relatively greater proportion of such CHCs, all other states perform quite poorly,

with MP having only 1% of CHCs having all four specialists present. It may be noted here that this proportion at the national level is also quite low at only 15% indicating a significant shortfall of specialist doctors available at CHCs and DHs.

It may also be relevant to take a look at the manpower availability at these facilities. Table 6 shows the number of available doctors (both general and specialists) and paramedical staff per million population at PHCs, CHCs, SDHs and DHs of the selected states. It is found that MP and Rajasthan do relatively better than or are at par with the national average in terms of the general and specialist doctors at DH, SDH and the CHCs. In Bihar and UP, however, the figures are way below this level. In terms of the paramedical staff at DH and SDH, both MP and Rajasthan are above the national average, while in terms of laboratory technicians and nurses (combined at PHCs and CHCs), it is only Rajasthan that is above this level. Bihar and UP, in terms of paramedical staff at all levels, and MP in laboratory technicians and nurses are provided poorly compared to the average for the nation.

Table 5b. Percentage of Community Health Centres in Selected States with Facilities, 2014 (in %)

States	With specialist doctors	With specialist doctors living in quarters	With referral transport available	Functioning as per IPHS norms	With all four specialists	With computer/ statistical asst. For MIS/ accountant	With functional laboratory	With functional O.T.	With functional labour room	With functioning stabilization Units for new born	With new born care corner	With at least 30 beds	Designated as FRU*	Blood storage facility*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Bihar	40	34.3	100	100	34.3	100	74.3	90	100	1.43	31.4	100	88	0
MP	65.6	32.3	100	100	1.2	74.25	96.7	91.3	100	17.4	96.7	100	61	6
Raj	61.9	46.2	86.6	100	8.3	78.7	93.8	72.5	93.5	42.5	66.1	70.2	53	15
UP	76.8	43.0	77.2	100	1	100	80.6	80.6	81.2	46.3	74.3	72.1	56	1
India	53.8	32.3	92.45	100	15.4	91.24	93.4	82.2	92.2	33.53	78.5	72.6	56	1

Note: *:* - Data for 2007-08 as per DLHS 3.

Source: Columns 2 to 13 [RHS-MoHFW, 2014a] and Columns 14 and 15 [IIPS, 2010]

The status of macro level indicators regarding infrastructure and manpower at various levels of public health facilities providing specialist services reflect relatively poor performance of the selected states. Moreover, in case of many of the indicators, these states perform poorly, not only compared to the national average but also at an absolute level. Thus, it becomes relevant to examine the factors and causes related to the status of specialist services in the public health system in these four states. However, looking at

the secondary data only may not be adequate for the purpose. Therefore, data collect through a primary survey was required to study the efforts made by governments at various levels for providing specialist services and to obtain data on health outputs to assess the impact of the health inputs provided by the specialist services. With this perspective a direct verification of the status of specialist services was done using primary data collected though a survey of public health facilities in rural areas of the selected states.

Table 6. Manpower Availability at different Health Facilities per Million Population in Selected States, 2014

States	Doctors <i>DH and SDH</i>	GDMO**	Gyneac. <i>CHC</i>	Pedia.	Tot. Spec.*
Bihar	12.37	3.43	0.22	0.17	0.83
MP	31.75	14.32	0.91	1.41	4.36
Raj	23.91	17.89	1.86	1.81	11.52
UP	12.68	0.00	0.69	0.93	2.91
India	25.64	11.08	0.91	0.93	3.98
States	Para medics <i>DH and SDH</i>	Radiographers <i>CHC</i>	Lab Tech.	Pharmacist <i>PHC and CHC</i>	Nurses
Bihar	9.46	0.16	7.55	2.60	20.92
MP	99.29	2.80	14.78	16.95	60.13
Raj	94.91	2.41	32.39	9.03	153.71
UP	34.27	0.49	5.79	17.35	26.55
India	78.11	2.13	16.22	22.06	62.16

Note: *** - Includes Surgeons and Physicians; ** - General Duties Medical Officer
Source: [RHS-MoHFW, 2014b]

The data was collected through structured interviews of medical and paramedical staff at various public health facilities in rural areas of selected districts of four states in the country. The next section provides the details of the methodology used for data collection through a sample survey of health facility staff at various levels. The fourth section summarises the findings of the survey thereby reporting the status of the existing services. The fifth section attempts to assess the impact of health inputs on outputs of health facilities on the basis of collected data using regression analysis. The final section provides the conclusions of the study.

III. METHODOLOGY

Primary surveys in the four selected states-Bihar, Madhya Pradesh (MP), Rajasthan and Uttar Pradesh (UP) were conducted during March to May 2012 as a part of a larger project.⁴ The states selected were such that they were a part of the 18 high focus states selected by the Government of India under the NRHM implementation. Moreover, these states also cover a significant proportion of the population and the geographical area of the nation. UP is the most populous state in the country with 16.5% population of India and, Rajasthan and MP are first and second largest states in terms of geographical area with 10.9%

and 9.7% of the total area of the nation respectively. Bihar also has a significant proportion (8.6%) of India's population and covers about 2.8% of the geographical region. Finally, Bihar, MP, Rajasthan and UP were also the so-called BIMARU states indicating poor economic and policy environment.⁵

It would be relevant to mention here that, while the selection of the states was done considering high focus states of NRHM, the other (non-high focus) states that are considered relatively better off also tend to have low levels of public healthcare services in them. Some of the previous studies regarding access of poor to healthcare services in rural areas and the availability of these services in six different states of the country suggest the same [Bajpai, et al., 2005; 2006; 2008; 2008a]. These studies have reported that public healthcare services in rural areas are poor in terms of the availability and quality of infrastructure and they lack manpower at all levels of health facilities. Moreover, while the situation is worse in the northern states of UP, MP and Rajasthan, the economically better-off southern states such as Karnataka and Andhra Pradesh also reflected poor quality health services. It was only Tamil Nadu that was relatively better off and hence also had greater proportion of the poor using the public healthcare system [Iyengar & Dholakia, 2012].

For the purpose of the primary surveys, two districts from each state were selected. Considering the fact that there was a major concentration of specialist doctors at the district hospitals followed by some availability at the community health centres, the districts were selected keeping in mind a minimum sample size of 15 specialist doctors from each state. All these specialist doctors were surveyed through a structured

interview method using a specially designed questionnaire. Moreover, surveys of nurses, i.e., auxiliary nurse and midwife (ANM) and general nurse and midwife (GNM), and medical officers (MO) were also conducted regarding availability and status of specialist services in their district. While the interviews of specialist doctors were conducted at the CHCs, sub-district/sub-divisional hospitals and district hospitals, those of the nurses and medical officers were conducted at PHCs and CHCs.

The survey also included interviews of trained medical officers (TMOs) who had received supplementary training in the areas of paediatrics, obstetrics or anaesthesia in the context of their role in providing specialist services under the primary healthcare system. Lastly, a set of information was also collected from the office of district health administration through interviews with the district medical and health officer (DMHO)/chief medical health officer (CMHO) and his team including the district program manager (DPM) of NRHM. In all, 60 specialists, 48 medical officers, 14 TMOs and 160 nurses (ANMs and GNMs) were interviewed. The details of the sample selected from the two districts of each state are given in Table 7. It may be noted here that the number of specialist doctors and TMO's surveyed constitute most or all the available specialists in the respective districts of the selected states thereby covering a major proportion of the specialist medical service providers of the three mentioned disciplines in the public health system of these districts. Moreover, the selection of PHC and CHC for the surveys was done taking into account a fair representation of all the blocks in the entire geographical spread of the concerned district.

Table 7. Sample Size of Specialists, Medical Officers, TMOs and Nurses Surveyed across Four States and Eight Districts

Details		Bihar		MP		Rajasthan		UP		Total
		Jehanabad ⁶	Samastipur	Dhar	Khandwa	Dausa	Dungarpur	Lalitpur	Unnao	
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
District Administration:		1	1	1	1	1	1	1	1	8
Specialist	Gynaecologist	1	4	3	4	3	3	4	1	23
Doctors	Paediatricians	3	4	2	3	3	3	3	4	25
	Anaesthetists	1	2	2	1	1	2	1	2	12
Medical Officers		5	7	7	5	6	6	5	7	48
Trained	Gynaecology	0	1	3	0	1	1	1	1	8
Medical	Paediatrics	0	0	0	1	0	0	1	0	2
Officers	Anaesthesia	1	0	0	0	1	2	0	0	4
GNNs	PHC/CHC	7	7	6	4	8	11	1	2	46
ANNs		2	4	4	6	1	0	7	10	34
Sub-centre		10	10	9	11	10	10	10	10	80
Total		31	40	37	36	35	39	34	38	290

IV. FINDINGS OF HEALTH FACILITY SURVEYS

As mentioned earlier, primary surveys were conducted among health facility staff including medical officers (MO), general nurses (GNM) and auxiliary nurses (ANM) working at PHCs and CHCs. Moreover, a set of specialist doctors and trained medical officers (TMOs) in specialist services were also surveyed. We begin our discussion regarding the status of availability of specialist services at DHs, PHCs and CHCs as reported by GNNs, ANNs, MOs and specialists at these facilities. Tables 8a and 8b show the same. It was observed that, on an average, only 20% GNNs had any specialist working full time in their HFs. MP had only 10% GNNs reporting full time availability of any specialist. GNNs in MP (25%) and in Rajasthan (55%) had specialists visiting their HF on rotation duty from other HFs, during health camps or made consultation visits on request. Specialists doctors at some of the rural

facilities at CHC/PHC level were reported to be visiting on a rotation duty with their duties allotted at multiple facilities within the district. Moreover, at some of the facilities were also found to be visiting only during health camps conducted for maternal and child health or on a special request made for consultation of patients in the area. Almost 2/3rds of the HFs where GNNs were working did not have any specialist visiting even once with proportion being very high in MP (75%). Thus availability of specialist services at lower level of HFs was abysmally poor in general in all HFs except Rajasthan. GNNs reporting availability of specialists in their HFs had more than one specialist visiting in UP, MP and Rajasthan. In Bihar, only one type of specialist was available and that too for only 40% GNNs. For the ANNs, the nearest HF was PHC (53%) followed by CHC (25%) on an average.

Table 8a. Availability of Specialist Doctors at HFs (in %)

Sr.No.	Details	UP	MP	Bihar	Raj	Aggregate
(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>As reported by GNMs</i>						
1	% of GNMS that reported a specialist working at their facility as:					
	Placed full time	30	10	25	15	20
2.	Regular rotation for consultation	0	5	0	0	1.25
3.	Regular rotation for camps	5	20	2	50	23.8
4.	Visit on request	0	0	0	5	1.25
5	No Specialists visiting	65	75	60	30	57.5
6	% GNM having type of specialists at their facility:					
	Gynaecologist	25	25	15	55	30
7	Anaesthetist	5	10	0	30	11.3
8	Paediatrician	30	15	0	40	21.3
9	Others (General Surgeon, Medicine, etc.)	0	0	25	5	7.5
10	No Specialist	65	75	60	30	57.5
<i>As reported by ANMs</i>						
11	% ANMs who states the type of nearest facility to be a:					
	Sub Centre	5	15	5	10	8.75
12	PHC	50	45	50	50	48.8
13	CHC	35	30	15	35	28.8
14	Referral hospital	0	0	5	0	1.25
15	District hospital	10	10	25	5	12.5
16	Private hospital	0	0	0	0	0
17	% of ANMs who reported types of staff are available at nearest facility:					
	MPW	5	15	0	25	11.3
18	ANM	95	90	80	100	91.3
19	GNM	50	45	90	85	67.5
20	General doctor	95	85	100	80	90
21	Specialists	30	15	40	30	28.8
22	% ANMs who reported availability of specialist at nearest facility:					
	PHC	0	0	0	0	0
23	CHC	20	5	10	25	15
24	Referral hospital	0	0	5	0	1.25
25	District hospital	10	10	25	5	12.5
26	Private hospital	0	0	0	0	0
27	No Specialist in the nearest facility	70	85	60	70	71.3

None of the ANMs reported any private hospital as the nearest HF, and only 5% ANMs in Bihar reported a referral hospital as the nearest HF. According to a large proportion of the ANMs, the nearest HF had other ANMs, GNMs and general doctors, but no specialists. Thus, specialist services did not exist in nearby HFs according to 70% ANMs on an average, and more

than 80% ANMs in MP. Many of these ANMs were found to be conducting deliveries at the sub-centres that were allotted to them along with their duties at the PHC/CHC where they were posted. This implies that the unavailability of a relevant specialist at a nearby facility could significantly increase the risk of maternal or infant deaths in case of a complication.

Table 8b. Availability of Specialist Doctors at HFs (in %)

S. No.	Details	UP	MP	Bihar	Raj	Aggregate
(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>As reported by GNMs</i>						
1	% MO who reported facility with specialists working in it:					
	Placed full-time	33.3	16.7	25	8.3	20.8
2	On regular rotation for consultations	0	0	0	0	0
3	On regular rotation for health camps	0	16.7	0	41.7	14.6
4	Visit on request	0	0	0	8.3	2.1
5	No Specialist	66.7	66.7	75	58	66.6
6	% MO who reported type of available specialist at their facility:					
	Gynaecologist	8.3	16.7	0	41.7	16.7
7	Anaesthetist	8.3	16.7	0	25	12.5
8	Paediatrician	16.7	25	0	25	16.7
9	Other (General Surgeon, Medicine, Orthopaedics, etc.)	16.7	8.3	25	0	12.5
10	No Specialist	66.7	66.7	75	58	66.6
<i>As reported by Specialists</i>						
11	Avg. no. of other specialists in HF as per the SP:					
	Paediatricians	2	2	2	2	2
12	Obstetricians	3	3	3	2	3
13	Anaesthetists	1	1	1	1	1
14	% SPs who said that these numbers are sufficient for patient load at HF	13.3	33.3	6.7	6.7	15
15	Avg. no. of additional specialists needed in HF to handle patient load as per the SP:					
	Paediatricians	2	1	3	2	2
16	Gynaecologists	2	1	5	3	3
17	Anaesthetists	1	1	3	2	2
18	Other	0	0	0	1	0.3
19	% SPs who reported that the no. of SPs available in entire district is sufficient	0	13.3	13.3	6.7	8.3

Considering the responses of MOs, it was observed that, on an average, 67% reported no specialists available in their HF. Only in Rajasthan and MP, specialist services were available to MOs on health camps or special request. UP, MP and Rajasthan had multiple specialists in HFs where specialist service was available; otherwise

these services were largely not available at all. The specialist doctors reported that for the average number of specialists in a HF of the selected states was about 6 and hardly 15% of them felt that this number is adequate. They also reported that, on an average, about 7 more specialists per HF were additionally required to satisfactorily

handle the patient load. It was also found that only about 8% of specialist opined that the total number of specialists working in the public health facilities were enough for the entire district.

One of the serious issues related to the availability of specialists was of allocation and placement of these doctors at various health facilities since they represent a very scarce resource. The surveys of specialist doctors basically revealed that the anaesthetists were in lower proportion than gynaecologists and paediatricians (see Table 9). These proportions closely represent the actual distribution of specialists as almost all the available specialist doctors were surveyed in each district. Moreover,

the district hospitals had a larger number of specialists than at the CHCs in all states except MP. It was further observed that some of the specialist doctors were currently posted as medical officers that usually require only graduate level qualification. This proportion was the highest in Bihar followed by MP, Rajasthan and a small proportion in UP. Moreover, it was also found that except in Rajasthan, where almost 13% of the specialists are at PHCs as MOs, none of the states had specialists posted at this level. The specialists working as MOs were responsible for attending the general OPD instead of the cases of their specialty only. Hence, they ended up being overburdened as they had to attend to the cases related to their specialty as well.

Table 9. Placement of Specialist Doctors (SP) Surveyed in Selected States

S. No.	Details	UP	MP	Bihar	Raj	Aggregate
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	% of SP. Surveyed with Specialisation in:					
	Gynaecology	33.3	46.7	33.3	40	38.3
2	Paediatrics	46.7	33.3	46.7	40	41.7
3	Anaesthesia	20	20	20	20	20
4	% of doctors having title position of:					
	A specialist	93.3	66.7	40	80	70
5	MO	6.7	33.3	60	20	30
6	% of SP. working at facility level: PHC	0	0	0	13.3	3.33
7	CHC	40	66.7	6.7	40	38.4
8	District Hospital	60	33.3	93.3	46.7	58.3
9	% of SP. who were placed in the visited district due to:	93.3	66.7	73.3	-	77.8
	Govt. order					
10	Personal choice of the district	6.7	33.3	26.7	-	22.2
11	% of SP who chose the district through:	6.7	33.3	20	-	20
	Applied directly to state govt.					
12	Through some influence or reference.	0	0	6.7	-	2.23
13	Gained support from local health facility.	0	0	0	-	0
14	% SPs who reported that they are not stationed in the appropriate facility not allowing them to use their skills	80	66.7	73.3	-	73.3

It was also observed that specialists were placed in the district primarily by government order and not by personal choice of the specialists. Those who chose the districts did so by directly applying to the state government. It was also observed during the surveys that facilities did not have the correct combination of specialist so as to provide emergency obstetric care or conduct surgical interventions such C-section. While some facilities in remote rural regions having gynaecologists did not have anaesthetists, there were other facilities where the latter were posted without any type of surgeries conducted. The placement of doctors created gross underutilisation of the skills of the specialists available within the system. Misallocation of the scarcest resource indicates the negligent and casual attitude of the managers of the public health system.

Support Infrastructure and Manpower

The provisioning of specialist services in the rural areas could also be further related to the availability of the infrastructure facilities and paramedical support staff. It was observed that

nearly half of the doctors in UP and Rajasthan, more than half in MP and about three fourth in Bihar said that the HFs they worked with did not have enough equipment required for providing effective services (Table 10). Many of the specialists in UP, MP and Bihar reported unavailability of neonatal resuscitation equipment and non-functioning of new-born units and equipment to manage neonatal jaundice and hypothermia. Moreover, a significant proportion of specialists in MP and Bihar and all of them in UP indicated lack of qualified support staff for a new-born care unit in their HFs and a shortfall in the availability of such staff for functioning of such a unit round the clock. Lastly, most of the specialists in these states also reported a lack of adequate number of beds for the new born care units in their HFs. The candid opinions of specialists in all the HFs regarding the inadequacy of the infrastructure, equipment, trained staff, and insufficient number of beds for providing effective services for the new born and neo-natal care indicate serious lacuna and raise concerns about the quality of the healthcare services.

Table 10. Availability of Specialist Doctors and Required Infrastructure at Health Facilities

S. No.	Details	UP	MP	Bihar	Raj	Aggregate
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	% SPs who reported missing equipment or infrastructure for providing effective services.	46.7	60	73.3	46.7	56.7
2	% SPs who reported HF with equipment for neonatal resuscitation	26.7	33.3	33.3	-	31.1
3	% SPs who reported HF with a new-born unit functioning with equipment	20	40	53.3	-	37.8
4	% SPs who reported HF with facilities to manage neonatal Hypothermia and Jaundice	26.7	40	26.7	-	31.1
5	% SPs who reported HF with qualified support staff for new-born care unit	0	20	26.7	-	15.6
6	% SPs who reported enough staff to keep the new-born care unit functioning 24x7	0	20	26.7	-	15.6
7	% SPs who reported enough beds in new-born care unit	13.3	26.7	6.7	-	15.6

It was also further observed during the survey that many of health facilities lacked basic infrastructural facilities such as electricity even at the district hospital level. For instance, the neonatal intensive care unit in one of the districts (Vaishali) in Bihar was operating without regular electricity supply despite availability of the required manpower. Gynaecologists in UP and Bihar reported that the OT in the health centres did not have air conditioners and the round the clock laboratory facilities was unavailable making it difficult for them to conduct surgeries. The anaesthetist at many health centres reported lack of basic equipment for safer surgeries and even supply of oxygen cylinders. Moreover, absence of support from paramedical staff and their insufficient training was also reported as a factor preventing the doctors from providing effective services in the government health facilities. Thus, serious shortage in the number of specialists only reflects the tip of the iceberg that is easily visible. The real problems, not easily visible at the macro-level, are the misallocation of available manpower, lack of required infrastructure and inappropriate support staff.

Salaries, Incentives and Working Environment for Specialists

A serious shortage of specialists in the public HFs would obviously prompt one to inquire about their salaries, incentives and working conditions. It was found that in all states more than half the doctors had come to work in the district from other districts and cities (Table 11a). In terms of the facilities and incentives offered it was found that hardly 25% of the doctors received the advantage of a housing quarter. Most of the doctors did not receive any vehicle facility. None of the doctors in any of the states received a higher income or cash bonus as an incentive for working in the district.

The average salaries of these specialist doctors appeared to be quite consistent in three of the four states of MP, Bihar and Rajasthan and the difference in UP is explained by a non-practicing

allowance (NPA) that they receive as they are not officially allowed to practice at home or a clinic. However, these numbers had significant variations among the doctors and they varied from about monthly Rs. 17000 to Rs. 100000. These variations were due to the nature of appointment, i.e., full time and contractual, and type of posts held such as MO and specialist. It may be noted that in most states the appointment of doctors only happens as a medical officer (MO) and they receive the same salary irrespective of the qualification or specialisation. It was also further found that about 70% to 80% of them were unsatisfied with their salaries, but this proportion was the least in UP at only about 67%. The low satisfaction in regards to salaries among specialists could be related to the amount of earnings that doctors outside the public health system are able to make. As per the specialists surveyed, their counterparts in the private practice earned nearly 2 to 3 times more than them. This was despite the fact that in MP and Bihar the doctors did have an opportunity to earn over and above their salaries. While in MP the specialists in public health facilities only practiced from home, in Bihar most of the specialist, mainly gynaecologists and paediatricians had their private clinics and nursing homes.

Considering the status of promotions, it was found that more than half of the specialists in UP and a little less than half in MP had reached higher level positions since the beginning of their career. However, this proportion in Bihar was quite low. All those who had been promoted said that it was on the basis of their experience. Moreover, it could be noted that majority of the specialists believed that they are not likely to get any promotions in future. The relatively poor salary, incentives and the system of promotion of doctors could probably be related to their low satisfaction and hence the non-willingness to work in the public health system. The amount of salaries received by the doctors, the inconsistent nature of their appointments, i.e., specialist working as general practitioner (MBBS) and not being given appropriate positions and salaries, and the unclear

systems of promotion of doctors led to a dissatisfaction among them. Moreover, the possibility of earning greater remunerations by working

outside the public health system through private practice created an unwillingness among these doctors to continue in the system.

Table 11a. Details of Working, Salaries and Incentives of Specialist Doctors (SP) Surveyed

S. No.	Details	UP	MP	Bihar	Raj	Aggregate
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	% SP. Who worked elsewhere before	73.3	46.7	60	66.7	61.7
2	% SP. Working earlier: In a city	20	6.7	6.7	26.7	15
3	In an urban area of a district	6.7	6.7	33.3	6.7	13.3
4	In a rural area of a district	46.7	33.3	20	33.3	33.3
5	% SP who received incentives after being deployed to this district:	46.7	40	0	13.3	25
	Housing quarters for you					
6	Vehicle	6.7	6.7	0	0	3.3
7	Higher monthly salary	0	0	0	0	0
8	One-time cash bonus	0	0	0	0	0
9	Other	13.3	6.7	0	6.7	6.7
10	Avg. monthly income of SP: (in Rs.)	65769	52538	51333	54138	55945
11	% SP who reported that they were satisfied with monthly income	33.3	26.7	20	20	25
12	Avg. income of specialists in private practice or jobs as per SPs (In Rs.)	116667	132857	118571	200000	142024
13	% SP who have any other sources of income, i.e., private practice	0	26.7	53.3	-	26.7
14	Avg. additional earnings per month as reported by SP (Aprox. in Rs.)	-	21250	117143	-	69196
15	SP who see patients at home	0	26.7	13.3	-	13.3
16	Avg. consultation fees charged by SP per case	-	83	150	-	116.7
17	% SP who have been promoted to a higher position since the beginning	60	46.7	20	-	42.2
18	% SP given promotion on basis:	60	46.7	20	-	42.2
	Experience					
19	Incentive for transfer	0	0	0	-	0
20	Incentive for retention	0	0	0	-	0
21	No Idea	0	0	0	-	0
22	Other	0	0	0	-	0
23	% SP who think they will be promoted in the future	6.7	13.3	6.7	-	8.9
24	% SP who have received rewards as recognition of good work:	26.7	20	20	26.7	23.3
	Monetary					
25	Non-monetary	0	0	0	13.3	3.3
26	% SP reporting willingness to leave Govt. job or the district due to:	0	0	6.7	-	2.2
	Very low monetary returns from the job					
27	No proper promotions	0	6.7	26.7	-	11.1
28	Would like to move to urban area	13.3	20	13.3	-	15.6
29	Family stays elsewhere	20	13.3	13.3	-	15.6
30	Would get into private practice	0	0	20	-	6.7
31	Others (Overload of work / Not satisfied)	0	13.3	13.3	-	8.9

Note: For rows 13 to 23 and 26 to 31, data was not collected in Rajasthan.

It was found that a relatively better salary, incentive and promotion system in UP as compared to other states corroborates the relatively higher proportion of doctors satisfied with their salaries. Moreover, it was also observed that a very small proportion of the doctors in all the states received some kind of monetary or non-monetary (only in Rajasthan) rewards as recognition of good work being given to the specialists.

In the above context it was also found that a significant proportion of specialists were willing to leave their government job. This proportion

was found to be the least in UP at 33% as compared to MP at 53% and Bihar where it was as high as 87%. However, the main reasons stated by the specialist were to move out of these rural areas or district places to larger cities so that they can live with their families. Some doctors in Bihar and MP also stated low monetary returns, uncertain promotions and overload of work as other reasons for leaving. In fact, the average workload of these specialists was also found to be heavy with 9 hours per day for 6 days per week (Table 11b).

Table 11b. Details Regarding Workload of Specialists

S. No.	Details	UP	MP	Bihar	Raj	Aggregate
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Avg. no. of days the SPs work per week	6	6	6	-	6
2	Avg. working hours per day as per SP	9	10	10	6	9
3	% of SP who are able to take leave	93.3	100	86.7	86.7	91.7
4	% SPs who find it difficult to take leave	13.3	26.7	53.3	-	31.1
5	% SPs who reported that during their leave patients are seen by:	80	80	53.3	66.7	70
	Another specialist in the facility					
6	An MO in the facility	6.7	6.7	20	0	8.4
7	Patients are referred to a nearby hospital	6.7	13.3	13.3	20	13.3
18	% SPs who refer a case because they are too busy with other patients	13.3	13.3	40	26.7	23.3
19	% SP reported that patients are referred due to business of the SPs:	0	0	6.7	0	1.7
	Daily					
20	Once a week	13.3	6.7	13.3	6.7	10
21	Once a month	0	0	13.3	6.7	5
22	Less than a month	0	6.7	6.7	13.3	6.7

It was also observed that while most of the specialists were able to take leave, many of them had reported difficulties in doing so. In all the states except MP, about 8% specialists could not take leave whenever they wanted. However, in Bihar and MP also, the specialists found it difficult to take leave when required. About 70% of these specialists reported that the patients were seen by another specialist in the same HF when they went on leave. Moreover, about 8% said that the patients were seen by MOs, and 13% said that they are referred to other facilities. Out of the total

specialists, hardly 13% in UP and MP, about 26% in Rajasthan and, about 40% in Bihar opined that patients were referred due to the overload of work on the specialists.

Specialist training and efforts by the government

In order to find out the efforts made by government to provide opportunities to doctors for upgrading their knowledge, the specialists were asked about any continued medical education opportunities being offered to them. This is

because it was found that almost 80% of these specialists had been working in the visited public health facilities for more than 2 years with almost 50% working for more than 5 years preceding the survey (Table 12). There were only a few (about 20%) who had joined recently.

Table 12. Continued Medical Education Opportunities Offered to Specialist Doctors

S. No.	Details	UP	MP	Bihar	Raj	Aggregate
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	% SP. Who completed MBBS:	6.7	13.3	0	-	6.7
	During last 5 years					
2	Between last 5 to 10 years	13.3	6.7	0	-	6.7
3	Between last 10 to 20 years	13.3	26.7	33.3	-	24.4
4	Before 20 years	66.7	53.3	66.7	-	62.2
5	% SP Who completed PG:	20	20	6.7	-	15.6
	During last 5 years					
6	Between last 5 to 10 years	0	20	6.7	-	8.9
7	Between last 10 to 20 years	46.7	40	53.3	-	46.7
8	Before 20 years	33.3	20	33.3	-	28.9
9	% SP. Who began working as a specialist in the district:	6.7	13.3	6.7	20	11.7
	During last 1 year					
10	Between last 1 to 2 years	0	13.3	13.3	13.3	10
11	Between 2 to 5 years	40	26.7	53.3	0	30
12	More than 5 years back	53.3	46.7	26.7	66.7	48.3
13	% SP who have been offered continued medical education opportunities	40	40	60	40	45
14	% of SP that reported kind of continued education opportunities:	13.3	6.7	26.7	6.7	13.4
	Further specialisation opportunities					
15	Short-term training courses	26.7	33.3	33.3	33.3	31.7

Note: '-' in the Rajasthan column are for those data that were not collected.

Hence, not many specialists were recently recruited in the public health facilities of these states. This also corroborated the fact that more than 3/4th of the surveyed doctors had completed their education at least 10 years preceding the survey. Since there is no formal mechanism to ensure that they attend regular professional conferences or refresher courses, etc., they are not likely to be exposed to advances in knowledge and technology. It was found that only about half of the specialists got continued medical education opportunities and a large proportion of them got

to attend only short-term training courses. On an average, only one out of seven specialists got the opportunity for further specialisation.

Among the other efforts of the government included the short term training (16 to 18 weeks) given to MOs in emergency obstetric care (BEmOC and CEmOC) for handling delivery complications at lower level facilities, life-saving anaesthetic skills (LSAS) for providing support for obstetric care and, paediatrics. The study of

Table 13a. Details Regarding Trained Medical Officers (TMO)

S. No.	Details	UP	MP	Bihar	Raj	Aggregate
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	% TMO having specialisation in:	66.7	75	50	40	57.9
	Gynaec. (Emergency Obstetric Care)					
2	Paediatrics	0	25	0	0	6.3
3	Anaesthesia (LSAS)	33.3	0	50	60	35.8
4	% TMO working at facility:	33.3	0	0	0	8.3
5	PHC	66.7	25	0	80	42.9
6	District Hospital	0	75	100	20	48.8
7	% TMO who took the training:	0	25	50	20	23.8
	During the last 1 year					
8	Between 1 to 2 years ago	66.7	50	50	20	46.7
9	More than 2 years ago	33.3	25	0	60	29.6
10	Avg. no. of days of training as per doctors	140	189	130	95	139
11	% TMO who said training was held at:	0	0	0	0	0
	CHC					
12	District level	33.3	75	0	60	42.1
13	State level	66.7	0	100	40	51.7
14	Other (Medical Colleges)	0	25	0	0	6.3
15	% TMO who said all MBBS doctors in the district allowed to apply for this training	33.3	25	0	40	24.6
16	% TMO who said the training open to: All those who applied	0	25	50	0	18.8
17	Only those who were ordered	66.7	50	0	0	29.2
18	Only new joiners	0	0	0	0	0
19	Others (those selected or recommended by seniors)	33.3	25	50	100	23.8
20	% TMO who said they were selected by: Application only	33.3	25	0	0	14.6
21	Interview	0	0	100	0	25
22	Direct selection by seniors in HF	33.3	25	0	0	14.6
23	Direct selection by district officials	33.3	25	0	100	39.6
24	Training was compulsory for all MOs	0	0	0	0	0
25	Other, please specify:	0	25	0	0	6.3
26	% TMO who were given: Choice of trainings in different subject areas	0	50	50	20	30
27	Opportunity to only be a part of a specific training	100	50	50	80	70
28	% TMO who said accommodation provided during training	100	75	50	40	66.3
29	% TMO who were paid for their time in the training course	100	100	100	40	85
30	Avg. payment to doctors (Rs.)	25333	127250	91000	21000	66146
31	% TMO who said there has been a refresher training on the material taught	0	0	0	0	0

Table 13b. Short Term Supplementary Training Taken by TMOs

S. No.	Details	UP	MP	Bihar	Raj	Aggregate
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	% TMO who said training included:	100	75	100	40	78.8
	Lecture					
2	Reading material	66.7	75	50	0	47.9
3	Visual aids (video, demonstrations)	100	75	50	20	61.3
4	Live demonstrations	100	75	100	20	73.8
5	Clinical training	100	100	100	60	90
6	Training at my home facility	0	0	0	0	0
7	% TMO who were tested on knowledge gained upon completion of the training	100	75	100	40	78.8
8	% TMO that were tested by:	100	75	100	40	78.8
	Written examination					
9	Oral examination	100	25	100	0	56.3
10	Clinical practical	100	0	50	20	42.5
11	% TMO who like best about the training program: The training methods and systems followed	100	100	50	20	67.5
12	Increase in your knowledge and capabilities	33.3	100	100	40	68.3
13	Incentives and facilities provided during training	0	0	100	0	25
14	Hands on experience of cases	33.3	100	100	0	58.3
15	% TMO who would like changes in the training program:	0	50	50	20	30
	Better training methods and paters					
16	Duration of training to be increased	66.7	25	100	0	47.9
17	Exclusive training for MOs to be held	0	0	0	0	0
18	Better access to practical cases	33.3	50	0	20	25.8
19	Others (Refresher training and regular up-gradation of knowledge)	33.3	0	0	0	8.3
20	% TMO who reported specific areas or specific services that they were not sufficiently prepared for by the supplementary training:	0	50	0	0	12.5
	Handling delivery complications					
21	OPD for children presenting with complications	0	0	0	20	5
22	Procedures	33.3	25	50	60	42.1
23	% TMO who reported areas or specific services that you would like more training on:	0	0	0	0	0
	Normal deliveries					
24	Handling delivery complications	33.3	25	0	20	19.6
25	OPD for pregnant women and children	0	0	0	0	0
26	Other (Family Planning Operations)	0	25	0	0	6.3

specialist services in the rural public health system also included a survey of these trained medical offices (TMOs). The responses of TMOs regarding the process of selection for training and the methods of the same are summarised in Tables 13a and 13b. In our sample, there were not any MOs who received training in paediatrics in UP, Bihar and Rajasthan. Similarly, our sample may not be representative of the state situation in terms of where the TMOs are working - PHC, CHC and DH. The trained medical officers (TMO) were found to be very few in numbers since only a few selected doctors were given these trainings. Moreover, they were yet to be placed systematically within the public health system in the visited districts at the time of survey. In fact, some of them were working as regular medical officers and not being placed for jobs according to their training. Hence, the sample was chosen purely on the basis of availability of such doctors if at all there were any such doctors.

The survey of TMOs primarily revealed that the average number of training days differed significantly from only 95 days in Rajasthan to 189 days in MP. These training programmes were held at the state level or at the district level. The perceptions about the eligibility and selection

procedures for such specialist training among MOs are surprisingly different in different states. These are usually very objective matters and should not vary from case to case. It implies that clarity in communication about such training opportunities to the potential beneficiaries from the state authorities is lacking thereby creating confusion and speculation leading to uncertainty among the potential trainees. In UP, no choice for training in different subject areas is given to the trainees. In other states, such a choice is available in differing proportions. In UP, accommodation is provided to the trainees, but in other states, not all trainees are provided with accommodation. In all states except Rajasthan, the TMOs are paid for their time in the training course. In none of the states, refresher training is offered to the TMOs. Thus, there is no continuity in upgradation of their skills. None of the states have TMO training at their home health facility. The training pedagogy and content differ across states. TMOs are tested after undergoing the training in UP and Bihar, but not in MP and Rajasthan. The feedback on the training received by the TMOs reflects satisfaction with the exception regarding medical procedures on which the TMOs do not feel confident and comfortable.

Table 14. Working of TMOs after Short Term Supplementary Training

S. No.	Details	UP	MP	Bihar	Raj	Aggregate
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	% Doctors who receive a higher salary now after completing the training	0	0	0	0	0
2	% Doctors who would advise your MBBS colleagues to enrol in the training program	100	100	100	80	95
3	% Doctors who reported that the additional training has changed their day-to-day job at the health facility as they are: Able to handle more cases in your specialty now.	66.7	100	100	40	76.7
4	More confident in providing emergency care than before	66.7	100	100	40	76.7
5	Able to provide greater support to other doctors	66.7	75	100	0	60.4
6	Able to reduce the load of specialists in your area in the district	33.3	100	100	0	58.3
7	% Doctors who said they are able to handle the additional case load	0	25	0	20	11.3

In terms of the working of these TMOs after training, it was observed that except in Rajasthan, the day-to-day job of most of the TMOs under-

went changes in terms of their ability to handle more cases in their specialty (Table 14). However, in Rajasthan, they did not feel more confident in

Table 15. Specialist Opinion Regarding Supplementary Training of MOs

S. No.	Details	UP	MP	Bihar	Raj	Aggregate
(1)	(2)	(3)	(4)	(5)	(6)	(7)
4	% SPs that are aware of supplementary technical (4-6 months) training courses being offered in the district to MOs in:	33.3	40	53.3	6.7	33.3
	Gynaecology					
5	Paediatrics	0	13.3	13.3	6.7	8.33
6	Anaesthesia	13.3	40	60	20	33.3
7	Not aware of any trainings being offered	53.3	33.3	33.3	73.3	48.3
8	% SPs who reported TMOs working in their facility	33.3	33.3	53.3	6.7	31.7
9	% SPs who believe that the training is sufficient for the TMOs to be competent in providing specialist services	40	40	40	20	35
10	% SPs who think trainings can be improved by changing: Training duration	26.7	26.7	20	-	24.5
11	Methods in terms of practical training	0	6.7	20	-	8.9
12	Should be exclusive and systematic	0	0	6.7	-	2.23
13	Should be regularly revised	13.3	13.3	13.3	-	13.3
14	Others (Frequency of Training and No. of doctors trained should be increased)	6.7	6.7	0	-	4.47
15	SPs who think these trainings have helped improve maternal and child health services in the district	26.7	26.7	20	13.3	21.7
16	% SPs that reported additional services that MOs are able to provide after the supplementary training:	26.7	40	20	-	28.9
	Handling complicated deliveries					
17	Handling C-section	26.7	40	20	-	28.9
18	Handling paediatric OPD	6.7	26.7	13.3	-	15.6
19	Anaesthesia support for surgeries	0	20	40	-	20
20	% SPs who think that trained MOs have lightened the patient load for specialist doctors	13.3	26.7	20	13.3	18.3
21	% SPs (unaware of trainings in their district) who think a 4-6 months training is sufficient to provide general MOs with necessary skills for specific specialist services	33.3	20	26.7	40	30
22	%SPs who reported that the training should focus on:	6.7	13.3	13.3	-	11.1
	Handling complicated deliveries					
23	Handling C-section	0	0	6.7	-	2.23
24	Handling paediatric OPD	20	13.3	26.7	-	20
25	Anaesthesia support for surgeries	13.3	13.3	13.3	-	13.3

Note: '-' in the Rajasthan column are for those data that were not collected.

handling emergency cases, providing greater support to other doctors and reducing the load of specialists in the district. A very small proportions of the TMOs were able to handle additional case load perhaps because there was no commensurate monetary incentive for them to do so. Moreover, many of the TMOs revealed during the surveys that after training they were not effectively utilised in providing specialist services. They were either given rotation duties at different health facilities, where they ended up attending OPD only or in some cases they were posted at health centres not capable of providing specialist services. For instance, at two PHCs in Dhar (MP), two MOs trained in gynaecology were posted on a rotation basis. However, both of them could not stay at these PHCs regularly for supervising or conducting deliveries that were handled by the paramedical staff. One of them had a parallel posting in the district hospital and the other commuted from another town. At both these places, the skills of these trained MOs were not utilised at all. Moreover, in Dungarpur (Rajasthan) and Lalitpur (UP), the MOs trained in anaesthesia were placed at the PHC level where their skills were totally unutilised. This was despite the fact the districts had a serious shortage of anaesthetists.

The discussions with specialists about their opinions regarding supplementary trainings to selected MOs revealed that about half of the specialists were not aware of any specialist training given in the district, with this problem being more acute in Rajasthan and UP (Table 15).

On an average, about a fourth of the specialists had a trained medical officer (TMO) working in their HF. Less than 40% of the specialists believed that the TMOs were competent in providing specialist services in the district. About 24% believed that such training can be improved by increasing the duration of the training and about 12% believed that it can be improved by more regularly revising the training material. Only 31%

specialists believed that such training has improved maternal and child care in the district. According to less than half the specialists who are aware about the specialist training, the trained MOs are able to handle complicated deliveries, C-section, paediatric OPD, and provide anaesthesia support for surgeries and reduce the patient load for the specialist doctors. Out of those specialists who are not aware about such training of MOs, only about a fourth believed that training of 4 to 6 months could be sufficient to provide the necessary skills to MOs for specific specialist services.

Discussions with the district administrations regarding the supplementary training of general MOs revealed that only one district each in Bihar and Rajasthan had conducted training in paediatrics. However, all other visited districts had organised emergency obstetric care and anaesthesia training. The average number of TMOs at the district level in all specialties was one, at the CHC level it was two, and at the PHC level it was one. On an average, once in the previous year (2011-12) such training was provided in each of the three specialties. About 40% of the districts reported improvement in the quality of health care after the supplementary training of MOs, though the tangible outcomes reflecting the quality of healthcare in the district did not show any substantial improvement. According to specialists in 40% of the districts, not enough number of MOs is provided with such a supplementary training. About 50% of them expressed interest in additional supplementary training in the areas of paediatrics and anaesthesia, and 70% in C-section training. Among the reasons for the lack of supplementary training in the districts, 30% mentioned administrative decisions at the state level and 20% referred to the funding decisions at the state level. Generally, there is apathy for even providing any plausible reasons for such a state of affairs.

Other Efforts for Improving Specialist Services

The district administration also made some other efforts in the direction of provisioning of specialist services specifically in the rural areas. It was found that while none of the districts in UP and Rajasthan hired specialists during the last one year, MP and Bihar did hire about 7 to 8 specialists in their districts. However, this information did not corroborate the findings of specialist surveys implying serious communication gaps somewhere in the system. Furthermore, among the visited states, Rajasthan had a system whereby a specialist doctor from outside the district visits on a regular rotational basis during health camps. The other states did not report any such arrangements. In MP and Rajasthan, specialists from a higher HF within the district visited the lower HFs on a rotational basis. In Rajasthan, such visits are made regularly on a weekly basis, but in MP it is based on requirements and on periodic health camps. Such visits moreover are not for OPD but for scheduled procedures or health camps. In MP, the community is informed about such visits by specialists by notices and through ASHA (accredited social health activist) or ANM, whereas in Rajasthan, it is done through notices and word of mouth. Districts in Rajasthan find this system beneficial for faster diagnosis and treatment.

It was also found that all the visited states attempted use of technology to connect rural patients with specialist doctors in urban areas. At present it is largely through telephone or mobiles. Only in Rajasthan, e-mails and video conferences are used. During the discussions with doctors and paramedical staff it was found that while the specialists used mobile phones for communicating with colleagues and other doctors in private sector for consultations, this practice was not very common among MOs or ANMs/GNMs. The district administration in all states indicated a lack of telephone and internet connectivity as a reason for poor utilisation of information technology in health care. In MP and Rajasthan, some of the officials and patients are also not interested in

using ICT in health, because patients prefer to see the doctor in person rather than through impersonal communication channels.

In terms of strategies employed by districts to attract specialist doctors, only 50% of them have made any attempts. The strategy is mostly to offer higher salary but most of the districts confirm that their efforts have not succeeded to attract specialists. Only 20% districts are planning to offer any incentives in future to attract specialists. In the past, about 40% of the districts requested for provision of specific incentives to attract specialists but in none of them were they provided. Thus, an attitude of general despair, discouragement and disbelief prevails at the district level. However, there are efforts being made by the district to deal with the problem of shortage of specialists through various methods. 30% districts mention hiring of contractual specialist doctors, 20% suggest incentivising doctors to take up specialisation, 30% argue for supplementary training to existing MBBS doctors, 20% plead for outsourcing the services to private sector, and 20% feel that proper facilities and better salaries to specialists need to be provided.

V. HEALTH INPUTS AND OUTPUTS

The findings of the surveys of doctors and paramedical staff at health facilities and also the district administrations bring out various inadequacies regarding specialist services including unavailability of doctors and lack of support infrastructure and manpower in the public health systems of the selected states. The poor state of specialist services in the rural areas are likely to impact negatively the health output indicators such as institutional deliveries, neo-natal care and care of paediatric patients. It would, therefore, be relevant to examine the impact of the identified factors on these outputs of the public health system. In order to do this, we first consider the status of health outputs of institutional delivery, and paediatric patient care services as reported by the GNMs and MOs during the surveys. Tables 16a, 16b and 17 summarise their responses regarding the same.

Table 16a. Details Regarding Institutional Deliveries as Given by GNM

S. No.	Details	UP	MP	Bihar	Raj	Aggregate
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Average No. of delivery cases per month in facility as reported by GNMs	99	75	247	49	118
2	Avg. Deliveries handled by GNMs personally (per month)	22	23	35	15	24
3	Avg. no. of complicated deliveries referred each month	5	7	4	4	5
4	% deliveries attended by GNMs out of total at facility	22.2	30	14.3	31.2	24.4
5	% deliveries referred due to complication from the HF as per GNM	4.9	8.8	1.7	9.2	6.2
6	% GNM who refer cases of women experiencing complications during delivery: Refer to	5	0	0	0	1.3
	PHC					
7	Refer to CHC	5	20	20	25	17.5
8	Refer to district hospital	90	80	80	75	81.3
9	Refer to private hospital	0	0	0	0	0
10	% GNMs who stated primary reasons to refer a delivery case*:					
	Insufficient infrastructure	95	65	70	60	73
11	Insufficient staff numbers	5	0	0	20	6.3
12	Staff not trained	0	0	0	15	3.8
13	Overload of patients	0	0	0	0	0
14	Specialists not available	85	90	75	80	83
15	Avg. dist. to nearest govt. facility with safe delivery facility (Kms.)	14	16	9	17	14.1
16	Avg. dist. to nearest private facility with safe delivery facility (Kms.)	18	24	8	18	16.8

Note: * Percentages may not add to 100 because of multiple options exercised by GNMs.

It is observed that Bihar had significantly higher number of delivery cases in the HF per month and also handled personally as reported by the GNMs than in other states. Percentage of total deliveries attended by GNMs varied from state to state, but was not even 33% in any of the HFs. Percentage of deliveries referred due to complications was only about 6% on an average as reported by GNMs. These complicated cases were largely referred to the district hospitals (82%), CHCs (17%) and hardly to PHCs (1%) and never to the private hospitals as reported by

GNMs. The MOs have reported that on an average there were about 3 deliveries taking place per day in their HFs, and only about one complicated case is referred every five days out of the HF.

The main reasons for referring the cases outside that were reported by MOs as complications in the deliveries that cannot be handled without a specialist and, the other as insufficient infrastructure availability in the HFs (Table 16a). The overriding reason for referring complicated delivery cases to higher HFs given by the GNMs

are also the same (Table 16b). It was also further observed that the average distances to the nearest government and private safe delivery facilities as reported by GNMs were 14.1 Kms. and 16.8 Kms., respectively.

The same distances as reported by MOs were 18.8 Kms. for government and 21 Kms. for

private safe delivery facilities. This could be probably due to the fact that the MOs surveyed were at the PHCs that were located at a relatively greater distance from other government and private health facilities in urban or semi urban centres as compared to the GNMs who were surveyed at both CHCs and PHCs.

Table 16b. Details Regarding Institutional Deliveries as Given by MO

S. No.	Details	UP	MP	Bihar	Raj	Aggregate
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Avg. deliveries each month at the facility	138	45	189	43	89
2	Avg. no. of complicated deliveries referred each month	14	6	4	4	7
3	% Deliveries referred out of the facility as per MO	10	13.8	2	8.7	7.9
4	% MO who reported the primary reasons to refer a woman for delivery: Insufficient infra-structure	16.7	8.3	41.7	33.3	40.6
5	Insufficient staff numbers	8.3	0	8.3	0	9.4
6	Staff not trained in required skills	8.3	8.3	8.3	16.7	21.9
7	Overload of patients	0	0	8.3	0	1.6
8	Complication in delivery	91.7	91.7	83.3	75	68.8
9	% MO that reported type of complications during pregnancy for most frequently referrals:	66.7	41.7	41.7	66.7	45.3
	Severe anaemia					
10	Foetal distress	16.7	16.7	33.3	41.7	29.7
11	Hypertension	25	41.7	25	33.3	29.7
12	Past complications/C-section	25	16.7	33.3	25	20.3
13	Post-Partum Haemorrhage	16.7	41.7	33.3	41.7	25
14	Other (Obstructed Labour, Antepartum haemorrhage (APH))	33.3	33.3	16.7	0	17.2
15	Avg. dist. to nearest govt. facility with safe delivery facility (Kms.)	17.8	28.3	13.4	13.6	18.8
16	Avg. dist. to nearest private facility with safe delivery facility (Kms.)	22	26.2	14	23.7	21

Considering the fact that the deliveries were referred in case of complications requiring specialist attentions, these distances are significant in making the access to safe delivery facility being not satisfactory on an average for a large rural population. Moreover, as given above, a majority of these referred deliveries were sent to the district hospitals indicating that reliable specialist care is largely available only at the district level thereby creating a pressure on the district level hospitals. It is interesting to note that none of the GNMs and MOs (except a small percentage in Bihar) have

reported overload of patients as a reason for referring patients to higher facilities. Therefore, if these facilities are equipped with the required infrastructure and skilled manpower, they would be in a position to provide effective specialist services at their level.

The specialist services required at the PHC/CHC level also included child care. In fact, MOs at these facilities played a significant role in providing these services due to the absence of relevant specialists.

Table 17. Paediatric OPD Handled by MO (in %)

S. No.	Details	UP	MP	Bihar	Raj	Aggregate
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	% MO who see paediatric OPD cases regularly	100	100	100	91.7	97.9
2	Avg. no. of paediatric cases in a day	27.7	10.6	41.7	10.8	22.7
3	% MO who feel comfortable and confident in treating paediatric patients	75	100	100	91.7	91.7
4	% MO who refer paediatric patients	100	91.7	100	100	97.9
5	% MO who states reasons for referring paediatric patients as:	83.3	58.3	58.3	58.3	64.6
	Do not have necessary skills					
6	Other facilities have equipment & infrastructure	58.3	75	75	75	70.8

Almost all MOs saw paediatric OPD cases regularly at an average rate of about 23 per day (Table 17). While most of them felt quite comfortable about it, almost 98% of the MOs have reported that they have to refer certain paediatric cases to higher HFs. This was either because they did not have necessary skills to treat the case or because other facilities had necessary equipment and infrastructure.

Given the status of the health outputs in the selected districts, we may now assess the impact of selected health inputs such as manpower and infrastructure on these outputs. With this objective an attempt is made to analyse the data using regression analysis. Using the data collected from primary surveys across the four states, **hypotheses** were tested regarding impact of available

type of specialists, type of equipment, facilities and infrastructure, and distances to other health facilities on deliveries conducted at HFs with GNM or MO. Moreover, the impact of these variables was also tested on deliveries being referred from lower to higher level HFs. Lastly, the impact of availability of specialist on the paediatric OPD were tested in the context of child care services at the MO HFs.

The regression analysis was done using the ordinary least squares method. Stepwise regression analysis was also undertaken in order to improve goodness of fit and explanatory power of the regression model by eliminating insignificant variables.⁷ The details of the models tested and the respective results are given below.

i. GNM Regression I

$$y_1 = b_0 + b_1d_1 + b_2d_2 + b_3d_3 + b_4d_4 + b_5d_5 + b_6d_6 + b_7d_7 + b_8d_8 + b_9d_9 + b_{10}d_{10} + b_{11}d_{11} + b_{12}d_{12} + b_{13}d_{13} + b_{14}d_{14} + b_{15}x_1 + b_{16}x_2 + b_{17}x_3 + b_{18}x_4 + e$$

y_1 = Total number of deliveries at the health facility of the general nurse and midwife (GNM)

ii. GNM Regression II

$$y_1 = b_0 + b_1d_1 + b_2d_2 + b_3d_3 + b_4d_4 + b_5d_5 + b_6d_6 + b_7d_7 + b_8d_8 + b_9d_9 + b_{10}d_{10} + b_{11}d_{11} + b_{12}d_{12} + b_{13}d_{13} + b_{14}x_1 + b_{15}x_2 + b_{16}x_3 + b_{17}x_4 + b_{18}x_5 + e$$

y_1 = Total number of deliveries referred from the health facility of the GNM

d_1	Dummy for a gynaecologist available in the health facility
d_2	Dummy for anaesthetist available in the health facility
d_3	Dummy for paediatrician available in the health facility
d_4	Dummy for specialist doctors conducting delivery
d_5	Dummy for suction equipment available in the health facility
d_6	Dummy for ambu bag available in the health facility
d_7	Dummy for disposable delivery kit available in the health facility
d_8	Dummy for food facility available in the health facility
d_9	Dummy for day guard available in the health facility
d_{10}	Dummy for night guard available in the health facility
d_{11}	Dummy for equipment neonatal resuscitation available in the health facility
d_{12}	Dummy for facility for managing neonatal hypothermia and jaundice available in the health facility
d_{13}	Dummy for functioning new born unit available in the health facility
d_{14}	Dummy for a full time specialist available in the health facility
x_1	No. of function labour tables in the health facility
x_2	No. of postpartum beds in the health facility
x_3	Distance to nearest govt. HF
x_4	Distance to nearest pvt. HF

d ₁	Dummy for a gynaecologist available in the health facility
d ₂	Dummy for anaesthetist available in the health facility
d ₃	Dummy for paediatrician available in the health facility
d ₄	Dummy for specialist doctors conducting delivery
d ₅	Dummy for suction equipment available in the health facility
d ₆	Dummy for ambu bag available in the health facility
d ₇	Dummy for disposable delivery kit available in the health facility
d ₈	Dummy for food facility available in the health facility
d ₉	Dummy for equipment neonatal resuscitation available in the health facility
d ₁₀	Dummy for facility for managing neonatal hypothermia and jaundice available in the health facility
d ₁₁	Dummy for functioning new born unit available in the health facility
d ₁₂	Dummy for a full time specialist available in the health facility
d ₁₃	Dummy for ambulance facility available at the health facility
x ₁	No. of function labour tables in the health facility
x ₂	No. of postpartum beds in the health facility
x ₃	Distance to nearest govt. HFx4Distance to nearest pvt. HF
x ₅	Number of deliveries conducted at health facility of the GNM

The results of the first set - GNM regressions I and II are given in Tables 18a and 18b respectively. Results of the first regression of the number of deliveries conducted by the HFs of GNM on the set of explanatory variables indicates that there is a significant impact of availability of a gynaecologist and a full time specialist in the facility on the number of deliveries. After dropping statistically insignificant variables from the model through the step-wise regression method, it is found that the distance of the HF to the nearest government health facility also tends to have a significant impact on the deliveries. All these variables also carry expected signs and are statistically significant. The adjusted R-square values of these regressions are highly significant and improve after eliminating the insignificant

variables. Apart from these two, three other variables, viz., food facility, night guard availability and distance to nearest private HF, also tend to have a significant impact on the number of deliveries. However, they carry a perverse sign requiring some explanation. This could probably be related to quality and reliability of those services available in the rural areas compared to the extra costs involved particularly in the case of food facility and night guard availability. Considering the negative impact of distance to private facility, it could be argued that a nearby private facility in rural area is likely to be less equipped and provide poorer quality of service per rupee cost as compared to the government HF. Thus, the nearby private facility is not perceived to provide satisfactory value for money by the

patients. Hence, there is a likely preference of users towards a public health facility with doctors and even a specialist over a probably unqualified private practitioner providing delivery services nearby.

The second GNM regression related to the number of deliveries referred by GNM HF on the set of explanatory variables. The results indicate

that the number of referrals made by these facilities was significantly explained by the total number of deliveries conducted and the availability of anaesthetist at the facility, particularly when insignificant variables are dropped through the step-wise regression. The signs of the coefficients are also as expected for all the explanatory variables.

Table 18a. GNM Regression I (Deliveries Handled)

Variables	Unit	Slope-b	t Stat	P-value	R Square	Adjusted R Square	F - Signi.	Observations
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>No. of Deliveries at GNM Facility on All Variables Basic Regression</i>								
Gynec.	Dummy	54.9	2.373	0.022	0.624	0.463	0.000	61
Anesth.	Dummy	-9.318	-0.311	0.757				
Pedia.	Dummy	13.9	0.586	0.561				
SP Cond. Del.	Dummy	-40.8	-1.249	0.219				
Suction Equipment	Dummy	-15.07	-0.538	0.593				
Ambubag	Dummy	14.66	0.547	0.587				
Disposable Delivery Kit	Dummy	4.508	0.252	0.803				
Food-Fac.	Dummy	-36.1	-2.038	0.048				
Day Guard	Dummy	-1.168	-0.031	0.976				
Night Guard	Dummy	-29.6	-0.824	0.414				
Equip. NN Resuscitation	Dummy	24.1	1.038	0.305				
Facc.NN-Hypothermia-Jau ndice	Dummy	5.94	0.23	0.820				
New Born Unit-Functioning	Dummy	-23.9	-0.956	0.345				
Full Time SP	Dummy	70.96	2.793	0.008				
Labour Table	Number	11.47	0.878	0.385				
PP Beds	Number	1.574	1.286	0.205				
Dist. near Govt. fac.	Number	1.314	1.524	0.135				
Dist. near Pvt. fac.	Number	-1.298	-2.196	0.034				
<i>No. of Deliveries at GNM Facility on Selected Variables Step-wise Regression</i>								
Gynec.	Dummy	55.342	3.533	0.001				
SP Conducting Delivery	Dummy	-29.246	-1.06	0.294				
Food-Facc.	Dummy	-34.981	-2.415	0.019				
Night Guard	Dummy	-32.903	-2.243	0.029				
Equip. NN Resuscitation	Dummy	25.262	1.502	0.139	0.604	0.535	0.000	61
Full Time SP	Dummy	69.343	3.127	0.003				
PP Beds	Number	1.465	1.378	0.174				
Dist. near Govt. fac.	Number	1.589	2.155	0.036				
Dist. near Pvt fac.	Number	-1.157	-2.355	0.022				

Table 18b. GNM Regression II (Deliveries Referred)

Variables	Unit	Slope-b	t Stat	P-value	R Square	Adjusted R Square	F - Signi.	Observations
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>No. of Deliveries Referred by GNM Facility on All Variables Basic Regression</i>								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Gynec	Dummy	0.862	0.506	0.615				
Anesth	Dummy	-4.599	-2.199	0.033				
Pedia	Dummy	0.342	0.204	0.840				
SP Conducting Delivery	Dummy	0.379	0.155	0.877				
Suction	Dummy	1.696	0.861	0.394				
Ambubag	Dummy	-0.057	-0.03	0.976				
Disp. Del-Kit	Dummy	0.256	0.198	0.844				
Food-Fac	Dummy	0.127	0.097	0.923				
Equip. NN- Resuscitation	Dummy	0.329	0.191	0.849				
Facc. NN-Hypothermia &Jaundice	Dummy	-0.95	-0.495	0.623	0.335	0.050	0.323	61
New Born Unit-Functioning	Dummy	1.746	0.955	0.345				
Full Time SP	Dummy	-2.701	-1.3	0.201				
Ambulance	Dummy	-0.283	-0.181	0.857				
Labor Table	Number	-0.498	-0.541	0.591				
PP Beds	Number	0.045	0.465	0.645				
Dist. near Govt. fac.	Number	0.054	0.814	0.420				
Dist. near Pvt fac	Number	0.026	0.574	0.569				
Deliveries at GNM Facility	Number	0.029	2.628	0.012				
<i>No. of Deliveries Referred by GNM Facility on Selected Variables Step-wise Regression</i>								
Aeasth.	Dummy	-3.904	-2.455	0.017				
Full Time SP	Dummy	-1.712	-1.295	0.201	0.256	0.217	0.0007	61
Deliveries at GNM Facility	Number	0.032	3.971	0.000				

The second set of regressions - MO regression I and MO regression II related to the deliveries conducted and referred by the MO HFs on the set of explanatory variables. The details are given below.

iii. MO Regression I

$$y_1 = b_0 + b_1d_1 + b_2d_2 + b_3d_3 + b_4d_4 + b_5d_5 + b_6d_6 + b_7d_7 + b_8d_8 + b_9d_9 + b_{10}d_{10} + b_{11}x_1 + b_{12}x_2 + b_{13}x_3 + b_{14}x_4 + e$$

y_1 = Total number of deliveries at the health facility of the medical officer (MO)

iv. MO Regression II

$$y_1 = b_0 + b_1d_1 + b_2d_2 + b_3d_3 + b_4d_4 + b_5d_5 + b_6d_6 + b_7d_7 + b_8d_8 + b_9d_9 + b_{11}x_1 + b_{12}x_2 + b_{13}x_3 + b_{14}x_4 + e$$

y_1 = Total number of deliveries referred by the health facility of the MO

d ₁	Dummy for a gynaecologist available in the health facility
d ₂	Dummy for anaesthetist available in the health facility
d ₃	Dummy for paediatrician available in the health facility
d ₄	Dummy for a full time specialist available in the health facility
d ₅	Dummy for delivery equipment to be replaced in the health facility
d ₆	Dummy for equipment for neonatal resuscitation available in the health facility
d ₇	Dummy for functioning new born unit available in the health facility
d ₈	Dummy for food facility available in the health facility
d ₉	Dummy for day guard available in the health facility
d ₁₀	Dummy for night guard available in the health facility
x ₁	No. of function labour tables in the health facility
x ₂	No. of postpartum beds in the health facility
x ₃	Distance to nearest govt. HF
x ₄	Distance to nearest pvt. HF

d ₁	Dummy for a gynaecologist available in the health facility
d ₂	Dummy for anaesthetist available in the health facility
d ₃	Dummy for paediatrician available in the health facility
d ₄	Dummy for a full time specialist available in the health facility
d ₅	Dummy for delivery equipment to be replaced in the health facility
d ₆	Dummy for equipment for neonatal resuscitation available in the health facility
d ₇	Dummy for functioning new born unit available in the health facility
d ₈	Dummy for food facility available in the health facility
d ₉	Dummy for ambulance facility available at the health facility
x ₁	No. of function labour tables in the health facility
x ₂	No. of postpartum beds in the health facility
x ₃	Distance to nearest govt. HF
x ₄	Distance to nearest pvt. HF
x ₅	Number of deliveries conducted at health facility of the MO

The results of MO regressions I and II are given in Tables 19a and 19b respectively. The results show a satisfactory fit of the model to the data. The number of deliveries conducted at the MO facility is explained by the availability of a full time specialist and the number of labour tables available. Moreover, after eliminating the insignificant variables, the availability of a functioning new-born unit and the need to replace the delivery

equipment also significantly explain the deliveries. The signs of the coefficients for all these variables are also as expected ones. However, the coefficient of gynaecologist available (significant at 10% level) has a perverse sign, which is possibly explained by the availability of gynaecologist at the facility not being utilised as a specialist due to misallocation of skilled manpower as discussed earlier.

Table 19a. MO-Regression I (Deliveries Handled)

Variables	Unit	Slope-b	t Stat	P-value	R Square	Adjusted R Square	F - Signi.	Observations
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>No. of Deliveries at MO Facility on All Variables Basic Regression</i>								
Gynec.	Dummy	-76.5	-1.191	0.246				
Anesth.	Dummy	39.18	0.575	0.571				
Pedia.	Dummy	11.43	0.168	0.868				
Full Time SP	Dummy	131.12	2.775	0.011				
Replace_Del_Equip.	Dummy	82.31	1.798	0.085				
Equip. NN Resuscitation	Dummy	11.57	0.235	0.817				
New Born Unit-Functioning	Dummy	54.03	1.306	0.204	0.626	0.398	0.015	38
Food-Fac.	Dummy	20.45	0.563	0.579				
Day Guard	Dummy	-32.12	-0.396	0.696				
Night Guard	Dummy	57.73	0.652	0.521				
Labour Table	Number	59.91	2.971	0.007				
PP Beds	Number	-1.74	-0.336	0.74				
Dist. near Govt. fac.	Number	0.5	0.408	0.687				
Dist. near Pvt fac.	Number	0.1	0.064	0.950				
<i>No. of Deliveries at MO Facility on Selected Variables Step-wise Regression</i>								
Gynec.	Dummy	-68.59	-1.781	0.084				
Full Time SP	Dummy	128.22	3.609	0.001				
Replace Del. Equip.	Dummy	70.67	2.139	0.040	0.604	0.542	0.000	38
New Born Unit-Functioning	Dummy	65.28	2.078	0.046				
Labour Table	Number	62.99	3.928	0.000				

The regression of number of deliveries referred by MO facility on the set of explanatory variables shows that these referrals are explained significantly by the availability of gynaecologist, equipment for neonatal resuscitation, food facility, ambulance, and the total number of deliveries conducted. The significantly large R-square and the adjusted R-square also show high explanatory power of the model. Moreover, while the coefficients of most of these variables have the expected signs, the variable of ambulance facility shows a perverse sign indicating lower referrals in facilities having an ambulance. This could probably be explained by the fact that the very existence of an ambulance is indicative of better infrastructure available in the HF and hence a

greater possibility of handling some complications rather than referring to higher level facility. Among the coefficients of other variables showing perverse sign include the availability of anaesthetist, functioning new born unit, and number of labour tables. While the first two of the three variables come out significant at 10% level, the last one is insignificant and can be ignored. The perverse sign for the availability of anaesthetist could again be due to the sub-optimal allocation of specialists discussed earlier. Similarly, although the new born unit at the MO facility may be working, the trained MOs may not feel confident of handling complicated delivery cases or because they may lack other essential infrastructure in their HFs.

Table 19b. MO-Regression II (Deliveries Referred)

Variables	Unit	Slope-b	t Stat	P-value	R Square	Adjusted R Square	F - Signi.	Observations
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>No. of Deliveries Referred by MO Facility on All Variables Basic Regression</i>								
Gynec.	Dummy	-7.993	-2.247	0.037				
Anesth.	Dummy	7.399	1.901	0.073				
Pedia.	Dummy	1.819	0.427	0.675				
Full Time SP	Dummy	-1.519	-0.497	0.625				
Replace_Del_Equip.	Dummy	2.86	1.065	0.300				
Equip. NN resuscitation	Dummy	-5.07	-2.02	0.058				
New Born Unit-Functioning	Dummy	3.623	1.58	0.131	0.788	0.632	0.001	34
Food-Fac.	Dummy	-5.426	-2.588	0.018				
Ambulance	Dummy	-5.669	-2.344	0.030				
Labour Table	Number	1.451	1.169	0.257				
PP Beds	Number	-0.268	-0.967	0.346				
Dist. near Govt. fac.	Number	0.042	0.653	0.521				
Dist. near Pvt. fac.	Number	0.065	0.74	0.468				
Deliveries at MO Facility	Number	0.039	2.446	0.024				
<i>No. of Deliveries Referred by MO Facility on Selected Variables Step-wise Regression</i>								
Gynec.	Dummy	-7.24	-2.668	0.013				
Anesth.	Dummy	5.95	1.841	0.078				
Replace Del. Equip.	Dummy	2.293	1.102	0.281				
Equip. NN resuscitation	Dummy	-4.498	-2.044	0.052				
New Born Unit-Functioning	Dummy	4.113	2.004	0.056	0.760	0.670	0.000	34
Food-Fac.	Dummy	-5.588	-3.133	0.005				
Ambulance	Dummy	-6.134	-2.97	0.007				
Labour Table	Number	1.323	1.153	0.260				
Deliveries at MO Facility	Number	0.038	2.917	0.008				

The third and final regression analysis relates to the number of paediatric patients regressed on selected variables as shown in the model below:

y_1 = Average number paediatric cases per day received by the health facility of MO

v. MO Regression III

The result of the above regression is given in

$$y_1 = b_0 + b_1d_1 + b_2d_2 + b_3x_1 + b_4x_2 + b_5x_3 + e$$

Table 20.

d_1	Dummy for the medical officer comfortable in handling paediatric cases in OPD
d_2	Dummy for paediatrician available in the health facility
x_1	No. of OPD cases received per day by the health facility
x_2	Distance to nearest govt. HF
x_3	Distance to nearest pvt. HF

Table 20. MO Regression III (Paediatric OPD)

Variables	Unit	Slope-b	t Stat	P-value	R Square	Adjusted R Square	F - Signi.	Observations
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>No. of Paediatric OPD cases received at MO Facility on All Variables</i>								
MO-Comfort	Dummy	12.95	2.03	0.050				
Paedia.	Dummy	14.52	2.85	0.007				
No. OPD per day	Number	0.221	10.37	0.00	0.769	0.736	0.000	41
Dist. near Govt. fac.	Number	0.12	1.009	0.320				
Dist. near Pvt. fac.	Number	0.082	0.717	0.478				

To begin with, it is found that the R-square and adjusted R-square values are highly significant. It further shows that the number of paediatric patients coming to the MO's HF is primarily determined by the number of total OPD. The implication is that the number of pediatric patients received at the MO facility was significantly explained by the total number of outdoor patients that the facility received on a daily basis. Moreover, since the sign of the slope coefficient is positive it implies that the number of pediatric cases are directly related to the number of OPD cases) received by the facility. Moreover, the availability of a paediatrician in the MO facility and the comfort of the medical officer in handling

the paediatric cases are also significantly impacting the number. However, the distances from the nearest government or private health facilities do not have any effect on the paediatric patients received by the HF.

Based on all of the above regression results, we find that the number of deliveries in both MO and GNM facilities are significantly determined by the availability of a full time specialist in the facility. This is true irrespective of the fact that a specialist conducting delivery does not turn out to be having a significant impact on deliveries in at GNM facilities. Moreover, the availability of a gynaecologist in a MO facility tends to reduce

the number of referrals from MO facilities. Finally, it is also observed that the number of paediatric patients visiting the MO facility is also significantly determined by the availability of a paediatrician at the HF. Hence, it could be argued that placing of specialists at the health facilities could act as a major step in terms of improving the health output by providing access to the specialist services for the maternal and child health. Since, the number of deliveries (mainly at GNM facility) is also significantly explained by the distance to other government health facilities, the availability of specialist could further strengthen the HFs in the remote rural regions. Moreover, this would also be relevant in the context of increasing utilisation of public health facilities in rural areas which is generally found to be low. Iyengar and Dholakia [2012], in a study regarding access to healthcare services in rural areas of selected states in the country, indicated that nearly 70% of the poorest of the poor population in rural areas visited private health facilities due to unavailability of quality care at the rural public health facilities. However, this proportion was found to be greater in the northern states of UP, MP and Rajasthan than the southern states of AP, Karnataka and Tamil Nadu.

VI. SUMMARY AND RECOMMENDATIONS

Specialist services in the rural areas of the four selected states face serious limitations primarily in terms of the availability of specialist doctors at the rural health facilities including the PHCs and CHCs. The concentration of the specialist was mainly at the district centre and at some places at the sub-district hospitals. This was true not only because these hospitals acted as a referral point for the rural health facilities, but also because the total numbers of specialists working in the public health system of the visited districts were extremely low. This created a compulsion for the healthcare providers at PHCs and CHCs to refer all cases requiring specialist attention to the district centre despite having low patient load at their facilities. Also, patients were compelled to

travel relatively large distances under critical situations for availing specialist services. Moreover, inappropriate placements (allocations) and irregular presence of specialists at different health facilities have caused underutilisation of the highly scarce skills of these doctors working under the public health systems. For instance, while some of the remote rural CHCs having gynaecologist could provide emergency obstetric care (EMoC) services, they could not do so due to unavailability of an anaesthetist. Secondly, a paediatrician who could have been more effective in focusing on child care only was in many cases attending to general OPD which a medical officer (MBBS) could have easily handled. There is a lack of clearly defined roles for different doctors based on their qualifications and expertise.

The findings of the survey also further suggest that the salary and incentive structure of the specialists is not at all conducive and attractive to retain them. While there are significantly large differences in their salaries, not only across states but also within the states, their appointments seem to be hardly made considering their qualification and specialisation. In fact, these doctors have said that their counterparts have much greater earnings in private practice compared to their salaries. Moreover, they also do not receive any incentives in terms of housing or transport allowances or any kind of rewards in cash or kind for their performance. This is causing dissatisfaction among the specialists resulting in expressed willingness to leave the government jobs to do private practice and move to urban areas for better earnings opportunities. Furthermore, the working environment for the specialists was also observed to be poor. While most of these doctors had to be on duty for longer hours and for about 6 days in a week, most of them also could not take leave easily. Moreover, when specialists would be on leave, the patients had to be handled by the MOs and paramedics or had to be referred to other facilities. Finally, the specialists also reported

insufficient support staff, equipment and other infrastructure for providing adequate services in the area of their specialisation.

The efforts of the public health system for improving the access of people to specialist services also do not appear to be effective. One of the major efforts was of providing short term training to MOs in the areas of gynaecology, paediatrics or anaesthesia for enhancing specialist services at the rural facilities. However, it was found that while some of these TMOs (trained MOs) did attend to speciality cases and were confident in doing so, there were many who continued to work on general cases and could not get involved in specialist care. Moreover, many of these MOs were either recommended by seniors or were ordered by the district officials to take up the training and in most cases they were not given any choice about the type of the specialisation they wanted to go for. Many of the TMOs also felt a need of trainings for longer duration and regular refresher courses in order to strengthen and upgrade their skills. The specialist doctors who supported this effort suggested that these types of training should be conducted independently for the MOs (not along with PG students as it is done now) for better results. The district officials in this regard felt that there is a need for more number of such training required with more MOs covered under the training as the current level is not able to bring about expected changes in the quality specialist care in the public health facilities. However, they are unable to do the same due to the centralisation of the decision making process existing in the state level administration.

Use of ICT for consulting specialists was not found very popular with a majority of the medical officers and paramedical staff at lower level facilities in case of difficulty in treating the patients. Moreover, the use of SMS, email and internet among the MOs was also found to be non-existent. However, the use of ICT among

specialists was found to be relatively better with greater proportions of these doctors using mobile phones for consultation and internet for medical information. A number of specialists in all states also advocated the idea of teleconferencing and services like call centres for specialist consultations, though these services are currently not available. In fact, the district officials indicated that the poor level of ICT infrastructure is preventing them from an extensive use of modern communication techniques.

Providing effective specialist care service for maternal and child care through the public health system would require major changes to be brought about at all levels starting from district hospitals to PHCs. Some of these changes could be as follows:

1. While the recruitment of the required specialists would be one of the primary efforts, a more systematic and logical placement of these doctors is also called for. Moreover, the designation, incentive structure and salaries given to the specialists will have to be separately considered rather than merging them with the general MBBS doctors. While the hiring of doctors could be done on a contractual basis, the emoluments paid to them will have to be competitive for them to stay and work.
2. The placement of the doctors will have to be made on the basis of the needs of the locality of health facilities and to ensure optimum utilisation of their skills. For instance, a gynaecologist placed at more than one facility on part time basis would cause underutilisation of his/her skills. Moreover, they have to be placed along with anaesthetist so that they are able to conduct surgical procedures at their facility itself.
3. Specialists would have to be provided with basic facilities such as residential quarters and non-practicing allowances to ensure

their continuous availability in the health facilities. Moreover, the availability of the support infrastructure and manpower for each type of specialist will have to be ensured. For instance, a gynaecologist will have to be compulsorily provided trained nurses along with a functioning OT and laboratory for effectively providing emergency obstetric care. The paediatricians posted at the neo-natal care units would require trained round clock paramedical staff and also services like 24-hours uninterrupted electricity supply.

4. It should be ensured that a specialist doctor's time is dedicated only to complicated cases requiring their attention. Some of the specialist doctors, specifically paediatricians and gynaecologists, indicated that under the public health system there was no process of screening of cases that require specialist's consultation. This could be easily done by a medical officer and only specific cases with complications could be sent to specialists. Such a process would not only save the time of the specialist but they could also concentrate better on the specific cases to provide better and effective specialty care. Hence such a process should be systematically introduced.
5. The effort on training of the MOs for providing support to the existing specialists will have to be significantly revised particularly for longer duration trainings and also providing refresher programmes. Moreover, the TMOs should be allowed to choose the area of specialisation and it should be ensured that after such training they are utilised only for providing support to the existing specialist at CHCs, DH and SDH. Putting TMOs to attend to general OPD along with other MBBS would waste the time and resources spent on them. In fact, a set of TMOs could be identified for training

so as to provide consultation only at PHCs or CHCs on rotation basis for cases requiring specialist attention mainly in the areas of gynaecology and paediatrics. It could also be decided to compulsorily give training to all MOs in the area of their choice so as to develop a confidence among them to handle critical maternal and child health situations before referring to higher level.

6. The current level of use of information and communication technology is quite low within the public health system. Currently it is only restricted to personal use of mobile phones for consultations by selected specialist doctors. An effort could be made to increase the prevalence and use of ICT for consultations of cases requiring specialist attention at the lower level facilities. Services like video conferencing and audio conference call facilities could be effectively used to provide support to MOs working at PHCs to effectively attend to crucial maternal and child care cases.

One of the obvious ways of increasing the number of specialists would be through expansion of the post-graduate medical seats. However, this is a long-run process requiring policy decisions at various levels of government departments at the centre and the state. To begin with, it would be crucial not to lose the existing specialist doctors available in the public health system and utilise their skills through proper planning and strategic interventions. As observed from the survey, the number of patients requiring critical specialist care forms a relatively small proportion. Hence, certain critical interventions could rule out the probability of requiring a referral or at least reduce the risk factor involved. Improving maternal and child health care scenario in rural India so as to reduce mortality is a comprehensive process with specialist service being a part of the same. If the required care is

made accessible at the right time, it could effectively bring positive outcomes on health indicators. An additional effort in this direction could also involve discussions with the users of these services, i.e., taking the patients opinion. This would give additional insights into the problems faced from the demand side of the healthcare services provided under the public health system. However, this would be an area for further research to use the existing specialist services in rural areas optimally to ensure necessary access and address problems of public health system.

NOTES

1. Private healthcare providers available at the village level are normally unregistered and unqualified quack practitioners. Qualified practitioners are usually unavailable in rural or semi-urban locations.

2. It could be argued that the placement and location of these facilities could be effective if done on the basis of the specific existing demand for the healthcare services. However, unlike other market goods, the demand for healthcare services can be determined only on the basis of experience of availability rather than the currently felt need for the same. Hence, in the context of rural areas, the need has to be established on either a population and/or a geographical norm, as done by IPHS norms.

3. The government statistics (HMIS - NRHM: Rural Health Statistics 2014) regarding the number of specialist required, sanctioned and in position at the CHC level does not include anaesthetists. The total specialists only include obstetricians and gynaecologists, paediatricians, physicians and surgeons [RHS-MoHFW, 2014a].

4. The survey was conducted as a part of a project entitled 'Increasing the Availability of Specialist Services in Rural India' that was jointly undertaken by the Columbia Global Centres South Asia, Columbia University and the Indian Institute of Management, Ahmedabad.

5. The selected states [Bihar, MP, Rajasthan and UP] were historically called BIMARU indicating poor performance of socio-economic indicators such as per-capita income, education and healthcare. The term was a term coined during the early 1980's by demographer Ashish Bose. It is a commonly used terms in various socioeconomic studies referring these states and their performance in various socio-economic indicators [Ahluwalia, 2000] and [Sharma, 2015].

6. The total number of specialists available in the entire Jehanabad district was only 3. In order to cover the minimum sample size of specialists, the doctors working in the neighbouring districts (Vaishali and Bihar Sharif) were also considered. A minimum of 15 specialists from each state had to be surveyed in order to cover a total sample size of 60 specialists.

7. The regression models used for assessing the impact of health inputs on health outputs have made use of a large number of dummy variables and a few real variables on the basis of the type of data collected regarding availability of manpower and infrastructure facilities. First, it does not create any estimation problems since all the dummy variables are distinct, and second, so long as there is at least one non-dummy regular independent variable in the equation, interpretation of the estimates is non-problematic, because the slope parameter and intercept parameters can be easily identified. Dummies in the model only estimate the value of intercepts without measuring the slope and regular variables provide respective slope parameters. Hence, it is ensured that the models used for the analysis here do have a combination of both regular and dummy variables not only before but also after eliminating insignificant variables through step-wise regressions.

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GEOGRAPHY OF DALIT ENTERPRISES: 1998 TO 2005

Sharadini Rath

There is sufficient evidence to conclude that Dalits are substantially under-represented in the non-farm economy of India. They also face subtle forms of discrimination as job seekers and entrepreneurs. This paper presents the geography of their enterprises by studying the concentrations of Dalit owned non-farm enterprises across major states using Economic Census data for 1998 and 2005. This analysis shows that there are significant shifts taking place in the choices Dalit entrepreneurs are making regarding both the type of enterprise as well as its location. West Bengal, Maharashtra, Tamilnadu and Andhra Pradesh are significant sites of change that show Dalits moving away from traditional occupations and into more contemporary sectors of the economy. The high share of Dalit enterprises in West Bengal, its persistence in Maharashtra and its growth in Tamilnadu over this period make room for very different interpretations of where in India Dalits are most enabled.

1. INTRODUCTION

The participation of Dalits* in the economy has been an intense focus of study over the past decade. There have been attempts to formulate government policies that go beyond the constitutional provision for reservations for Dalits in education and government jobs, to make them also mandatory in private sector employment [Madheswaran, 2008]. The 'merit' argument has been made to block such provisions, and to point to the deficiencies of the education system as the cause of the poor representation of Dalits in private sector employment, rather than discrimination on the basis of caste ['Business and Caste in India: With Reservations', *The Economist*, October 6, 2007]. There are studies to show that access to employment in the private sector is where Dalit participation falters far more than even wage discrimination [Jodhka, 2008; Thorat & Attewell 2007; Jodhka & Newman, 2007]. Outside of the labour market, Dalits have been hampered by the *jati* based system of occupations that has been in operation for centuries. Their poverty, combined with social prejudice against their entry into 'non-traditional' occupations has meant it has been a hard task for them to become successful independent entrepreneurs [Jodhka, 2010].

It is against this background that this paper examines the non-farm enterprises that Dalits owned over the period 1998 to 2005, based on data from the 4th and 5th Economic Census, done in 1998 and 2005 respectively. How far have Dalits moved outside caste mandated occupations, which types of enterprises appear to offer the least resistance, what is the growth in the size of this participation in entrepreneurship from 1998 to 2005 and what does all this say about the status of Dalits and their acceptance in the broader economy and society? These are some of the questions that will be addressed with this examination. The paper will also look at some state level differences to understand the possible impact of Dalit political mobilisation and its consequences in specific regional contexts. There is work arguing that political mobilisation in itself does not lead to deeper advances in access to education, health and further, to economic opportunity. This paper will examine some state level differences in these terms also. It is of interest to understand how, a good ten to fifteen years after the market reforms of 1991, Dalits have been able to take advantage of these changed economic conditions.

Data of the 1990, 1998 and 2005 Economic Census has been used in other studies of Dalit non-farm entrepreneurship. Iyer et al [2013] conclude the persistence of under-representation

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of Dalits not only across the urban-rural divide, but also in states that have progressive policies regarding Dalits, and where Other Backward Castes (OBCs) have made progress. The state-wise trends and relative changes in the status of Dalit participation in the non-farm economy have been studied in some detail in Harris-White [2014]. This book arrives at the relative status of both participation of Dalits in the non-farm economy, and also the degree of discrimination they face across major regions of India by measuring enterprise ownership changes within states. Deshpande et al [2013] use data from a more focused census of Micro, Small and Medium Enterprises of 2001-02 and 2006-07 to add a crucial factor to the study of Dalit ownership of enterprises, not available in Economic Census data; that of the profile of the employees of Dalit owned enterprises. It showed that the share of Dalit employees in Dalit owned enterprises actually declined from 85 to 61 percent over this period. This points at deeper structural issues that affect Dalits entering the non-farm marketplace, not only as entrepreneurs, but also as job seekers.

Given these varied studies and their insights, this paper attempts to take a different approach. It presents a geography of Dalit populations and enterprises over this period of 1998 and 2005. It is a study of concentrations rather than inward looking state level trends and gives a different perspective to understand the relative status of Dalits across India. The results will reinforce some of the broad conclusions drawn by other studies, but will also address the questions: given the level of Dalit participation in these two years, what is its geography of enterprise concentration by type and size, how has it changed, and what does it say about the relative status of Dalits across India? The insight offered by this approach is quite different from the studies above, and adds a further layer of possible interpretations of the social, political and economic changes that are impacting Dalits in the era of market liberalisation. A study of concentrations gives two crucial

pieces of information. First, it clarifies the regional 'traditional' or dominant non-farm occupational profiles of Dalits. It creates a spatial and temporal baseline from which to measure changes in types of enterprises they are taking up over more recent years. Leather works in Rajasthan and handicrafts in Odisha are examples of such traditional occupations and measuring their concentrations by state, establish their dominant regional locations. Second, shifts away from such traditional occupations into more 'modern' or 'mainstream' enterprises, for example in the service sector, can not only be clearly measured, but the dominant geographical locations of these shifts can also be identified unambiguously. This leads to the question: why are Dalits in these locations taking the lead in these changes? One can then formulate further hypotheses and studies to understand the processes that are enabling these changes. The results of this paper identify both the locations and types of enterprises that can be the focus of such further enquiry. They can give valuable inputs to policy making, and also contribute to social, political and economic interpretations in Dalit studies.

The paper is structured as follows: Section 2 gives the basic structure of Dalit enterprises from the Economic Census data, Section 3 studies the locations and types of large Dalit enterprises, i.e., those hiring more than 10 workers, Section 4 the geographical concentrations of all types of Dalit enterprises, and Section 5 concludes.

2. DALIT ENTERPRISE IN 1998 AND 2005

We start by looking at the spread of Dalit owned enterprises for the 21 major states of India across a 10 point classification by broad type. This census of enterprises counts all sizes, from owner operated to large hiring ones. Over this period the number of Dalit owned enterprises increased by 57.74 percent, while total enterprises increased by a much smaller 38.74 percent. While they formed 7.7 percent of all enterprises in 1998, by 2005 this share of Dalit enterprises went up to

8.76 percent. They employed 5.35 percent of all workers in the non-farm sector in 1998, by 2005 this share was slightly up at 6.36 percent. Employment in Dalit enterprises increased by nearly 45 percent compared to about 21 percent in all enterprises over this period. The per enterprise workers in Dalit enterprises remained low, at about 1.8 workers, while the total average was 2.7 in 1998 and declined slightly to 2.4 in 2005. It is clear that this was a period of change for the Dalit community as a whole. Dalits formed about 16 percent of the population of these major states, and in that sense they remain highly under-represented in this section of the economy. But this data shows some encouraging movements in correcting this disparity. Dalits seem to be entering the market as independent entrepreneurs in larger numbers in this period.

In the following sections we will examine the geography of this change by type of enterprise in

some detail, and try to understand the temporal and spatial changes in the economic choices being made by Dalits over this period.

Table 1 shows that Dalit enterprises follow the same broad pattern that can be seen in the total, with the largest numbers being in trade. Manufacture is the second and the Primary Sector (animal husbandry, forestry, and fishing) comes third. Between 1998 and 2005, the primary sector saw its share increase from 12.56 to 16.81 percent, along with that of transport and communication from 1.42 to 2.03 percent, and a small increase in services. While trade lost a small share, manufacture lost ground more significantly, from 28.55 percent in 1998 to 23.69 percent in 2005. This trend of a decline of manufacture is not specific to Dalit owned enterprises, but common to this period, across states.

Table 1. Percentage of Dalit Owned Enterprises in 1998 and 2005 Across 10 Broad Categories of Non-farm Enterprises

Dalit Enterprises Type of Enterprise	% of Total	
	1998	2005
(1)	(2)	(3)
Primary sector (animal husbandry, forestry, fishing)	12.56	16.81
Mining and quarrying	0.16	0.28
Manufacture	28.55	23.69
Energy, water supply	0.03	0.05
Construction	1.62	1.24
Trade - wholesale and retail	39.2	38.48
Hotels and restaurants	2.71	2.68
Transport and communication	5.91	7.38
Services	1.42	2.03
Public Administration, social security	7.85	7.36
Total	100	100
Total Dalit enterprises	2298470	3625632
Employment in Dalit enterprises	4338847	6278117
Total enterprises	29825724	41383721
Employment in total enterprises	81473177	98711331

Dalit owned enterprises were far more likely to be owner operated, with no hired workers, than the total. Among all enterprises, 70.59 percent had no hired workers in 1998, and 64.67 percent in 2005. While the spread of the type of enterprise might be similar, the detailed structure of Dalit enterprises reflected certain handicaps. As seen in Table 2, the proportion of Dalit enterprises with no hired workers declined from 1998 to 2005, from 85.65 to 76.94 percent. It increased in the 1 to 10 hired worker category from 13.87 to 22.74 percent, but the number of workers per enterprise in this category declined from 3.25 in 1998 to 2.84 in 2005. The gains made in having slightly larger enterprises also resulted in these generating lower employment. The share of Dalit enterprises hiring more than 10 workers remained extremely small even in 2005. It should be noted that the decline in the proportion of enterprises in the 11 to 50 hired workers category happened across all ownership categories, and across states.

Table 2. Percentage of Dalit Owned Enterprises Categorised by Number of Hired Workers in 1998 and 2005

Dalit Enterprises Hiring category	% of total	
	1998	2005
(1)	(2)	(3)
No hired workers	85.65	76.94
1 to 10	13.87	22.74
11 to 50	0.44	0.23
51 to 99	0.02	0.04
100 and more	0.02	0.04
Total	100	100

A first look at the spread of Dalit enterprises across major states of India gives an interesting picture. Table 3 gives the spread of Dalit population and their enterprises in 1998 and 2005 across the major states of India. A careful perusal points at some very pertinent developments that seem to be taking place in different parts of the country.

Table 3. Spread of Dalit population (as per 2001 Population Census) and Dalit Owned Enterprises across the Major States of India

State	% of 2001 Total Dalit Population	1998 % Dalit enterprises	2005 % Dalit enterprises
(1)	(2)	(3)	(4)
Andhra Pradesh	7.45	7.02	6.98
Assam	1.1	2.07	3.15
Bihar	7.88	2.09	1.83
Chhattisgarh	1.46	1.37	1.19
Delhi	1.41	2.2	2.03
Gujarat	2.17	2.03	1.59
Himachal Pradesh	0.91	1.23	0.95
Haryana	2.47	2.05	2.29
Jammu & Kashmir	0.46	0.35	0.36
Jharkhand	1.93	1.08	0.67
Karnataka	5.17	4.1	3.7
Kerala	1.89	1.9	3.2
Maharashtra	5.97	9.76	8.26
Madhya Pradesh	5.53	6.73	4.89
Odisha	3.67	9.17	6.92
Punjab	4.24	3.7	4.56
Rajasthan	5.85	4.79	4.49
Tamilnadu	7.16	5.58	10.96
Uttar Pradesh	21.22	9.3	9.98
Uttarakhand	0.92	0.79	0.82
West Bengal	11.14	22.71	21.19
Total	100	100	100

It can be noted that by and large, the concentrations of Dalit populations and their enterprises coincide across states. However, there are some very notable exceptions to this. There is a vast difference between the two states that have the largest concentrations of Dalit population, Uttar Pradesh (UP) and West Bengal (WB). While UP has about 21 percent, a fifth, of the total Dalit population of the country, it has only about 9.5 percent of Dalit owned enterprises. On the other hand, WB has about 11 percent of Dalit population, but has 21 percent, little over a fifth, of their enterprises. UP has a 16 percent share of total population and about 9.5 percent share of all non-farm enterprises, of all ownerships. In this sense, UP is an under achiever in totality. WB, on the other hand, has about 8 percent of total population and a 10.5 percent share of the total non-farm enterprises. So the Dalit performance in WB clearly outstrips its overall participation. Bihar is in the same category as UP, with 8 percent of the total Dalit population, but only 2 percent of their enterprises. The other states, apart from WB, that contribute Dalit enterprises in larger proportion than their population are Maharashtra and Odisha, to a lesser degree Madhya Pradesh, Assam and Delhi, and as a somewhat late comer, Tamilnadu.

Table 3 gives the basic geography of the concentrations of non-farm Dalit enterprises across states of India. While Maharashtra and Odisha hold onto their edge over population in Dalit entrepreneurship, they slightly decline over the period 1998 to 2005. The real story of Dalit growth in the non-farm sector seems to have come from Tamilnadu (TN), which grew from a 5.6 percent share of Dalit enterprises in 1998, to a very significant 11 percent share in 2005. The two states TN and UP have been compared by Mehrotra [2006] in some detail regarding their very

different trajectories in health indicators, decades after large scale and sustained political mobilisation of Dalits in these states. The study concludes that while political mobilisation of historically deprived communities might be a necessary condition for real change, it is certainly not sufficient for such changes to actually come in to reality. Technical interventions are needed, and all political dispensations must be committed to bringing them in, even with changing electoral fortunes. Tamil politics seems to have held this aspect constant across the board, helping to bring in change. Such constancy of resolve to deal with this issue has not been seen in UP, leading to poor results not only in education and health indicators as shown in the study, but also reflected here in the ability of Dalits to enter the marketplace of entrepreneurship.

3. LOCATIONS OF LARGE DALIT ENTERPRISES

Before embarking on an examination of the geographical spread of different types of enterprises of all sizes that Dalits have set up over this period and any changes in their patterns, it will be interesting to take a look at the spread of large Dalit enterprises across states, since they form a very small portion, 0.5 percent in 1998 and 0.3 percent in 2005. In some sense, Table 4 tells us where Dalit *capital* is seen preferring to locate. This preference is likely to have many underlying reasons, but it can be summed up as a level of comfort, an estimate on the part of the owners of their freedom to do business without hindrance. Where are Dalit owners of larger enterprises choosing to set up? While very small in number, the changes in their geographical pattern tells us something about the mind of a different section of the Dalit entrepreneur, one with access to resources, and quite separate from the household producer.

Table 4. Spread of Large Dalit Owned Enterprises Across States of India, 1998 and 2005

State	1998: % of total				2005: % of total			
	11 to 50	51 to 99	100 and more	Total	11 to 50	51 to 99	100 and more	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Andhra Pradesh	6.27	6.56	6.96	6.3	15.74	16.06	45.66	19.24
Assam	4.1	1.53	11.3	4.22	0.94	1.1	1.91	1.07
Bihar	0.71	1.31	0.58	0.73	0.43	0.19	0.99	0.47
Chhattisgarh	1.05	1.97		1.05	1.03	0.39	0.69	0.91
Delhi	8.01	10.94		7.88	2.64	12.37	8.23	4.61
Gujarat	2.07	3.06	2.61	2.12	1.36	0.91	1.22	1.28
Himachal Pradesh	0.33	0.44	0.29	0.34	0.4	0.26	0.15	0.35
Haryana	1.98	2.41	0.58	1.95	1.36	1.23	1.75	1.39
Jammu & Kashmir	0.16	0.22		0.15	0.2			0.15
Jharkhand	1.08	0.88	0.29	1.04	0.28	0.13	0.23	0.26
Karnataka	5.45	1.75	3.19	5.23	3.1	0.91	1.52	2.62
Kerala	1.83	2.19	1.45	1.84	3.04	0.71	0.99	2.49
Maharashtra	13.56	11.38	11.59	13.41	14.21	5.89	5.64	12.09
Madhya Pradesh	4.24	2.63	1.16	4.07	1.83	0.84	0.53	1.55
Odisha	2.54	1.31	1.16	2.44	1.68	0.45	0.61	1.39
Punjab	2.63	5.47	2.32	2.74	2.22	1.1	1.52	1.99
Rajasthan	4.26	3.5	3.19	4.19	2.08	2.01	1.14	1.96
Tamilnadu	13.4	9.85	10.14	13.15	10.93	3.11	3.51	9.01
Uttar Pradesh	7.07	7.88	6.96	7.1	4.25	2.53	5.64	4.18
Uttarakhand	0.42	0.66	0.58	0.44	0.26	0.06	0.3	0.24
West Bengal	18.85	24.07	35.65	19.61	31.98	49.7	17.76	32.75
Total	100	100	100	100	100	100	100	100
Total Enterprises	10214	457	345	11016	8508	1544	1312	11364

It becomes clear from Table 4 that in the period between 1998 and 2005, the Dalit large enterprise scene went through some very significant geographical shifts. First, there was a very large increase in Dalit owned enterprises hiring more than 50 workers over this period, from 802 to 2856. The 11 to 50 worker category saw a decline, but that is in line with overall trends.

The remarkable performance of WB seen in Table 3 is seen to have a great deal of depth in Dalit enterprise, and with some shifts, has continued to 2005. WB has 50 percent of all Dalit enterprises hiring 51-99 workers, and in all large enterprises its share went up from about 20 to nearly 33 percent. The change in Tamilnadu's Dalit enterprise seen in Table 3, on the other hand, is not of the same quality as WB, with most of its

post-1998 growth not reflected in large units. Maharashtra also shows a small decline. Delhi is seen to have been another preferred destination for Dalit capital hiring more than 100, going from a 0 to 8 percent share.

The biggest beneficiary of this movement of Dalit capital, and their geographical decisions, has been Andhra Pradesh. From being home to just about 7 percent of Dalit owned enterprises in 1998 with more than 100 hired workers, it went to having 45 percent of them in 2005, even as their total number quadrupled. Overall among all large enterprises also its share went up from 6 to 19 percent.

For all large Dalit enterprises hiring more than 10 workers, the only states that saw a positive

growth over this period were AP (215 percent), Kerala (40 percent) and WB (73 percent). All types of large enterprises that showed an increase others, including Maharashtra and Tamilnadu, in these three states.

Table 5. Number of Large Enterprises, Hiring More than 10 Workers, in Andhra Pradesh, Kerala and WB, by Broad Type Category, 1998 and 2005

Enterprise Type	Andhra Pradesh		Kerala		WB	
	1998	2005	1998	2005	1998	2005
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Primary sector	21	307	1	7	228	368
Mining and quarrying	14	27	4	6		13
Manufacture	201	358	64	98	1288	1070
Energy, water supply	3	5	1		6	3
Construction	10	51	1	3	92	39
Trade - wholesale and retail	89	653	17	50	208	1220
Hotels and restaurants	21	70	9	9	36	105
Transport and communication	22	182	11	4	63	475
Services	41	79	24	25	53	67
Public Administration, social security	272	454	70	81	184	362
Total	694	2186	202	283	2158	3722

Large Dalit manufacture saw an overall decline of about 25 percent over this period, including in WB, but this trend is seen to be the opposite in AP, which saw a healthy increase. In fact, AP shows large gains across the board. While big trade is the largest contributor, the gains made in hotels and restaurants, transport and communication, services and social security are quite remarkable. What is needed is a systematic study of the owners of these enterprises, to understand how and why they came to be here. WB also shows huge increases in large, organised trade, transport and communication, hotels and restaurants and social security. The change in Kerala has come largely from trade establishments.

While the increase in large primary sector enterprises can be seen as being in line with the traditional presence of Dalits in these occupations, the Dalit capital being deployed in hotels and restaurants, transport and communication, the service sector and social security needs to be

examined in field studies. The answers to these very interesting developments are not available in this data.

The role of Andhra Pradesh is much smaller in the total than for Dalit enterprises alone, especially in those hiring 100 and more workers, going from 5 percent in 1998 to nearly 28 percent in 2005. It is not at all clear from any literature to date why Andhra Pradesh shows such a trajectory in the location of very large non-farm enterprises. But this data shows that Dalits were very much a part of this phenomenon.

The analysis of Dalit enterprises in this paper has taken the point of view that it is interesting to see where concentrations of Dalit populations and enterprises are taking place, using states as geographical markers. It is, of course, equally interesting to examine how Dalit entrepreneurship has changed over this period within each state. That analysis is not given in this paper, and has been

studied in some detail in other studies referred to in this paper from time to time [Thorat et al, 2007; Harriss-White, 2014; Iyer et al, 2013].

4. GEOGRAPHY OF ALL DALIT ENTERPRISES

We now turn to the patterns of concentration of all types of Dalit enterprises of all sizes, a vast majority of which hire no workers, as shown in Table 2. Some of the test of a shift in the Dalits' own perception of what kind of non-farm enterprise they can undertake lies in looking at the patterns of these types in these two years. In Table 6 the number of non-manufacturing Dalit enterprises of different types are arranged by descending order of their numbers in 1998,

corresponding numbers in 2005 and their percentage increases. Trade and animal husbandry remain very large occupations, and see strong growth. In fact, the increase in animal husbandry is huge, and the increase in the share of Tamilnadu in Dalit enterprises can be attributed mostly to this item. Hotels and restaurants are being run by more Dalits as well. The broad category of transport, storage and communication shows very large increases. It was large in 1998 and has grown very significantly, by 2005. Within this category, transport has grown by 75 percent and the rise of courier services has contributed to the 325 percent rise in storage and communication.

Table 6. Number of Types of Dalit Owned Non-manufacturing Enterprises in 1998 and 2005

Enterprise Type	No. Enterprises		
	1998	2005	% Rise
(1)	(2)	(3)	(4)
Trade	900977	1395167	54.85
Animal Husbandry	211285	500135	136.71
Recreational services	168140	113837	-32.30
Transport	123792	216538	74.92
Other services	113837	16623	-85.40
Hotels, restaurants	62251	97207	56.15
Fishing	52821	72029	36.36
Construction	37188	44791	20.44
Health, Social Work	30289	33713	11.30
Forestry	24544	37398	52.37
Renting of machinery	13117	28782	119.43
Storage, communication	12035	51208	325.49
Education	10983	29770	171.06
Other businesses	10304	31627	206.94
Public Admin, Defence, Soc. Sec.	3998	6380	59.58
Mining	3600	10175	182.64
Financial intermediation	2690	3528	31.15
Real Estate	1393	3592	157.86
Sewage, refuse disposal	1076	1651	53.44
Electricity, water supply	752	1774	135.90
Insurance, pension	438	3333	660.96
Computer and related	389	2485	538.82

However, Dalits seem to be shifting away from recreational services (movies, drama, TV, radio, artists, library, and sport), as also from Other Services (laundry, household service, hair dressing, funeral related, etc.). These were large items in 1998 and Other Services has seen a drop of 85 percent by 2005. On the other hand, Other Businesses (legal, accounting, tax, business and management consultancies) shows a very large surge by 206 percent, making it one of the bigger items by 2005. Education is another category that saw a very significant increase in this period and has also contributed to the concentration of large Dalit enterprises in AP. In addition, if the increases in the service sector categories of financial intermediaries, real estate, insurance and pension, and computer services is taken as a whole, this shows a trend in Dalit enterprises that is indicative of the process of the 'main streaming' of Dalit economic choices. Even though a large majority of these are owner operated, they show that Dalits are thinking beyond their traditional occupations, in fact moving away from them as in Other Services, at an increasing pace.

While these shifts in Dalit enterprise are highly significant in themselves to point at underlying processes that are increasingly enabling Dalit enterprise to enter 'non-traditional' occupations in a more liberalised market, it is equally important to look at their geographical spread to understand which parts of the country are taking the lead in these changes.

Tables A1 (a) & (b) in the Appendix give the distribution of all Dalit non-manufacturing enterprises in 1998 and 2005 and the top 3 - 4 dominant states in each type by concentration.

In 1998, the states that dominated in the concentrations of Dalit non-manufacturing enterprises by frequency (of occurrence among the first 3-4 by concentration) were Maharashtra (14), WB (13), AP (11), Tamilnadu (8) and UP (6). In 2005 this hierarchy shifted somewhat to

give Maharashtra (16), Tamilnadu (13), WB (12) and AP (10). It should be remembered that though there was an increase in the concentration of large Dalit non-manufacture enterprises in AP, they formed a very small percentage of the total Dalit enterprises, and therefore do not dominate in these tables. Odisha holds onto the dominance of Dalits in forestry and plays a large role in fishing. The rise of Tamilnadu can be seen across the board, but is most significant in animal husbandry, of which it had a full 33 percent of total enterprises. It is worth noting here as pointed out by Rath [2015], that Tamilnadu is the one state that has a 75 percent share of all cross bred cows. It appears that Dalits in this state are a part of the changes taking place in animal husbandry. WB continued its lead in transport. It had 45 percent of these enterprises in 1998 and 51 percent in 2005. In 1998, 90 percent of transport enterprises in WB were manual rickshaw pullers of passenger and freight. By 2005, these make up 92.5 percent.

In the locations of the emerging Dalit interest in the service sector and other businesses, the leading states are Maharashtra, WB and Tamilnadu. They emerge as the states that Dalits are finding most conducive to the diversification of their non-farm economy.

It is perhaps not so remarkable that UP performs so poorly in this entire non-manufacture sector, given its overall poor status in the non-farm economy as a whole. It does not appear among the top 3 states in 2005 for any type of enterprise except trade, despite having the largest concentration of Dalit population. It also does not appear to have a tradition of animal husbandry. Even in trade, which might be proportional to population to some extent, UP had only 13.63 percent of such enterprises. MP is also one of the missing states with a significant Dalit concentration.

Manufacturing enterprises show a somewhat different pattern and are given in Table 7. Small owner operated manufacture (which dominates among Dalit manufacture) tends to have family as well as location history. Unlike services and

other non-manufacturing enterprises, it is difficult to start, needs skill, financial resources, and can also be hereditary (even among non-Dalits). So the pattern seen in Table 7 needs to be interpreted with these additional aspects in mind.

Table 7. Number of Types of Dalit Owned Manufacturing Enterprises in 1998 and 2005

Manufacturing Enterprises	No. of Enterprises		
	1998	2005	% Rise
(1)	(2)	(3)	(4)
Wood, cork, straw products	148875	146817	-1.38
Food and beverages	98060	138186	40.92
Tobacco products	95981	144104	50.14
Wearing apparel	89499	128755	43.86
Textiles	76743	80450	4.83
Tanning and dressing of leather	48430	45475	-6.10
Non-metal minerals (glass, ceramic, clay)	33880	35558	4.95
Fabricated metals	23235	26607	14.51
Furniture and others	13086	54044	312.99
Machinery and equipment	6797	9699	42.70
Chemicals and chemical products	5847	14257	143.83
Publishing and printing	3407	8612	152.77
Rubber and plastic	3182	4230	32.94
Motor vehicles, trailers	2235	994	-55.53
Basic metals	2003	4086	103.99
Paper and paper products	1830	3355	83.33
Electrical machinery	1387	5176	273.18
Other transport equipment	841	1938	130.44
Medical, precision, optical, clocks and watches	462	743	60.82
Radio, TV, communication equipment	253	2888	1041.50
Coke, refined petroleum	219	458	109.13
Office, accounting, computing equipment	37	75	102.70

Food and beverages (largely agricultural produce processing like grain and flour mills etc.), tobacco products, and wearing apparel see healthy increases in this period. There is a small decline in wood, cork and straw products, but a large increase in furniture and related products. Fabricated metals production is seen to be just holding its own. Chemical and chemical products see a healthy increase, along with publishing and printing. Electrical machinery and also radio/TV

equipment also seem to be attracting Dalit entrepreneurs. Textiles have stagnated and motor vehicles and trailers seem to have lost ground. Tanning and dressing of leather has seen a decline and it is possible that this is an old trend that continues into this period. It is important to note that among wearing apparel, the largest increase is seen among tailors, and is a phenomenon across all communities, not just Dalits.

In manufacture also, the trend of Dalits moving into non-traditional areas is seen to be taking place in areas like furniture, publishing and printing, rubber and plastic, paper products, and machinery and equipment, along with radio/TV. But these numbers by themselves are difficult to interpret without their geographical contexts. Tables A2 (a) & (b) in Appendix give the dominant states in different types of manufacture for 1998 and 2005.

By frequency of appearance, the top 4 states in manufacturing in 1998 by frequency of appearing among the top 4 concentrations were WB (20), UP (11), MH (10) and PJ (7). By 2005 this list had changed to WB (17), MH (12), UP (12), and TN (8). Odisha had 4 positions in 1998, and improved significantly to 8 in 2005. MP had 5 positions in 1998 and 6 in 2005. Punjab reduced to 5 positions in the top 4 states for the entire manufacturing sector in 2005, while AP appeared only once in 1998 and not at all in 2005. Delhi also lost ground significantly by 2005 to just 1, from 6 in 1998.

Some regional preferences of manufacturing activities become apparent by looking at this geographical spread. WB, MP and Odisha have been leading in the wood, cork and straw products, and continue to do so. WB has also successfully diversified into furniture. Food and beverages in manufacture is similar to trade in non-manufacture categories in being usually proportional to population, and shows similar trends, with WB and UP the main concentrations, being also the most populous. In tobacco products MP and WB have the traditional lead, with Maharashtra declining by 2005, and Tamilnadu taking a larger share. Like trade, wearing apparel seems to spread itself across all states, with the larger Dalit population states of WB and UP dominating.

In textiles, the traditional base in WB remains strong, but UP is seen to be falling behind, with Odisha coming forward. Rajasthan has been the

largest concentration of tanning and dressing of leather and remains so, along with MP. Non-metallic minerals (brick, glass, etc.) seems to see large uptake among Dalits in MP and Odisha. Interestingly, in 2005 brick kilns formed the largest non-farm industry in Bihar (for all owner types), and yet the state cannot be found among the top 4 concentrations even in this category. Punjab's Dalit manufacturing seems to have declined along with the broader industrial base in the state. The sharp decline of motor vehicles and trailers by 2005, of which Punjab had a large share in 1998, is perhaps one instance of this.

The manufacture of chemical and chemical products is another case in point for looking carefully at regional data to understand the nuances of patterns. Tamilnadu had a 44 percent share in this category in 1998, and by 2005 it has risen to a staggering 73 percent. A little more detail reveals that most of this is confined to the district of Sivakasi famous for its fireworks factories. The degree of identification of one community with one product in one location is revealed in this type of analysis.

The location of non-traditional manufacturing choices by Dalits is overwhelmingly dominated by WB, with Tamilnadu, UP, MP and Karnataka leading for specific enterprises. Maharashtra appears to contribute far more in non-manufacturing Dalit enterprises than in manufacture, where it seems to be spread very thin across many categories.

In all Dalit owned non-farm enterprises taken together, the greatest diversification and concentrations appear to be in WB, Maharashtra, and Tamilnadu, which also lead in Dalit movement into new types of ventures. In Harriss-White [2014], the regions of these states are identified as having well developed Dalit non-farm economies. While the south is marked for strong negative discrimination, the central and eastern regions are shown to practice weak to positive

discrimination. The results of the present study of concentration of enterprises appear to confirm some of these findings. But they do not offer a clear explanation as to their underlying reasons.

These results also show that while trends within states are important, to really understand the nature of change within the Dalit non-farm economy, this method of looking at concentrations gives very different insights, identifying regional trends in a new way. This paper makes no claim to being able to explain why some of these shifts have taken place in these particular locations, but many hypotheses can be formulated to study them further, promising rich results.

5. CONCLUSIONS

This study set out to look at the geography of concentrations of Dalit non-farm enterprise with one of the richest sources of such information available to date, the Economic Census. Instead of simply tracking changes within each state, this approach was taken to understand which regions actually performed best in comparison with each other. Given the fact that tracing the rise of Dalit enterprise is not simply a matter of counting, but also of interpreting what it reflects about their changed position in Indian society, makes this a very revealing narrative. The large and persistent concentrations and diversification of a broad category of Dalit non-farm enterprises in West Bengal, Maharashtra and Tamilnadu present a regional clarity to the measurement of Dalit participation in the economy.

The study of Dalits in various non-farm occupations by Jodhka [2010] reveals that entering the market as an entrepreneur still remains a balancing act for Dalits. Instead of 'that shop', it's 'the Dalit shop', instead of a workshop, it's 'the Dalit workshop'. Prejudices remain well entrenched, but the present analysis shows that all regions and all Dalits are not equal in this matter. West Bengal's exemplary Dalit participation in all categories of non-farm enterprise, along with

the performance of Maharashtra, Tamilnadu, Andhra Pradesh and even Odisha shows that social processes, historical and contemporary, have made it easier in some regions for Dalits to take their place in the market.

It is equally an indictment of Uttar Pradesh and the other northern states of Punjab, Himachal Pradesh and Haryana, along with the abysmal state of Bihar. Just to put this into perspective, in 2001 UP had a Dalit population about 70 million, while West Bengal had about 37 million Dalits. Given the huge differences that have emerged in this study between these states, the case of UP and its Dalits becomes even more alarming, notwithstanding the overall poor performance of UP in the non-farm sector. As stated earlier, the conclusions of the study of health indicators in UP and TN against the background of their history of Dalit political mobilisation by Mehrotra [2006] are further illuminated here. Another study of Dalits in UP, carried out in 2008 [Kapur et al, 2010], shows that Dalits are attempting to move away from consumption patterns that are considered markers of a community's caste identity, including specific food habits and grooming patterns. Adopting 'elite' patterns of consumption and behaviour, Dalits in the two blocks of UP are attempting a recasting of how they are seen, not just by others, but by their own. Market forces have been instrumental to a certain degree, making access the crucial pivot on which many of these changes turn. The data in this paper stops at 2005. It will be interesting to see if the changes in UP seen in more recent studies are actually reflected over the past decade in how much the position of Dalits has really changed in this big state. The role of political mobilisation will have to be judged afresh then.

The case of WB is a very different story from either UP or Tamilnadu, on the basis of the analysis presented above. While emphatically not caste based, the long and sustained political mobilisation of the Left in the state obviously has

paid dividends for its Dalits. Maharashtra presents yet another case of a long history of social reform that in some sense culminated in the rise of Ambedkar and Dalit awakening. The failure of politics to deliver real change through strong governance decisions might very well be at the root of the current state of affairs in the northern states. However, there appear to be no easy answers to what ingredients lead to the maximal participation of Dalits in the non-farm economy. Iyer et al [2013] regressed the share of Dalit/Adivasi ownership of enterprises in states on the levels of literacy, urbanisation, fraction of population engaged in farming, and the fraction of landless among farmers and found them to have little power to explain ownership distributions. As they mention, it is possible that these need to be measured differently. But it also means that any policy formulation to boost such participation has not yet found a clear framework. Perhaps the insights from the present paper, that gives the clear cases of successes and failure, both geographically and in types of enterprises, will lead to a better understanding.

We must also retain the possibility that there may have been significant differences between UP and states like WB, Tamilnadu and Maharashtra in the depth of social prejudice, the willingness of upper castes to move away from them, and something illusive yet evolving called 'culture' that might provide a long term counter weight as well, creating space and enabling the political will for real change over the decades.

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Appendix

Table A1 (a). Dalit Enterprises by Type (Except Manufacture), with 3-4 States of Maximum Concentration for each Type (their Percentage Share in the Total for that Type), for 1998

Enterprise Type	1998-No. Enterprises	State 1	State 2	State 3	State 4
(1)	(2)	(3)	(4)	(5)	(6)
Trade	900977	WB(25.08)	UP(10.01)		
Animal Husbandry	211285	AP(18.14)	MH(12.84)	TN(10.82)	
Recreational services	168140	KE(12.92)	TN(11.83)	WB(11.09)	AP(9.37)
Transport	123792	WB(45.05)	UP(8.37)	AP(7.75)	
Other services	113837	AP(16.04)	MH(11.02)	UP(9.04)	
Hotels, restaurants	62251	WB(30.55)	MH(12.02)	TN(11.25)	
Fishing	52821	WB(64.04)	OR(14.39)		
Construction	37188	WB(18.52)	MH(15.00)	AP(8.23)	
Health, Social Work	30289	TN(8.63)	MH-WB(8.2)		
Forestry	24544	OR(54.54)			
Renting of machinery	13117	MH(21.50)	WB(12.05)	AP(9.63)	
Storage, communication	12035	WB(16.56)	MH(12.88)	AP(11.30)	
Education	10983	MH(9.62)	UP(9.04)	AP(9.05)	
Other businesses	10304	TN(21.57)	WB(13.35)	MH(13.30)	
Public Admin, Defence, Soc. Sec.	3998	MH(12.22)	TN(10.00)	AP(7.71)	
Mining	3600	KA(20.61)	AP(18.72)	RJ(16.42)	UP(10.22)
Financial intermediation	2690	TN(33.68)	MH(13.72)	KA(10.15)	
Real Estate	1393	DLH(22.33)	WB(17.30)	MH(13.42)	
Sewage, refuse disposal	1076	RJ(52.32)	UP(9.76)		
Electricity, water supply	752	WB(32.31)	OR(7.85)		
Insurance, pension	438	MH(28.77)	WB(24.43)		
Computer and related	389	TN(29.82)	MH(17.22)	KA(12.85)	AP(9.25)

Table A1 (b). Dalit Enterprises by Type (Except Manufacture), with 3-4 States of Maximum Concentration for each Type (their Percentage Share in the Total for that Type), for 2005

Enterprise Type	2005-No. Enterprises	State 1	State 2	State 3	State 4
(1)	(2)	(3)	(4)	(5)	(6)
Trade	1395167	WB(22.70)	UP(13.63)		
Animal Husbandry	500135	TN(33.26)	AP(16.06)	KE(9.14)	MH(8.04)
Transport	216538	WB(50.87)	AP(9.05)		
Recreational services	113837	TN(13.38)	MH(12.36)	AP(11.75)	
Hotels, restaurants	97207	WB(22.48)	TN(14.12)	MH(8.86)	
Fishing	72029	WB(51.98)	OR(22.15)		
Storage, communication	51208	MH(12.62)	WB(11.95)	TN(10.74)	
Construction	44791	MH(13.71)	WB(13.02)	AP(8.15)	
Forestry	37398	OR(61.73)			
Health, Social Work	33713	MH(12.62)	UP(9.7)	AP(7.89)	
Other businesses	31627	MH(13.47)	WB(12.90)	KA(8.7)	
Education	29770	MH(10.84)	WB(10.78)	AP(9.20)	
Renting of machinery	28782	WB(18.80)	MH(15.11)	TN(11.00)	
Other services	16623	AP(13.33)	MH(11.83)	TN(9.66)	
Mining	10175	AP(22.79)	KA(15.76)	UP(13.70)	TN(10.42)
Public Admin, Defence, Soc. Sec.	6380	TN(14.61)	MH(12.98)	AP(10.92)	
Real Estate	3592	WB(13.81)	MH(12.92)	TN(12.39)	PJ(11.16)
Financial intermediation	3528	MH(22.62)	TN(21.32)	AP(12.30)	
Insurance, pension	3333	WB(25.66)	MH(22.62)		
Computer and related	2485	TN(20.08)	MH(18.43)		
Electricity, water supply	1774	TN(24.52)	WB(15.33)		
Sewage, refuse disposal	1651	TN(15.78)	AS(14.39)	MH(9.71)	

Table A2 (a). Dalit Manufacturing Enterprises by Type, with 3-4 States of Maximum Concentration for each Type (their Percentage Share in the Total for that Type), for 1998

Enterprise Type	1998-No. Enterprises	State 1	State 2	State 3	State 4
(1)	(2)	(3)	(4)	(5)	(6)
Wood, cork, straw products	148875	WB(23.67)	OR(22.14)	MP(12.88)	
Food and beverages	98060	WB(34.05)	UP(13.05)	MH(7.36)	
Tobacco products	95981	MP(42.99)	WB(13.78)	MH(13.49)	
Wearing apparel	89499	UP(13.13)	MH(12.63)	WB(10.08)	
Textiles	76743	WB(22.5)	UP(21.2)	OR(8.48)	
Tanning and dressing of leather	48430	RJ(28.28)	MP(14.58)	UP(9.82)	
Non-metal minerals (glass, ceramic, clay)	33880	MP(25.22)	OR(20.86)	WB(12.84)	
Fabricated metals	23235	WB(24.28)	MH(13.91)	HP(9.53)	UP(9.33)
Furniture and others	13086	WB(35.07)	TN(10.53)	MH(8.42)	
Machinery and equipment	6797	PJ(17.96)	UTKH(17.68)	UP(9.33)	
Chemicals and chemical products	5847	TN(43.77)	AP(12.45)	WB(11.68)	
Publishing and printing	3407	WB(16.35)	MH(15.79)	TN(13.53)	DLH(14.68)
Rubber and plastic	3182	DLH(22.56)	WB(13.01)	MH(10.94)	PJ(9.15)
Motor vehicles, trailers	2235	PJ(17.14)	MH(14.36)	UP(12.30)	WB(11.54)
Basic metals	2003	UP(31.35)	WB(11.58)	KA(10.88)	
Paper and paper products	1830	WB(38.91)	DLH(17.05)	JKHD(8.96)	
Electrical machinery	1387	WB(21.77)	JKHD(13.91)	UP(10.89)	PJ(10.38)
Other transport equipment	841	PJ(21.88)	WB(18.43)	DLH(11.77)	
Medical, precision, optical, clocks and watches	462	WB(19.48)	PJ(18.4)	DLH(15.15)	UP(13.42)
Radio, TV, communication equipment	253	MH(19.37)	DLH(15.81)	WB(17.39)	
Coke, refined petroleum	219	WB(53.43)	TN(12.79)		
Office, accounting, computing equipment	37	MH(29.73)	PJ(18.92)	KA(13.51)	
Total	656289	WB(19.5)	MP(13.69)	OR(9.98)	UP(9.58)

Table A2 (b). Dalit Manufacturing Enterprises by Type, with 3-4 States of Maximum Concentration for each Type (their Percentage Share in the Total for that Type), for 2005

Enterprise Type	2005-No. Enterprises	State 1	State 2	State 3	State 4
(1)	(2)	(3)	(4)	(5)	(6)
Wood, cork, straw products	146817	WB(22.94)	OR(22.16)	MP(13.55)	
Tobacco products	144104	MP(33.74)	WB(24.54)	TN(16.01)	KA(10.95)
Food and beverages	138186	WB(26.18)	UP(17.42)	MH(7.76)	
Wearing apparel	128755	MH(13.79)	UP(11.25)	WB(10.45)	RJ-PJ(8.7)
Textiles	80450	WB(35.34)	UP(12.68)	OR(12.66)	
Furniture and others	54044	WB(28.02)	MH(9.61)		
Tanning and dressing of leather	45475	RJ(29.74)	MH(11.71)	MP(10.49)	
Non-metal minerals (glass, ceramic, clay)	35558	MP(30.77)	OR(19.46)	UP(8.54)	
Fabricated metals	26607	WB(18.28)	MH(12.66)	UTKH(10.33)	OR(9.01)
Chemicals and chemical products	14257	TN(72.85)			
Machinery and equipment	9699	WB(14.17)	PJ(13.24)	OR(11.94)	TN-UP(7.5)
Publishing and printing	8612	WB(14.76)	TN(14.78)	MH(13.66)	UP(10.75)
Electrical machinery	5176	WB(20.94)	UP(15.69)	PJ(9.52)	
Rubber and plastic	4230	WB(18.16)	RJ(10.24)	MH(11.91)	TN(9.72)
Basic metals	4086	TN(15.15)	MH(13.97)	WB(13.39)	UP(13.31)
Paper and paper products	3355	WB(29.72)	TN(14.75)	OR(11.68)	DLH(9.36)
Radio, TV, communication equipment	2888	UP(16.62)	WB(14.68)	MH(9.73)	
Other transport equipment	1938	MP(24.25)	PJ(14.09)	UP(11.56)	
Motor vehicles, trailers	994	OR(43.16)	WB(8.15)		
Medical, precision, optical, clocks and watches	743	WB(16.82)	MH(12.79)	TN(10.92)	MH(10.09)
Coke, refined petroleum	458	WB(24.67)	RJ(13.76)	UP(12.23)	
Office, accounting, computing equipment	75	KA(25.33)	MH(13.33)	PJ(9.33)	
Total	858878	WB(21.00)	MP(12.01)	OR(9.44)	TN-UP(8.5)

FISCAL PERFORMANCE IN THE WAKE OF FISCAL RESPONSIBILITY LEGISLATION: A STUDY OF MAHARASHTRA'S PUBLIC FINANCES*

Ajit Karnik and Mala Lalvani

Fiscal responsibility legislation (FRL) has been seen as an important measure to control the fiscal profligacy of governments. While initially FRLs were enacted at the level of federal or central governments, it was soon realised, that for sustaining the health of government finances, such legislations were required for subnational governments as well. India has been no exception to this. This paper focuses attention on the impact of FRL in the state of Maharashtra which was enacted in 2004-05 in the wake of worsening public finances. While the finances of the government of Maharashtra have improved after 2004-05, we explore the factors that have led to this improvement. We do this by carrying out a time consistency check by performing rolling computations comparing the fiscal performance in the pre- and post-FRL time periods. An econometric exercise, using GMM estimation, is also employed for this purpose. We find that much of the improvement in the public finances of the state has been driven by transfers from the central government rather than through the effort of the state itself.

Key words: Fiscal responsibility legislation, federal systems, inter-governmental transfers JEL Code: E62, H75, H77

I. INTRODUCTION

Finances of governments at all levels in India have remained fragile for almost a quarter century. While there have been episodes when the health of government finances has shown improvement, such improvement has usually been short-lived. Till the 1980s, revenue deficits of state governments were virtually non-existent [Singh, 2006]. It has been reported that the ratio of revenue deficits to Gross State Domestic Product (GSDP) averaged 0.01% during 1980-81 to 1990-91, 1.20% in the next decade and 2.35% from 2000-01 to 2003-04 [Karnik, 2006, Pp. 403-427]. Clearly, there was a worsening of the situation through the 1990s and into the 21st century. It may be noted that the states were not alone in their fiscal profligacy. On the eve of passing of the FRBM Act of India in 2003 and framing of fiscal rules by the central government in 2004, the gross fiscal deficit (GFD) of the federal and state governments government was in

excess of 9% of GDP, the revenue account deficit (RDEF) of both levels of government was close to 6.5% and the primary deficit (PD) was in excess of 3%. It was in this context of deteriorating fiscal situation that India adopted a rule-based fiscal framework with the enactment of the Fiscal Responsibility and Budget Management (FRBM) Act, 2003 and the framing of FRBM Rules, 2004 for the Central Government [Pattanaik et al, 2006]. Under the FRBM Act, 2003, the Central Government committed itself to eliminate revenue deficits and reduce fiscal deficit to 3 per cent of GDP by end-March 2009.

However, this major institutional change only at the level of the central government was not enough. Similar change was needed at the level of the states, as well. Given the proclivity of state-level politicians to use government finances as a means of bestowing favours and patronage, getting state governments to adopt fiscal rules was

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always expected to be difficult. It needed the intervention of the Eleventh Finance Commission to bring the states on board but not before substantial political bargaining had taken place (Singh 2006). The Twelfth Finance Commission added to the pressure on the states by putting in place an incentive-linked scheme of debt relief for the states which would pass the Fiscal Responsibility Legislations (FRLs). This incentive worked very well as many states were deeply debt-ridden and saw the debt relief being offered to them as a way out of their debt trap. Most states immediately responded to this incentive and, by 2010, all the states had their FRLs in place. Karnataka was the first to pass the FRL in 2002-03 and West Bengal the last in 2010-11.

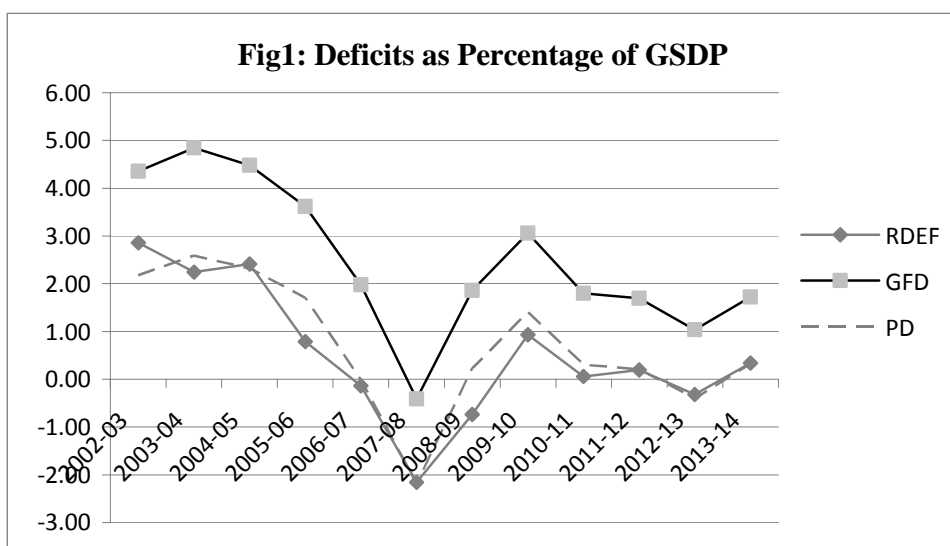
Like many other states, the fiscal situation of the state of Maharashtra too showed considerable deterioration in the 1990s and the first half of 2000s. The average revenue deficit to GSDP ratio over 2000-01 to 2003-04 was as high as 4.5%. The debt waiver offered by the Twelfth Finance

Commission as an incentive for the states which passed the FRL came as a blessing for the Government of Maharashtra (GoM) which was reeling under a heavy debt burden. Table 1 shows the evolution of the state's total debt.

Table 1. Total Debt of Government of Maharashtra

Year	Total Debt Stock (Rs. Crore)	Debt/GSDP (%)
(1)	(2)	(3)
2002-03	82549	26.39
2003-04	97674	26.27
2004-05	109167	25.55
2005-06	124365	22.88
2006-07	133722	20.79
2007-08	142382	21.32
2008-09	160773	21.20
2009-10	181447	19.36
2010-11	203097	19.23
2011-12	225976	18.66
2012-13	246692	17.84
2013-14	269355	17.94

Source: Budget Documents, GoM



It will be noted from Table 1 that in the years leading to the enactment of the FRL, the debt/GSDP ratio was in excess of 25%. As a consequence, interest payments in 2004-05 were as high as 2.16% of GSDP and 17.5% of total government expenditures.

Like many other states, the government of Maharashtra too availed of the opportunity being offered by the Finance Commission to bring its debt situation under control by passing the FRL in April 2005. Even though there was an improvement in the few years immediately after the enactment of the FRLs the fiscal situation in Maharashtra has never been persistently healthy. Figure 1 shows the path of ratios to GSDP of Gross Fiscal Deficit (GFD), Revenue Account Deficit (RDEF) and Primary Deficit (PD) prior to and since the enactment of the FRL in Maharashtra.

The years following the enactment of the FRL showed significant improvements in the deficits of the state, with the best year being 2007-08. However, since then there has been steady deterioration. Though the situation in the post-FRL period is not as bad as it was before its enactment, the fact that the fiscal health of the state has not been consistently healthy is a matter of concern. This has been the case despite the solemn promises of state government to rectify its fiscal positions. The latest in the long line of promises is the declaration of the Finance Minister of Maharashtra who stated in his budget speech (Government of Maharashtra, 2015): "The revenue imbalance poses a major challenge on (sic) the financial management of the state.. In order to bring revenue balance back on track, I will definitely take some strong measures".

The primary objective of this paper is to analyse in-depth the process of fiscal correction in Maharashtra in the post-FRL period. It may be noted that our focus is primarily macro. Our

analysis and judgement regarding fiscal correction will be mainly in terms of comprehensive measures such as gross fiscal deficit and revenue deficit. Even though we carry out a brief analysis of some components of government expenditures, we restrict ourselves to the impact of FRL on such components. Specifically, we do not delve into the relationship between changes in such components and development of the state. Given that a decade has passed since the FRL was enacted in the state in April 2005, it is an opportune time to evaluate the experience of the state and to draw useful lessons. Two issues are important in this context:

- (a) What has driven fiscal correction in the state? Has it been due to changes on the expenditure side of the budget or on the revenue side?
- (b) The revenue side of the budget is affected by two factors: the state government making efforts to raise revenues and federal transfers adding to the revenues of the state. It is important to know which of the two factors has made a more significant contribution towards improvement in the fiscal performance of the state.

While both aspects of the fiscal performance, namely, (a) and (b) that have been listed above are important, our primary focus will be on the latter, and in particular, we would like to ascertain how much of the fiscal correction which has occurred is on account of the 'own effort' made by the state. While it may be true that own effort of states could be thought of as effort to manage expenditure, the view taken in this paper is that a true measure of success of fiscal rules and own effort of states lies in the ability and willingness of a state to contribute to its fiscal consolidation by enhancing own revenues and cutting back wasteful current expenditures. Nonetheless we do examine the performance of expenditures and efforts made to manage these in a later section. Since federal transfers account for a significant part of the current account revenues of the state

government, this paper seeks to carry out an accounting exercise to determine the relative contributions of federal transfers and of the state's own efforts to the improvement in the fiscal position.

Since our objective is to assess the 'own effort' of the state government of Maharashtra to consolidate its fiscal position in the post-FRL period, we carry out a careful 'before-and-after' comparison with the enactment of the FRL in 2005-06 being the dividing line between the 'before period' and the 'after period'. The benchmark that we use for the purpose of comparison is the average fiscal performance of the state in the five years prior to the passing of the FRL. The state's fiscal performance in the decade after the enactment of the FRL is compared to this benchmark.

This paper consists of 7 sections including the present one. Section 2 presents a review of the of fiscal rules and intergovernmental transfers; section 3 gives details of the fiscal situation in Maharashtra pre and post-FRL; section 4 elaborates on the decomposition exercise that we have carried out to evaluate the post-FRL fiscal performance; section 5 analyses expenditures on public and merit goods; section 6 elaborates on the econometric exercise which assesses the impact of FRL on deficits. Finally, section 7 concludes.

2. FISCAL RULES AND INTERGOVERNMENTAL TRANSFERS IN FEDERAL SYSTEMS: A REVIEW

Rules versus discretion has been a subject of an ongoing debate as far as macroeconomic policy is concerned [see Galati and Moessner, 2013, Pp. 846-878, for a survey]. The fiscal policy aspect of this debate has kindled the interest of researchers to examine whether fiscal policy should be constrained by rules. Fatas and Mihov [2003, Pp. 1419-1447; 2006, Pp. 101-117] found early evidence in support of fiscal rules as against

discretionary fiscal policy. Doubts were, however, raised regarding the effectiveness of fiscal rules in the absence of strong political commitment and/or complementary domestic budgetary institutions ensuring appropriate monitoring and enforcement, [e.g., Wyplosz, 2005, Pp. 64-78; Hallerberg et. al., 2006]. This led to the focus shifting from whether rules should be introduced at all to the designing of appropriate rules for fiscal policy [Ayuso et. al 2007, Portes and Lewis, 2014]. The analysis of Ayuso et al [2007] suggests that the characteristics of fiscal rules matter for their influence on budgetary outcomes. The presence of strong enforcement mechanisms seems important to maximise the effect of fiscal rules.

Fiscal rules in federal systems need to address special issues which are intrinsic to such systems. A critical issue in a federal system is that sub-national governments will seek to overfish from the common pool of revenues transferred by a higher-level government to a lower-level government. It is Rodden's [2002, Pp. 670-687] hypothesis that vertical fiscal imbalance, which inevitably leads to inter-governmental transfers, lies at the heart of irresponsible behaviour on the part of subnational grants. This suggests that state governments tend to be lax about fiscal discipline, secure in the belief that they will be helped out by the federal government in the event of a crisis. Fiscal rules in federal systems seek to make governments - both national and subnational - commit to responsible fiscal behaviour. Even though irresponsible fiscal behaviour might offer significant short-term political advantages to political actors at various levels of government, it would be collectively damaging to the finances of governments. In this context, see the vast literature on political budget cycles [Eslava, 2010, Pp. 645-673; de Haan and Klomp, 2013, Pp. 387-410]. Fiscal responsibility laws are designed to address the myopia of policymakers which limits their vision to the next elections, the

selfish behaviour of free riders among government units, and the ubiquitous principal-agent problem between national and subnational governments. Oates [2005, Pp. 349-373] points out the nature of principal-agent problem in the context of decentralisation between a federal government and regional or state governments. Central governments may wish to design transfers to state government such that certain fiscal objectives are met (for example, spending on public goods or controlling fiscal deficits). However, information asymmetry may necessitate states to want to deviate from the prescribed objectives. In the Indian context, such behaviour may be common with respect to utilisation of untied grants and off-budget operations. A common trait of successful fiscal responsibility laws for subnational governments is the commitment of the central government to its own fiscal prudence, which is usually reinforced by the application of the law at the national as well as the subnational level [Liu and Webb, 2011].

In the context of federal systems, Foremny [2014, Pp. 86-110] examines how fiscal rules and tax autonomy influence deficits of subnational sectors across European countries. He concludes that a properly designed framework of fiscal rules is effective in unitary countries, but not necessarily in federations, where the larger legal autonomy of subnational jurisdictions limits the effectiveness of these rules. The findings of Fromney [2014] have an important bearing on the issues we raise in this paper. For federal countries, the author shows that higher autonomy over tax instruments is the key to preventing large deficits at the subnational level. In this context, attention has been drawn to a glaring asymmetry in revenue and expenditure decentralisation at the local government level - the lowest stratum in a federal system - in the state of Maharashtra by Karnik and Lalvani [2005, Pp. 273-295].

At this juncture, we may hasten to add that this asymmetry just referred to is not confined to India or states of India alone. It is, in fact, common to observe such a mismatch between expenditure and tax decentralisation across countries [Saachi and Salotti, 2014]. Not only is the mis-match common, there is no clear evidence of any tendency to reduce this asymmetry nor is there any mechanism in place to ensure that such asymmetry be reduced. This leads Saachi and Salotti to conclude that the mismatch between expenditure and tax decentralisation is intrinsic to fiscal decentralisation.

Despite the issue of asymmetry in revenue and expenditure decentralisation, which is a definite concern in the Indian federation, Buiter and Patel [2010] believe that fiscal consolidation by the states of India after the passing of FRLs has been commendable. Between 2003/04 and 2007/08, the fiscal deficit of state governments declined markedly from 4.4 percent to 1.5 percent of GDP. In 2008/09, despite a slowdown, most of the states were within the target. Buiter and Patel conclude that states' management of fiscal affairs over both, a period of high growth and the subsequent slowdown, exhibits "successful conduct of 'discretionary countercyclical' policy within the rules".

Apart from Buiter and Patel, studies which have examined the impact of FRLs in the Indian context fall into two broad categories. One group includes those studies which have examined trends and commented on the quality of fiscal consolidation and the other group examines the driving force behind the fiscal consolidation process, i.e., whether fiscal consolidation has been driven by expenditures or revenues, in particular, through central government transfers.

The first group includes Isaac and Ramakumar [2006, Pp. 4965-4976], Raut [2011, Pp. 57-80], Dutta [2012, Pp. 106-129], and Chakraborty and Dash [2013]. In one of the earlier studies, Isaac

and Ramakumar use the case of Kerala to bring out sharply the adverse implications of a mechanically designed fiscal adjustment programme in the context of long-term commitments to social spending and exogenous changes like pay revisions. According to the authors, going by the provisions of the FRBM Act, Kerala would have to sharply cut plan expenditures, reduce social spending and curtail devolution to local self-governments, which may be considered as by and large developmental in nature. Completely contrary to this, Raut finds that the most interesting aspect of the expenditure patterns of the state governments is that expenditure for developmental purposes has not been compressed during the fiscal correction process. The total developmental expenditure (revenue and capital) as a ratio to GDP has, in fact, moved up from 9.1 per cent in 2004-05 to 10.5 per cent in 2007-08. Dutta is of the opinion that restructuring policy has had two effects: firstly, it has been successful in generating surplus in state governments' revenue account and, secondly, the resultant surplus in revenue account has led to a substantial increase in capital outlay and a reduction in fiscal deficits. Finally, Chakraborty and Dash reveal that the state level fiscal policy and fiscal rules have been successful in reducing fiscal imbalance. However, according to them it is clear that fiscal targets under fiscal rules have been achieved through a cut in discretionary development spending which would have implications for the growth of the states.

The other group of studies, which have examined the impact of FRLs in Indian states, looks at the source of fiscal consolidation in the post-FRL period. In particular, these studies have drawn attention to the significant role played by intergovernmental transfers. Some of the studies which fall in this category are Simone and Topalova [2009], Rao and Sen [2011], Chakraborty and Dash [2013] and Rao and Srivastava [2014]. Simone and Topalova point out that fiscal correction at the state level has been, largely,

revenue-led with a major role played by higher central government transfers. The study by Rao and Sen draws attention to the significant role of central transfers in the fiscal correction process in the states. The authors point out that, of the 2.1 percentage points improvement in revenues in their sample period, the contribution of own tax revenues was 0.7 percentage points while tax devolution and grants from the centre contributed 1.4 percentage points to the change. According to them, improvement in the latter was mainly due to the buoyancy of income tax and service tax revenues. Chakraborty and Dash show that the cut in spending by states has been partially offset by higher central transfers. Had this not been the case, they point out, the state level contraction in development spending would have been even higher in order to comply with the fiscal rule. Finally, Rao and Srivastava examine the dependence of states on central fiscal transfers. They find that this dependence on central transfers has increased over time.

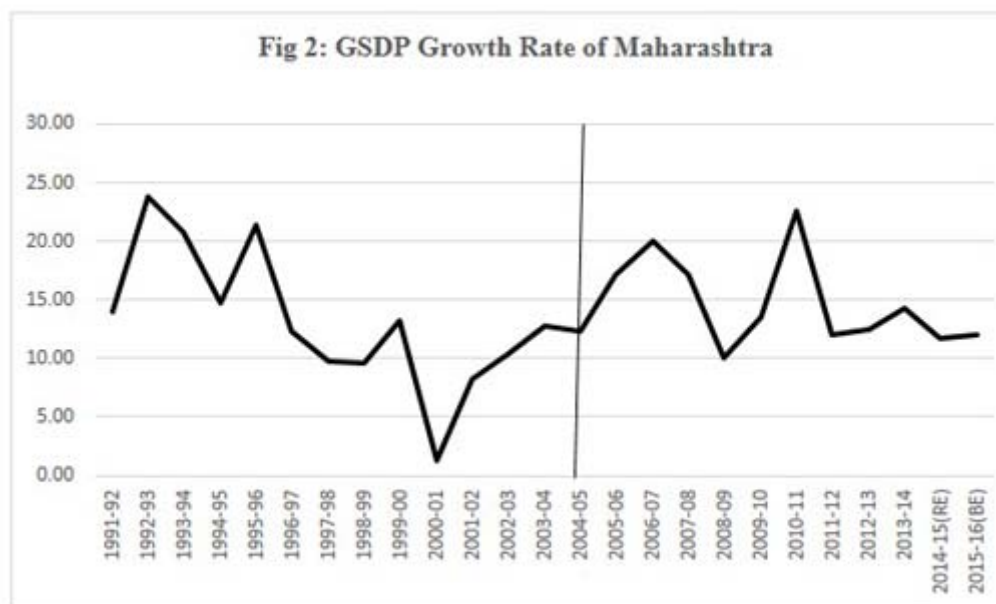
While the significance of transfers in all federations, including India, is incontrovertible, our study, which attempts to assess the impact of fiscal rules on fiscal discipline also allows us to comment on the incentive/dis-incentive of the intergovernmental transfer system on the effort that states exert to garner revenues from the revenue handles available to them. The present study is an attempt to assess the effectiveness of fiscal rules in the state of Maharashtra in India through which we try to judge the performance of the state based on the extent of effort that they have exerted to tap their own revenues and the extent to which their fiscal consolidation process has been aided by intergovernmental transfers. While the existing literature does draw attention to the increasing dependence of states on central government transfers, our study goes much further in that it attempts to decompose the extent of fiscal adjustment accomplished into own effort and central government transfers. The exercise allows us to ascertain the role that intergovernmental transfers may have played in the fiscal

consolidation in Maharashtra. Our study goes well beyond most similar studies in that we add a dynamic element by examining how the deficit ratios have evolved as years have elapsed since the passing of the FRL. We do this by performing, what we call, rolling computations comparing the pre- and post-FRL time periods. Specifically, we set as benchmark the average of the deficit ratio for five years prior to the FRL and compare this to the average of the deficit ratio, say, 2 years after FRL, 4 years after FRL and so on.

3. FISCAL SITUATION IN MAHARASHTRA PRE- AND POST-FRL: AN OVERVIEW

The State of Maharashtra was once known as the economic powerhouse of India (Frontline, 2003). The World Bank has branded it as a State

with "*an impressive past but an uncertain future*" [World Bank, 2002]. The state of Maharashtra contributed around 14.4% to India's GDP in 2013-14 compared to 58% in 1999-2000. Growth rate of GSDP in the state of Maharashtra showed steady deceleration in the 1990s and in the first half of 2000s, i.e., before the FRL was passed in 2004-05. The annual average which was 19% (1991-92 to 1994-95) slipped to 11% (1995-96 to 1999-00) and further to 9% (2001-01 to 2004-05). Figure 2 below graphs the pattern of deterioration. The vertical line at 2004-05 indicates the enactment of the FRL in the state. The average growth rate of GSDP in the pre-FRL period was 13.2% and that post-FRL has been 15.1%.



The deficit situation in Maharashtra had also steadily worsened since the mid-1990s. Gross Fiscal Deficits as per cent of GSDP more than doubled from a mere 2.15% in 1990/91 to 4.48% in 2004/05. Over the same time period, revenue Deficits as per cent of GSDP escalated from

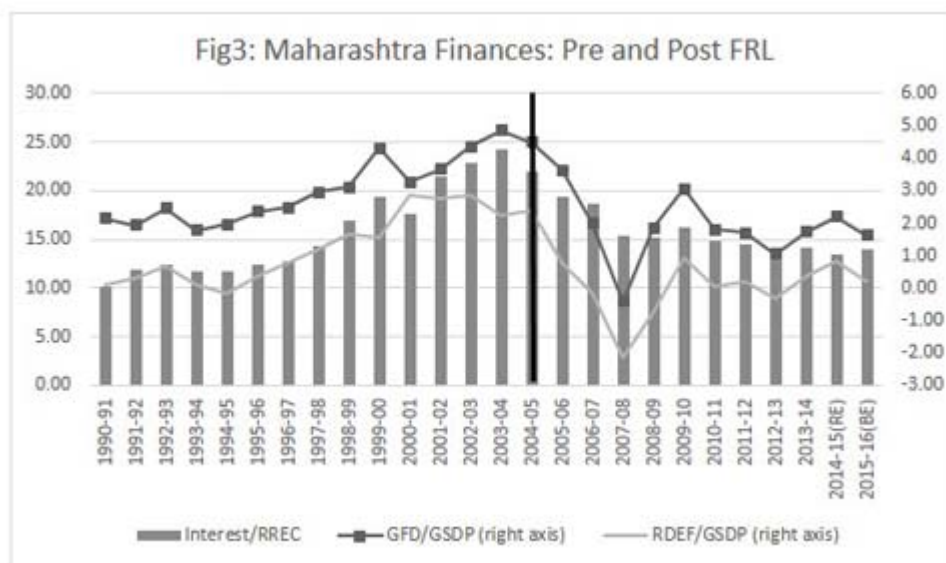
0.07% to 2.41% and interest payments as per cent of revenue receipts rose from 10.1% to 21.8%. Figure 3 depicts the deterioration of the state's fiscal situation pre-FRL and post-FRL. In the figure, the left axis measures interest payments as per cent of revenue receipts (Interest pay-

ments/RREC) while GFD and RDEF as per cent of GSDP are measured on the right axis.

Numerous reasons have been cited for the deterioration in Maharashtra's finances since

1995-96 (Dholakia et al, 2004)

- (i) The slowdown in revenues as a result of the slowing down of economic growth, particularly growth in manufacturing.



- (ii) High level of borrowings made outside the budget in the form of Special Purpose Vehicles and guarantees to finance infrastructure, the servicing of which was, however, through the budget. The GoM did not engage in any off-budget borrowings till 1995-96 (Planning Commission, 2007). However, in the years leading up to the enactment of the FRL, the off-budget debt stock as a percentage of total debt stock was 16.45 in 2002-03, 13.74 in 2003-04 and 11.33 in 2004-05. This share has dropped significantly since then and has declined to 0.50 in 2013-14.

- (iii) Impact on wage bill of the Pay Commission awards. Pethe and Lavani [2005, Pp. 429-464] point out that the share of salaries and pensions in revenue receipts of the state

has remained in excess of 65% between 1999-2000 and 2003-04. This represents a massive hike of almost 20 percentage points in the share compared to a few years earlier.

- (iv) Rise in interest rates on borrowings. An indication of this is available by considering interest payments as percentage of GSDP, yielding the so-called effective rate of interest. In the decade of the 1990s, the average rate was 12.35% which had increased to an average rate of 17.06% over 2000-01 to 2004-05.

The sharp deterioration in the state's finances encouraged the government of Maharashtra to accept the debt waiver offer of the 12th Finance Commission in exchange for passing the Fiscal Responsibility Legislation in 2005. Has the

passing of the FRL led to improvement on the fiscal consolidation front? If that is, indeed, the case then, what has been the 'own effort' that has been put in by the state government? These are the questions that concern us in this study.

As a first step, we take stock of the revenue and expenditure decentralisation that has occurred in the state of Maharashtra both before and after the passing of the FRL. We do this by comparing the state's own revenue as a percentage of GSDP with expenditures as a percentage of GSDP. Table 2 below shows that the average gap between own revenues as a percentage of GSDP and total expenditure as a percentage of GSDP is above 5 percentage points, both pre- and post-FRL.

From Table 2 it would appear that the state of Maharashtra is no exception to the norm of revenue decentralisation lagging behind expenditure decentralisation, which Saachi and Salotti [2014] drew attention to. With revenues falling

short of expenditures, intergovernmental grants come to play a major role in state finances. The significance and composition of intergovernmental transfers to the state of Maharashtra is seen in Table 3.

Table 2. Pre- and Post-FRL Revenue Assignment and Expenditure Responsibilities of Maharashtra

	Own Revenues/ GSDP	Total Expenditure/ GSDP
(1)	(2)	(3)
Pre-FRL		
1990-91	9.25	14.41
1995-96	7.73	12.05
2000-01	9.21	15.35
Post-FRL		
2005-06	8.11	14.11
2010-11	7.94	12.41
2013-14	7.95	12.45
2014-15(RE)	7.86	13.69
2015-16(BE)	8.01	12.86

Authors' computation based on Budget Documents, GoM

Table 3. Federal Transfers to the State of Maharashtra

	FC Transfers			Other Grants	Total Transfers	Total Transfers / GSDP
	Share in Central Taxes	Non-Plan Grants	Total FC Transfers			
(1)	(2)	(3)	(4)	(5)	(6)	(7)
9th FC (1990-91 to 94-95)	58.31	6.83	65.15	34.85	100.00	2.23
10th FC (1995-96 to 1999-00)	63.09	6.52	69.61	30.39	100.00	1.60
11th FC (2000-01 to 04-05)	60.44	10.59	71.03	28.97	100.00	1.43
12th FC (05-06 to 09-10)	46.16	17.83	63.99	36.01	100.00	2.28
13th FC (2010-11 to 14-15RE)	49.27	11.67	60.94	39.06	100.00	2.28
14th FC period begins 2015-16 (BE)	61.92	12.56	74.48	25.52	100.00	2.48

Source: authors' computations based on Budget Documents, GoM

Note: FC = Finance Commission

Total transfers to the state of Maharashtra constitute over 2% of its GSDP. Of this, the share of Finance Commission transfers (which are rule based) has been around 60% while the share of other grants (which are discretionary) is 40%. The 14th Finance Commission has tilted the balance in favor of Finance Commission transfers which, in 2015-16 (BE), is expected to constitute 75% of the total. With intergovernmental transfers constituting an important contributor to Maharashtra's finances, this paper attempts to assess the role that these transfers have played in the fiscal consolidation process after the passing of the FRL.

The FRLs, and the one in Maharashtra is no exception, have made it mandatory for the state government to lay out a Medium Term Fiscal Policy Statement and the Fiscal Policy Strategy Statement and Disclosures for the state as part of the annual budget document (the yellow book as it is better known in Maharashtra).

The Medium Term Fiscal Policy provides fiscal indicators and sets out rolling targets for key fiscal indicators as percentage of GSDP. The target indicators have been set out for the following:

- (i) Revenue deficit as per cent of GSDP
- (ii) Gross Fiscal Deficit as per cent of GSDP
- (iii) Tax Revenue as per cent of GSDP
- (iv) Total Debt Stock as per cent of GSDP
- (v) Total Contingent Liabilities as per cent of GSDP
- (vi) Total Contingent Liabilities as per cent of Revenue Receipts
- (vii) Interest Payment as per cent of Revenue Receipts

Focusing attention on the two main deficit indicators (items (i) and (ii) above), Table 4 lists out the targets and achievements since 2007-08.

Table 4. Revenue Deficit and Fiscal Deficit in Maharashtra: Targets & Achievements Post-FRL

	Revenue Surplus (-) / Deficit(+) as Percentage of GSDP			Gross Fiscal Surplus (-) / Deficit (+) as Percentage of GSDP		
	Actual	Target	Achievement	Actual	Target	Achievement
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2007-08	-2.5	-0.48	Yes	-0.48	2.16	Yes
2008-09	-0.72	-1.07	No	2.01	1.92	No
2009-10	0.92	-0.16	No	3.01	2.12	No
2010-11	0.06	-0.26	No	1.77	2.12	Yes
2011-12	0.19	0.18	No	1.66	2.5	Yes
2012-13	-0.32	0	Yes	1.04	1.91	Yes
2013-14	0.34	0	No	1.72	1.73	Yes

Source: Medium Term Fiscal Policy Statement and the Fiscal Policy Strategy Statement, various issues, GoM

Note: Deficit targets are revised every year and are announced for two subsequent years. For instance, in 2006-07, targets were set for 2007-08 and 2008-09; in 2007-08, targets were set for 2008-09 and 2009-10 and so on. Hence, it will be seen that the target for 2008-09 is revised in 2007-08 compared to the target set in 2006-07 and this is true for each year. However, what we report as targets above is the initial target that was set for each year and not the revised target that is set in the next year as the initial target is set for the two forthcoming years, as mandated by the FRBM Act. There is no provision for any such revision of targets in the FRBM Act and in fact must not happen.

Table 4 shows that the state of Maharashtra has been able to meet the gross fiscal deficit target in five of the seven years for which we have targets and actual figures available, but has not been able to meet the revenue deficit target for five of the seven years. 2007-08 and 2012-13 are the only two years for which the revenue deficit target has been met. Hence, while the state has been making all efforts at fiscal consolidation, it has not been able to meet the targets that it has set for itself and has, in fact, been repeatedly revising the targets for itself. As per Rule No. 6 of the Maharashtra FRBM rules, 2006 the state sets in every financial year the three years' rolling target for fiscal management. The statement presented in the legislature has budgeted figures for the forthcoming year and rolling targets for the following two years (Also, see note to Table 4). These rolling targets are, however, seen to be changing every year. For example in 2009-10 the rolling target for 2010-11 and 2011-12 for Gross Fiscal Deficit to GSDP was 2.5%. In 2010-11, the target for 2011-12 has been revised to 3%. If the goalpost is to change continuously, then the very purpose of setting targets is defeated.

An important issue which needs to be addressed in the fiscal analysis of a state is its inter-relationship with the power sector.¹ Many states continue to show fiscal/revenue deficit numbers conforming to FRLs, but their power sector bleeds. For instance, Tamil Nadu, which has good fiscal numbers, has large losses in its power sector: power sector financing (including financial losses of distribution companies) as percentage of the state's total revenues is as high as 28% and as percentage of GSDP, it is 5.19% [Mercados, 2014, Table XXV-10]. On the other hand, similar numbers for West Bengal, which has large fiscal deficit and debt numbers, are far

more modest: 0.5% of the state's total revenue and 0.06% of GSDP [Mercados, 2014, Table XXIX-9].

Power sector in Maharashtra, like in many other States has proved to be its Achilles' heel in the past. Maharashtra State Electricity Board (MSEB) required a manageable subsidy of Rs 300-650 crore until 1998-99. Since 1999-00, when Dhabol² came into existence, MSEB become a loss making enterprise. The net loss, without subsidy, was to the tune of Rs. 1149 crore for the year 2000-01. The budgetary support to the power sector which constitutes (i) subsidy and (ii) capital outlay and net lending rose from Rs. 450 crore in 1993/94 to Rs. 1122 crore in 2003-04 (RE), i.e., an increase of 2.5 times [Pethe and Lalvani, 2005]. More recently, Karnik and Lalvani (2014) have shown that (a) Average net profit is a loss in the pre power sector reforms³ time period while it is positive in the subsequent period; (b) Accumulated profits are substantially higher in the post-reforms period (c) The rates of return in the two time periods, (i.e., pre and post reforms) are 4.70% and 5.08% (d) The average turnover has increased three times over the two time periods. As a ratio to GSDP, it was 2.55% in the pre-reforms period which went up to 4.11% in the post-reforms period (d) Subsidies and grants received from the central government have gone down in the post-reforms but those received from the state government have increased substantially (e) Guarantees received have dropped to zero in the post-reforms period and guarantees outstanding in absolute amounts have also experienced a sharp fall.

It will also be noticed from Table 5 that the power sector has not imposed too grave a burden on the Maharashtra state's finances in the post-FRL period.

Table 5. Power Sector Finances

(% of GSDP)			
	Annual Net Profit/Loss	Accumulated Profit/Loss	Subsidies to Power Sector from State Govt.
(1)	(2)	(3)	(4)
2002-03	-0.17	-0.09	22.79
2003-04	-0.07	-0.15	20.04
2004-05	-0.13	-0.27	139.37
2005-06	0.00	0.00	10.11
2006-07	0.02	0.02	37.29
2007-08	-0.09	-0.25	46.34
2008-09	0.08	-0.41	0.28
2009-10	-0.14	-0.52	0.33
2010-11	0.03	-0.50	0.00
2011-12	0.12	-0.59	0.32

Source: Authors' calculations based on data obtained from Government of Maharashtra

It is seen that, after the enactment of the FRL in 2005-06, annual net losses have remained below 0.15% of GSDP. However, since losses have not been eliminated, accumulated losses, as percentage of GSDP, have risen to roughly half a percent of GSDP. The most significant change is seen in the subsidies given to the power sector. Subsidies have fallen below half a percent of GSDP. This suggests that the power sector has not been imposing an excessive burden on the state finances in the post-FRL period.

This overview section of Maharashtra's finances has shown that there was a steady deterioration right till the enactment of the FRL in 2004-05. Subsequent to the enactment of the FRL, there has been an improvement in the fiscal situation in the state but it has not been able to meet the targets that have been set for various measures of fiscal performance, specifically, gross fiscal deficit and revenue account deficit, especially the latter.

4. THE DECOMPOSITION EXERCISE

One of the important objectives of this paper is to discern whether the fiscal consolidation seen in Maharashtra has been driven more by central transfers or by the revenue collection efforts of

the state itself. The decomposition that we carry out in this section allows us to separate the relative contributions of central transfers and of the state in the overall fiscal performance of the state. The two new measures which we have introduced with the intention of judging the own effort of the state are:

- (i) Own Revenue Deficit (OwnRDEF)
- (ii) Own Gross Fiscal Deficit (OwnGFD)

We make use of the following identities to obtain the above measures:

$$RDEF \equiv REXP - REV$$

$$OwnRDEF \equiv OwnEXP - OwnREV$$

$$OwnEXP = REXP - INTEREST$$

$$OwnREV = REV - TRANSF$$

$$GFD = RDEF + CO + NL - NDCR$$

$$OwnGFD = OwnRDEF + CO + NL - NDCR$$

Where

RDEF = Revenue account deficit

REXP = Expenditures on revenue account

REV = Receipts on revenue account inclusive of tax and non-tax revenues plus transfers from the central government

INTEREST = Interest payments

TRANSF = Transfers (share in taxes and grants)

from the central government

GFD = Gross fiscal deficit

CO = Capital outlay

NL = Net lending

NDCR = Non-debt capital receipts

Wherever we require any of the above quantities to be used as ratios to GSDP, we suffix a 'Y' at the end of the abbreviation. For example, ratio of RDEF to GSDP will be denoted by RDEFY.

The concept of OwnRDEFY which nets out interest payments from the expenditure side and central transfers (both tax shares and grants) from the receipts side allows us to assess the own effort of the state of Maharashtra in the fiscal correction that has occurred post-FRL. The netting out of interest payments from the expenditure side is important in view of the fact that the central government, based on recommendations of the Twelfth Finance Commission, allowed for debt waiver. Under the scheme, the repayments due from 2005-06 to 2009-10 on central government loans contracted up to 31.3.04 and recommended to be consolidated were eligible for write off. (Finance Commission of India, 2004, p. 228) In view of this, it is important to net out interest payment so as to not over-estimate the own effort of the state.⁴ More specifically, a fall in interest payments would suggest that the state has put in

'own effort' to reduce expenditures and hence reduce deficits. However, the debt waiver of the Twelfth Finance Commission, referred to above, resulted in revenue expenditures of the state coming down, but this was not because of any effort on the part of the state government itself. Hence, it is to take care of such aberrations that we net out interest payments from the expenditure side of the budget. The only additional component in OwnGFDY on which we assess the state's performance is that of capital outlays.

For each of the deficit measures as percentage of GSDP, we have taken the average of 5 years pre-FRL and compared it with the average for differing number of years post-FRL to gauge the performance of the state. In order to do a time consistency check we extend the methodology suggested by Simone and Topalova [2009] and repeat this exercise by incrementally adding two years in the post-FRL period and comparing it with five years pre-FRL (which stays fixed). The change in these figures gives us a series of numbers with a rolling window, which helps us judge how the state has fared incrementally over the years in the post-FRL period. Finally, we also assess Budget 2015-16 by comparing it with a benchmark of the average of 5 years pre-FRL. Illustratively, we compute:

$$\Delta RDEFY_1 = (\text{avg RDEFY 2 years post-FRL}) - (\text{avg RDEFY 5 years pre-FRL}) \dots (5.1)$$

$$\Delta RDEFY_2 = (\text{avg RDEFY 4 years post-FRL}) - (\text{avg RDEFY 5 years pre-FRL}) \dots (5.2)$$

$$\Delta RDEFY_3 = (\text{avg RDEFY 6 years post-FRL}) - (\text{avg RDEFY 5 years pre-FRL}) \dots (5.3)$$

$$\Delta RDEFY_4 = (\text{avg RDEFY 8 years post-FRL}) - (\text{avg RDEFY 5 years pre-FRL}) \dots (5.4)$$

$$\Delta RDEFY_5 = (\text{avg RDEFY 10 years post-FRL}) - (\text{avg RDEFY 5 years pre-FRL}) \dots (5.5)$$

$$\Delta RDEFY_6 = (\text{as in Budget 2015-16}) - (\text{avg RDEFY 5 years pre-FRL}) \dots (5.6)$$

In Table 6, we present rolling computations for RDEFY and OwnRDEFY. Details about the components of RDEFY and OwnRDEFY are given in Appendix Table A-1. In the lower panel of Table 6, we have reported Δ RDEFY and Δ OwnRDEFY, computed as per equations (5.1) to (5.6).

Table 6. RDEFY and OwnRDEFY - Pre and Post-FRL

	RDEFY	OwnRDEFY
(1)	(2)	(3)
5 yrs pre-FRL	2.59	1.88
2 years post-FRL	0.28	0.52
5 yrs pre-FRL	2.59	1.88
4 years post-FRL	-0.69	-0.19
5 yrs pre-FRL	2.59	1.88
6 years post-FRL	-0.2	0.37
5 yrs pre-FRL	2.59	1.88
8 years post-FRL	-0.19	0.47
5 yrs pre-FRL	2.59	1.88
10 years post-FRL	0.08	0.83
5 yrs pre-FRL	2.59	1.88
2015-16 (BE)	0.2	1.22

Change: A Comparison with 5 Years Pre-FRL

	Δ RDEFY	Δ OwnRDEFY
2 years post-FRL	-2.31	-1.36
4 years post-FRL	-3.28	-2.07
6 years post-FRL	-2.79	-1.52
8 years post-FRL	-2.79	-1.41
10 years post-FRL	-2.51	-1.05
2015-16 (BE)	-2.39	-0.66

Note: A negative sign for Δ RDEFY and Δ OwnRDEFY indicates a reduction in RDEFY and OwnRDEFY in the post-FRL period as compared to the pre-FRL period.

The following major conclusions emerge from our computations in Table 6 are:

- (i) The state has consistently shown a reduction in RDEFY in all the post-FRL years. This is certainly a positive development.

- (ii) OwnRDEFY, which allow us to gauge the own effort of the state to curtail revenue deficits, is negative for all the years post-FRL. One must accord due credit to the state government for bringing about this change. However, we also notice that there is a distinct upward trend from 2009-10 onwards, i.e., the gap between OwnRDEFY in the pre-FRL period and the post-FRL period seems to be continuously and consistently reducing. This is a worrying signal as this suggests a slackening of the own effort of the state and a greater reliance on transfers than on its own effort in the fiscal correction process.

As far as the components of RDEFY and OwnREXPY are concerned (see Appendix Table A-1 for details), the following comments may be made:

- (i) REXPY has consistently shown a reduction in all the years post-FRL. This too must be viewed as a positive development. However, it is important to look at the components of government expenditure.
- (ii) In Appendix Table A-1, we have shown the improvement in REXPY in the post-FRL period. The lower panel of this table shows that, compared to the average REXPY in the five years pre-FRL, REXPY has declined in the post-FRL period. But a closer examination of this decline is required.
- (iii) If one looks at the components of REXPY, it is possible to see a variety of patterns. Considering the broad categories, Development Expenditures (DE) and Non-development Expenditures (NDE), Appendix Table A-2 shows that the burden of adjustment has fallen more on NDE rather than DE. This is a positive development in the sense that the government has tried to protect expenditures which are important for development while cutting back on relatively unproductive expenditures.

- (iv) Components of DE - expenditure of social services and economic services - has also faced some adjustment. However, the positive aspect of this adjustment is that scale of adjustment was much stronger in the immediate aftermath of the FRL but the rigour of these adjustments seems to be diminishing as the years have rolled by.
- (v) What is worrisome about the nature of fiscal consolidation is that, post-FRL, OwnREVY is lower than the average of 5 years pre-FRL in all years except one, (i.e., in 2012-13, when we compare 8 years after FRL with the pre-FRL years.).
- (vi) TRANSFY has shown a consistent increase in the post-FRL years.
- (vii) The question may well be raised whether the availability of central funds (TRANSFY) acts as disincentive to the state to raise its own revenues.

Separating out the numbers for budget 2015-16 and comparing it with our benchmark of the average of 5 years pre-FRL presents a disappointing picture. In fact, on several counts it signals the worst performance in the post-FRL period:

- (a) The reduction in RDEFY of 2015-16 (BE) compared to the average of 5 pre-FRL years is one of the lowest in the post-FRL period and continues the trend observed over the last few years
- (b) The reduction in OwnREVY in 2015-16 (BE) (appendix Table A-1) compared to the average of 5 years pre-FRL is the largest so far in the post-FRL period (-0.41). Riding on the back of continuously increasing transfers it would appear that the state government has been displaying alarming laxity on the own revenue collection front.
- (c) A comparison of RDEFY and OwnRDEFY shows that own effort of the state at fiscal correction is not just lower but has,

in fact, worsened over time. Gap between RDEFY and OwnRDEFY is the largest ever for Budget 2015-16.

Having examined the performance of revenue deficits in the post-FRL period in great detail, we provide only a brief analysis of gross fiscal deficit. Table 7 reports these results. The only added dimension when considering Gross Fiscal Deficit is Capital Outlay, hence we examine the change in Capital Outlay as per cent of GSDP (COY) in the years post FRL *vis-à-vis* pre FRL (Table 7).

Table 7. GFDY and OwnGFDY - Pre- and Post-FRL

	GFDY	OwnGFDY	COY
(1)	(2)	(3)	(4)
5 yrs pre- FRL	4.19	3.48	1.61
2 years post-FRL	2.72	2.96	1.88
5 yrs pre- FRL	4.19	3.48	1.61
4 years post-FRL	1.61	2.11	2.01
5 yrs pre- FRL	4.19	3.48	1.61
6 years post-FRL	1.93	2.50	1.95
5 yrs pre- FRL	4.19	3.48	1.61
8 years post-FRL	2.13	2.35	2.17
5 yrs pre- FRL	4.19	3.48	1.61
10 years post-FRL	1.80	2.56	1.63
5 yrs pre- FRL	4.19	3.48	1.61
2015-16 (BE)	1.63	2.65	1.43
	ΔGFDY	ΔOwnGFDY	ΔCOY
2 years post-FRL	-1.47	-0.52	0.27
4 years post-FRL	-2.59	-1.37	0.4
6 years post-FRL	-2.26	-0.99	0.33
8 years post-FRL	-2.06	-1.13	0.56
10 years post-FRL	-2.39	-0.93	0.02
2015-16 (BE)	-2.57	-0.84	-0.18

The main points to emerge from Table 7 are:

- (1) The pattern of ΔGFDY is different from that observed for RDEFY. While there was a continuous deterioration in the performance of ΔRDEFY, ΔGFDY reached its worst performance eight years post-FRL but has recovered since then. This is seen even for the projected values for Budget 2015-16.

- (2) Δ OwnGFDY shows a variable pattern with no obvious improvement nor deterioration in performance. One thing is, however, clear: changes in ownGFDY have been substantially lower than those in GFDY. This, once again, indicates greater reliance on transfers from the central government for improvement in fiscal performance than on the own efforts by the state.
- (3) When looking at the numbers for COY we find that for the first time ever since the passing of FRL we find that capital outlays to GDP is lower than the 5 years Pre-FRL. The budget numbers do not seem to reflect the concern of the Finance Minister who emphasised "we have to create capital assets for the new generation" (Government of Maharashtra, 2015, Budget Speech, Part 1, page 2). However, it must be stated that, barring 2015-16, COY have not been compressed in the post-FRL adjustment period. As commented earlier in the case of development expenditures, the government has tried to protect COY as much as possible but over the years a deterioration is beginning to set which is a worrying sign.

5. ANALYSIS OF EXPENDITURES ON PUBLIC AND MERIT GOODS

Having looked at broad summary measures of fiscal performance, we now try to take a slightly more granular look at government finances. It has often been seen that when governments seek fiscal consolidation, expenditure compression is the preferred option possibly because revenues are difficult to raise [Joshi, 2006, Pp. 358-365]. Both Joshi [2006] and Tulasidhar [1993, Pp. 2473-2477] focus attention on the reduction in expenditure on the social sector as a consequence of the economic reforms of 1991. Our concern in this paper is, of course, not the economic reforms but on the effects of the FRLs enacted by the state of Maharashtra

With expenditure responsibilities skewed in favour of state governments, a crucial yardstick by which we can assess the fiscal performance of a state government is to consider the situation with respect to expenditures on public goods and merit goods. The Medium Term Fiscal Policy Strategy Statement and Disclosures, which is mandatorily presented as part of the Fiscal Responsibility Legislation, states that "the ultimate objective is to achieve growth and improve Human Development Index" [Government of Maharashtra, 2015]. In view of this stated objective, we examine the allocations made towards education and health since these two components are critical for the improvement of the human development index. In addition, we also look at allocations for the broad category of public goods and merit goods. As discussed below, we have defined public goods very broadly using the expenditure allocations at the level of major budget heads.

Our understanding of public goods and merit goods follows the discussion in Lalvani et al [2009]. The scope of public goods and merit goods are as per Table 8.

Table 8. Scope of Public Goods and Merit Goods

Goods Category	Items Included under Category
(1)	(2)
Public Goods	1. Medical and Public Health 2. Soil and Water Conservation 3. Forestry and Wild Life 4. Agricultural Research and Foundation 5. Power 6. Roads and Bridges 7. Police
Merit Goods	1. Education, Sports, Art and Culture: 2. Family Welfare: 3. Water Supply and Sanitation: 4. Welfare of SC, ST and OBC: 5. Labour and Labour Welfare: 6. Social Security and Welfare: 7. Nutrition: 8. Relief on Account of Natural Calamities

Source: Lalvani et al (2009)

We begin our analysis by considering the (MG) expenditure in the GSDP of Maharashtra. shares of public goods (PG) and merit goods Table 9 gives the details.

Table 9. Expenditure on Public and Merit Goods

(% of GSDP)				
	Public Good	Merit Good	Education	Medical & Public Health
(1)	(2)	(3)	(4)	(5)
2000-01	3.36	4.48	3.43	0.53
2001-02	1.87	4.07	3.16	0.55
2002-03	1.94	3.62	2.72	0.49
2003-04	1.70	3.63	2.55	0.48
2004-05	2.17	3.52	2.45	0.44
2005-06	1.86	3.58	2.21	0.43
2006-07	1.90	3.44	2.13	0.35
2007-08	2.13	3.14	2.01	0.36
2008-09	2.21	3.43	2.23	0.41
2009-10	2.56	3.78	2.62	0.41
2010-11	2.22	3.77	2.58	0.40
2011-12	2.31	3.86	2.56	0.42
2012-13	2.27	3.89	2.57	0.44
2013-14	2.24	3.94	2.54	0.45
2014-15(RE)	2.82	4.21	2.47	0.61
2015-16(BE)	2.25	3.77	2.42	0.53

Note: Education includes sports, art and culture

From Table 9 we see that the shares of PG and MG in GSDP were the highest in 2000-01. Since then the shares have shown a declining trend in the first half of the decade. In 2005-06, the year that the FRL was passed the share of PG attains its lowest level and has risen since then. On the other hand, the share of MG continued to fall till 2007-08 before recovering. Despite this slight difference in the behaviour of PG and MG, it is fair to say that since the enactment of the FRL, their shares have remained persistently above their lowest levels. However, the shares have not reached the level attained in 2000-01. Two critical components of public goods are listed separately in the last two columns of Table 9, namely, education, and medical and public health. It will be seen that the share of education was the poorest in the year of passing the FRL and for two subsequent years, but since then, it has remained above these low levels. However, the share of medical and public health, barring 2014-15, has

struggled to remain above the level attained in 2005-06. Finally, as far as the budgeted allocation for 2015-16 are concerned, these seem to be pulling down the shares of every item in Table 9. Bearing in mind past experience, it seems reasonable to suggest that the actual allocations for the 2015-16 may well fall below the budgeted levels leading to a further worsening of the shares of all items in Table 9.

As we had done in the case of RDEFY and GFDY, we carry out a before-after comparison of the shares of PG, MG and the two components of education and health. Specifically, for each share we compute the average of shares 5 years pre-FRL and for varying years post-FRL. This is reported in the upper panel of Table 10. In the lower panel of Table 10, we compute differences in the pre-FRL and post-FRL in the manner described in equations (5.1) to (5.6) making appropriate changes for the variables being considered here.

Table 10 Public and Merit Goods: Pre and Post-FRL

(% of GSDP)				
	Public Good	Merit Good	Education	Medical & Public Health
(1)	(2)	(3)	(4)	(5)
5 years pre-FRL	2.21	3.86	2.86	0.50
2 years post-FRL	1.88	3.51	2.17	0.39
4 years post-FRL	2.02	3.40	2.15	0.39
6 years post-FRL	2.15	3.52	2.30	0.39
8 years post-FRL	2.18	3.61	2.36	0.40
10 years post-FRL	2.25	3.70	2.39	0.43
Change: A Comparison with 5 Years Pre-FRL				
	Δ Public Good	Δ Merit Good	Δ Education	Δ (Medical & Public Health)
2 years post-FRL	-0.33	-0.35	-0.69	-0.11
4 years post-FRL	-0.18	-0.47	-0.72	-0.11
6 years post-FRL	-0.06	-0.34	-0.56	-0.11
8 years post-FRL	-0.02	-0.25	-0.50	-0.10
10 years post-FRL	0.05	-0.16	-0.47	-0.07

Table 10 makes it amply clear that the shares allocated to Public and Merit Goods in general and education and public health, in particular, have been lower in the post-FRL years compared to the pre-FRL years. It is only in the last two years that we notice the comparison with pre-FRL years to be positive in case of PG though the comparison continues to remain adverse for all the other items in Table 10.

We also looked at the components of Public and Merit goods (Tables A-3 (a & b) and Table A-4(a & b) give details; see detailed notes below the Tables also) and compared the pre-FRL average (2000-01 to 2004-05) *vis-à-vis* post FRL average (2005-06 to 2014-15(RE)) and found that the average shares of the following components in GSDP had fallen in the post FRL period:

Public Goods

- (i) Medical and Public Health (revenue expenditure)

- (ii) Soil and Water Conservation (revenue expenditure)
- (iii) Forestry and Wild Life (revenue expenditure)
- (iv) Agricultural Research and Education (revenue expenditure)
- (v) Police (revenue expenditure)
- (vi) Power Projects (capital expenditure)

Merit Goods

- (i) Education, Sports, Art and Culture (revenue expenditure)
- (ii) Family Welfare (revenue expenditure)
- (iii) Social Security and Welfare (revenue expenditure)

Thus, it would appear that many key developmental expenditure have in fact, been sacrificed in the post FRL period. The results of this section suggest that while deficits are important to track it is equally, if not more, important to look "below the line" at the performance of the government on these key expenditure categories.

6. IMPACT OF FRL ON DEFICITS: GMM ESTIMATION

This section presents some econometric exercises to examine the effect of introducing FRL rules on the fiscal performance of Maharashtra. Fiscal performance will be measured by (a) gross fiscal deficit as conventionally measured and by own gross fiscal deficit, a measure that we have discussed in an earlier section (b) revenue (account) deficit and own revenue (account) deficit. The exercises reported in this section might seem to be no more than a reiteration of the results reported in Section 4. In that section, what we presented were outcomes pre-and post-FRL without analysing the factors that affect fiscal deficit measures. The results reported in this section help enhance our understanding of the phenomenon under study by relating deficit measures to factors that we believe are relevant. Specifically, we wish to examine the effect of FRL *in the presence* of other factors that may be relevant in driving deficits in the state. All indicators of fiscal performance considered here will be in the form of ratios to GSDP. The primary equation that we seek to estimate is similar to that reported by Simone and Topalova (2009). However, Simone and Topalova (2009) estimated the equation for panel data for a collection of Indian states while we use it only for Maharashtra.

One other important difference is in the estimation method used. While the Simone and Topalova used a fixed-effects approach for panel estimation, we believe that such a simple approach, which does not recognise the possibility of endogeneity of some of the explanatory variables, may not be appropriate. Our approach, discussed below, recognises this endogeneity and uses a method that overcomes this problem. We begin with the basic equation given by:

$$\text{Fiscal performance indicator} = \alpha_0 + \alpha_1 \text{FRL} + u \quad \dots(7.1)$$

where,

Fiscal performance indicator = GFDY or OwnGFDY or RDEFY or OwnRDEFY

FRL = 1, for time period since the enactment of FRL; 0, for time period prior to its enactment

To the basic equation, we successively add control variables, such as level of real output (GSDP), lagged debt as percentage of GSDP (DEBTY1) and rate of inflation (INFL). The purpose of the exercise is to observe if the influence of the FRL variable on the fiscal performance indicator changes as more controls are introduced into the equation.

As stated above, there is a possibility that some of the control variables may exhibit endogeneity, thereby making the use of OLS inappropriate. Consequently, we have employed the Generalised Method of Moments to overcome this problem. This requires the use of instruments Z , which are exogenous and satisfy $E(Z_i u_i) = 0$. The L instruments yield a set of L moments,

$$g_i(\beta) = Z_i' u_i = Z_i'(y_i - X_i \beta) \quad (7.2)$$

where g_i is $L \times 1$. The exogeneity of the instruments means that there are L moment conditions, or orthogonality conditions, that will be satisfied at the true value of β :

$$E\{g_i(\beta)\} = 0 \quad (7.3)$$

When fitting a model by GMM, we need to check whether the instruments we use, in fact, satisfy the orthogonality condition, i.e., whether they are uncorrelated with the errors. We report the Hansen's J statistic for this purpose. The test statistic has a χ^2 distribution under the null hypothesis that the instruments are valid. A significant J statistic indicates that one or more of instruments used are not valid (assuming that the model is otherwise correctly specified).

Table 11. Impact of FRL on GFDY

Panel 1: Dependent variable: GFDY					
	(7.4)	(7.5)	(7.6)	(7.7)	(7.7a)
LGSDP	-	2.6449*** (0.00)	1.5343 (0.14)	2.9707 (0.14)	1.0753 (0.66)
LDEBTY1	-	-	3.5011* (0.06)	2.6547 (0.38)	-1.128 (0.87)
INFL	-	-	-	0.2504 (0.23)	0.0131 (0.94)
FRL	-1.1882** (0.02)	-3.4317*** (0.00)	-3.4572*** (0.00)	-5.0766*** (0.00)	-0.435 (0.944)
TRANSFY					-2.4997 (0.54)
constant	3.0729*** (0.00)	-42.2353*** (0.00)	-33.5233*** (0.00)	-57.2633* (0.07)	-7.8061 (0.91)
Hansen's J chi2(3)		5.75 (0.12)	4.37 (0.11)	0.2798 (0.60)	1.92 (0.17)
Panel 2: Dependent variable: OwnGFDY					
	(7.8)	(7.9)	(7.10)	(7.11)	(7.11a)
LGSDP	-	0.7512 (0.26)	1.1882 (0.22)	2.1391 (0.15)	1.5217 (0.46)
LDEBTY1	-	-	-0.7140 (0.68)	-1.2744 (0.57)	-1.3398 (0.82)
INFL	-	-	-	0.1658 (0.28)	0.0636 (0.66)
FRL	-0.7462** (0.03)	-1.3835** (0.03)	-1.5139** (0.04)	-2.5860* (0.05)	-1.5015 (0.77)
TRANSFY					-0.5025 (0.88)
constant	3.2315*** (0.00)	-9.6366 (0.40)	-15.0614 (0.29)	-30.7778 (0.18)	-18.48 (0.74)
Hansen's J chi2(3)		4.60 (0.20)	3.72 (0.16)	1.26 (0.26)	3.04 (0.08)

Notes:

(1) The basic equations (7.4) and (7.8) are estimated using OLS

(2) Figures in parentheses are p-values

(3) *** = p-value < 0.01; ** = p-value < 0.05; * = p < 0.10

(4) Instruments: POP, TRANSFY, TE_ALL, DEC and FRL.

(5) Please note that in equations 7.7a and 7.11a do not include TRANSFY as an instrument.

Table 11 reports results for models with GFDY and OwnGFDY as dependent variables and log of real GSDP (LGSDP), one-period lagged log of Debt to GSDP ratio (LDEBTY1), rate of inflation (INFL) and FRL as independent variables. The possibility of some of our control variables exhibiting endogeneity stems from the following considerations. Pekarski [2011, Pp. 1-11] finds a deep connection between price changes and deficits. Hence, INFL could well exhibit endogeneity. The links between economic activity (measured as GDP or GSDP), economic growth and deficits has been well-studied [see for example, Bevan and Adam, 2005, Pp. 571-597] which lead us to suspect the endogeneity of GSDP. Hence, we have estimated our equation using the following variables as instruments: (1) population of Maharashtra, (POP), (2) fiscal transfers from the central government to the Government of Maharashtra as percent of GSDP (TRANSFY), (3) total expenditure of all levels of government in India (TE_ALL), (4) a measure of decentralisation defined as total expenditure of Government of Maharashtra as percentage of total government expenditure (states plus centre) of India (DEC), and (5) FRL.. Table 11 reports the results for GFDY (Panel 1) and OwnGFDY (Panel 2). In each case, we begin with the basic equation and then successively add control variables.

In Panel 1 of Table 11, we see that as we progress from the basic equation (7.4) to equation (7.7) and add control variables, the significance and sign of FRL remains intact. The negative sign of FRL shows that the introduction of fiscal rules has reduced GFDY, which was the intended purpose of the rules. However, when we add TRANSFY as an explanatory variable in equation (7.7a), the quality of the equation deteriorates quite dramatically. The reason for this is the fact that TRANSFY is an important component in the definition of GFDY, the left-hand side variable. Consequently, the presence of TRANSFY on both sides of the equation, possibly, destroys the explanatory power of the equation and renders all

explanatory variables statistically insignificant. There is also a strong possibility of multicollinearity among the independent variables of equation (7.7a). Computing variance inflation factors (VIF) after running a simple regression of the specification of (7.7a) shows one value as high as 10.73 which is usually seen as suggestive of multicollinearity. However, the VIF for equation (7.7) shows no value in excess of 10 indicating that the inclusion of TRANSFY maybe creating statistical problems in the estimation of equation (7.7a).

The results reported in Panel 2 show a pattern similar to that in Panel 1 if Table 11. However, there is one striking difference between the two panels. The size of the coefficient of FRL is substantially smaller in Panel 2 compared to Panel 1. This shows that the beneficial effect of the fiscal rules on the fiscal deficit of the GoM, excluding transfers from the central government has been of a much smaller order. Hence, we may conclude that the major impetus for reducing deficits in the post-FRL period has come from revenues available from central transfers and not so much as a result of improved fiscal performance at the level of the state of Maharashtra. Note that we have estimated equation (7.11a) by including TRANSFY as an explanatory variable. In this case also computation of VIF shows value in excess of 10 which is not the case for equation for (7.11).

There may be some misgivings that the dependent variables in Panel 1 and Panel 2 of Table 11 are different and, hence, it may be inappropriate to compare coefficients of FRL across these two panels. We recognise this and offer two justifications for the comparison: (a) The two dependent variables - GFDY and OwnGFDY - are on a similar scale with the mean of GFDY equal to 2.67 and that of OwnGFDY equal to 2.97. Hence, it is reasonable to conclude that the difference we are seeing between the coefficients across the panels is not due to any

difference in scale of the dependent variable (b) To develop the point just made, we converted the GFDY and OwnGFDY into standardised normal variables and then estimated the equations using these transformed dependent variables. We can report that even for these modified equations (not

reported here), our conclusion regarding the size of the coefficients of FRL is no different from what we have reported above.

Table 12 replicates the exercise of Table 11 for revenue account deficits.

Table 12. Impact of FRL on RDEFY

Panel 1: Dependent variable: RDEFY					
	(7.12)	(7.13)	(7.14)	(7.15)	(7.15a)
LGSDP	-	3.2359*** (0.00)	2.1711** (0.02)	2.5792* (0.06)	1.7654 (0.43)
LDEBTY1	-	-	3.2947* (0.05)	3.0542 (0.13)	-1.0686 (0.86)
INFL	-	-	-	0.0712 (0.61)	0.0068 (0.97)
FRL	-1.4430*** (0.01)	-4.1878*** (0.00)	-4.1991*** (0.00)	-4.6592*** (0.00)	-1.4839 (0.79)
TRANSFY					-2.1345 (0.56)
constant	1.3095*** (0.00)	-54.1217 (0.00)	-45.5828*** (0.00)	-52.3278** (0.01)	-22.1482 (0.71)
Hansen's J chi2(3)		3.06 (0.38)	0.42 (0.81)	0.0438 (0.83)	0.0072 (0.93)
Panel 2: Dependent variable: OwnRDEFY					
	(7.16)	(7.17)	(7.18)	(7.19)	(7.19a)
LGSDP	-	1.3422** (0.03)	1.8250** (0.04)	1.7476 (0.10)	2.2118 (0.27)
LDEBTY1	-	-	-0.9204 (0.56)	-0.8748 (0.58)	-1.2803 (0.82)
INFL	-	-	-	-0.0135 (0.90)	0.0573 (0.68)
FRL	-1.0011*** (0.00)	-2.1396*** (0.00)	-2.2559*** (0.00)	-2.1687** (0.02)	-2.5506 (0.616)
constant	1.4682*** (0.00)	-21.5321** (0.04)	-27.1210** (0.04)	-25.8422 (0.12)	-0.1374 (0.967)
Hansen's J chi2(3)		1.64 (0.69)	0.68 (0.71)	0.6826 (0.41)	0.00063 (0.99)

Notes:

(1) The basic equations (7.12) and (7.16) are estimated using OLS

(2) Figures in parentheses are p-values

(3) *** = p-value < 0.01; ** = p-value < 0.05; * = p < 0.10

(4) Instruments: POP, TRANSFY, TE_ALL, DEC and FRL

(5) Please note that equations 7.15a and 7.19a do not include TRANSFY as an instrument

The results of Table 12 (for both the panels) show the importance of fiscal rules in curbing both measures of revenue deficits. Once again, the comments made earlier about the difference in the size of the coefficients of FRL between the two panels remain valid for Table 12 as well. The coefficient of FRL in panel 2 is much smaller than that estimated in panel 1 of Table 11. The comments made in the context of equations (7.7a) and (7.11a) remain valid for equations (7.15a) and (7.19a).

Our empirical estimations thus show that GFDY and RDEFY, the two major target indicators which seem to be well under control after the passing of FRL, have, in fact, been aided considerably by central government transfers. The own effort of the state at attaining these targets is much less spectacular when central government transfers are netted out as has been attempted by us when we consider OwnGFDY and OwnRDEFY.

7. CONCLUSION

The main purpose of this paper was to examine the effectiveness of the FRL that was enacted by the state of Maharashtra in 2004-05. The FRL (at the state level) itself came into existence as a culmination of the worsening fiscal position of the state as well as the inducement provided by the Twelfth Finance Commission. Since the enactment of the FRL, the fiscal situation of the state has, indeed, improved but the question we ask is what factors have led to this improvement. Specifically, was it the result of (a) increased revenue raising effort of the state (b) increased transfers from the central government or (c) expenditure compression?

The results of the exercise we report in section 4 are quite clear. The major impetus for the improvement in the fiscal performance of the state has come from transfers from the central government. Our exercises showed that, as compared to OwnRDEFY (which excludes central

government transfers), RDEFY (which includes these central transfers) was substantially lower in the post-FRL period than in the pre-FRL period. A similar result was obtained for OwnGFDY and GFDY. This result was reinforced in the GMM estimation exercise in section 6. There was no doubt that RDEFY (GFDY) was lower in the post-FRL period as seen by the negative coefficient of FRL in all the equations in the upper panel of Tables 11 and 12. The coefficient of FRL was also negative for all equations involving OwnRDEFY (OwnGFDY) but the magnitude of the coefficient was substantially smaller compared to that in equations with RDEFY (GFDY) as dependent variable.

Having looked at fiscal performance in broad terms of RDEFY and GFDY, in section 5 we adopted a more granular approach to fiscal performance by considering specific categories of expenditures. Considering categories such as public goods and merit goods, we pointed out that such expenditures were lower in the post-FRL period compared to pre-FRL. This remained true even when we looked at expenditure on education and public health.

Two major conclusions emerge from our study: (a) There is excessive dependence on central government transfers in pursuit of improved fiscal performance of the state (b) The contribution of own revenues of the state has played a relatively minor role in the improvement of fiscal performance. The relatively minor role of own revenues of the state can be quantified. Compared to 2005-06 (the year in which the FRL was passed in Maharashtra), in the year 2007-08, GFDY experienced its sharpest fall of -111.37% which was made possible by a 35.9% increase in revenues. In this enhancement of revenues, own revenues of the state displayed their best performance and contributed 45% while transfers contributed 55%. The year 2012-13 was the last year which saw an increase in own revenues of the state (when compared to 2005-06) when such

revenues contributed 21% to the enhancement in revenues while transfers contributed 79%. After this year, own revenues as percentage of GSDP (when compared to 2005-06) started to decline and the contributions from transfers had to make good this shortfall. It is possible to propose that the state's incentive to raise its own revenues has been blunted by the availability of transfers from the central government. (c) Social sector expenditure has faced the major brunt of the expenditure compression that has been effected in the post-FRL period.

NOTES

1. We would like to thank an anonymous referee for drawing our attention to this issue.

2. Dabhol Power Station was a joint venture of Enron, General Electric, Bechtel and Maharashtra Power Development Corporation. This was the biggest foreign investment in India when it started in 1992. Due to political controversy related to the pricing of power from the station and allegations of favouritism, the operation of the Dabhol power station was interrupted on several occasions. Subsequently, operations were interrupted due to the Enron bankruptcy and disputes between Enron's creditors and the Government of Maharashtra (GoM). The power plant was finally rehabilitated and taken over by Ratnagiri Gas and Power (RGPPPL), which successfully revived the plant and continues to operate it.

3. Power sector reforms occurred in 2002 when MSEB was unbundled into three separate companies which would handle generation, transmission and distribution separately.

4. We would like to thank Prof. Indira Rajaraman for drawing our attention to this.

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APPENDIX Table A-1: RDEFY and Own RDEFY - Pre and Post-FRL

	REXPY	RDEFY	OWNREYV	TRANSFY	Own RDEFY
(1)	(2)	(3)	(4)	(5)	(6)
5 yrs pre-FRL	12.45	2.59	8.42	1.43	1.88
2 years post-FRL	10.61	0.28	8.13	2.2	0.52
5 yrs pre-FRL	12.45	2.59	8.42	1.43	1.88
4 years post-FRL	10.12	-0.69	8.50	2.31	-0.19
5 yrs pre-FRL	12.45	2.59	8.42	1.43	1.88
6 years post-FRL	10.32	-0.20	8.25	2.27	0.37
5 yrs pre-FRL	12.45	2.59	8.42	1.43	1.88
8 years post-FRL	10.36	-0.19	10.26	2.78	0.47
5 yrs pre-FRL	12.45	2.59	8.42	1.43	1.88
10 years post-FRL	10.56	0.08	8.17	2.31	0.83
5 yrs pre-FRL	12.45	2.59	8.42	1.43	1.88
2015-16 (BE)	10.69	0.20	8.01	2.48	1.22

Change: A Comparison with 5-Years Pre-FRL

	Δ REXPY	Δ RDEFY	Δ OWNREYV	Δ TRANSFY	Δ Own RDEFY
2 years post-FRL	-1.84	-2.31	-0.29	0.77	-1.36
4 years post-FRL	-2.32	-3.28	0.08	0.88	-2.07
6 years post-FRL	-2.13	-2.79	-0.18	0.84	-1.52
8 years post-FRL	-2.06	-2.79	1.83	1.35	-1.41
10 years post-FRL	-1.89	-2.51	-0.25	0.88	-1.05
2015-16(BE)	-1.75	-2.39	-0.41	1.05	-0.66

Source: GoM Budget Documents and RBI, State Finances

Table A-2. Components of REXPY compared to 5-years pre-FRL

	Δ DE	Δ Social Services	Δ Economic Services	Δ NDE
(1)	(2)	(3)	(4)	(5)
2 years post FRL	-0.72	-0.46	-0.26	-1.11
4 years post FRL	-0.67	-0.49	-0.19	-1.61
6 years post FRL	-0.37	-0.20	-0.16	-1.70
8 years post FRL	-0.22	-0.07	-0.15	-1.76
10 years post FRL	-0.04	0.08	-0.12	-1.77
2015-16(BE)	-0.08	-0.02	-0.06	-1.57

Note: DE = Development Expenditure; NDE=Non-development Expenditures

Table A-3(a). Share of Public Goods in Revenue Account and Capital Account Expenditures

(% of GSDP)

	Pre-FRL (Rev. Exp)	Post-FRL (Rev. Exp)	Pre-FRL (Cap. Exp)	Post-FRL (Cap. Exp)	Pre-FRL (Total Exp)	Post-FRL (Total Exp)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Agricultural Research and Education	0.068	0.050	0.00009	0.0005	0.07	0.05
Forestry and Wild Life	0.093	0.088	0.003	0.008	0.096	0.095
Medical and Public Health	0.467	0.416	0.026	0.030	0.49	0.45
Police	0.537	0.525	0.001	0.015	0.538	0.540
Power Projects	0.427	0.451	0.210	0.140	0.64	0.59
Roads and Bridges	0.090	0.293	0.190	0.240	0.28	0.53
Soil and Water Conservation	0.018	0.003	0.032	0.069	0.05	0.07

Note: Rev. Exp. = Expenditures on Revenue Account; Cap. Exp. = Expenditures on Capital Account; Total Exp. = Total (Revenue + Capital Accounts) Expenditures.

The important points to be noted from Table A-3(a) are the following:

- (1) Shares of all items, barring Power Projects and Roads & Bridges, have shown a decline in the post-FRL period in terms of revenue expenditures. Especially disappointing is the fall in the share of Medical and Public Health.
- (2) However, in terms of capital expenditures, many items show an increase. Surprisingly, Power Projects show a decline which does not augur well for the infrastructure sector of the state.
- (3) Roads & Bridges, the other important component of infrastructure, does show a substantial increase.
- (4) Having seen the results of Table A-3(a), the question to be asked is whether only the shares have declined in the post-FRL period or whether actual expenditures on these items have gone down as well. This is explored in Table A-3(b).

Table A-3(b). Expenditure Allocation for Public Goods

(Rs. crores)

	Pre FRL (Nominal)	Post FRL (Nominal)	% Change (Post-FRL over Pre- FRL) (Nominal)	Pre FRL (Real)	Post FRL (Real)	% Change (Post-FRL over Pre- FRL) (Real)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Agricultural Research and Education (Capital Account)	0.29	4.90	1589.66	0.32	3.09	865.63
Agricultural Research and Education (Revenue Account)	227.75	502.30	120.55	244.88	352.33	43.88
Agricultural Research and Education (Total)	228.04	507.20	122.42	245.23	55.42	44.95
Forestry and Wild Life (Capital Account)	8.96	78.19	772.66	9.69	50.41	420.23
Forestry and Wild Life (Revenue Account)	314.08	884.69	181.68	337.49	610.09	80.77
Forestry and Wild Life (Total)	323.04	962.88	198.07	347.18	660.50	90.25
Medical and Public Health (Capital Account)	87.35	302.96	246.83	92.26	204.13	121.26
Medical and Public Health (Revenue Account)	1574.87	4203.69	166.92	1689.85	2885.90	70.78
Medical and Public Health (Total)	1662.22	4506.65	171.12	1782.11	3090.03	73.39
Police (Capital Account)	3.63	155.70	4189.26	3.71	105.24	2736.66
Police (Revenue Account)	1812.18	5304.65	192.72	1941.76	3666.12	88.80
Police (Total)	1815.81	5460.35	200.71	1945.47	3771.36	93.85
Power Projects (Capital Account)	709.72	1418.61	99.88	792.19	1000.46	26.29
Power Projects (Revenue Account)	1438.55	4559.07	216.92	1544.79	3153.02	104.11
Power Projects (Total)	2148.27	5977.68	178.26	2336.98	4153.48	77.73
Roads and Bridges (Capital Account)	640.44	2424.22	278.52	687.62	1700.37	147.28
Roads and Bridges (Revenue Account)	303.85	2958.33	873.62	323.13	2024.85	526.64
Roads and Bridges (Total)	944.29	5382.55	470.01	1010.75	3725.22	268.56
Soil and Water Conservation (Capital Account)	109.52	699.84	539.01	115.53	467.67	304.80
Soil and Water Conservation (Revenue Account)	60.77	32.99	-45.71	67.96	24.00	-64.69
Soil and Water Conservation (Total)	170.29	732.83	330.34	183.49	491.67	167.95
TOTAL -PUBLIC GOODS	7291.95	23530.12	222.69	7851.19	16247.69	106.95

N.B.: Real values have been created using GSDP deflator - 2004/05 series

The following salient points may be made with respect to Table A-3(b):

- (1) There is a substantial increase seen in the post-FRL period for every item in the table as compared to pre-FRL values. This is true in terms of real as well as nominal values.
- (2) Hence, even though in terms of ratios to GSDP, many items show a decrease in the post-FRL period, in absolute terms this has not been the case.
- (3) The fact that allocations in real terms have increased suggests that expenditures have more than kept pace with inflation.
- (4) The only exception to these comments is expenditure on Soil and Conservation (Revenue Account).
- (5) The picture that emerges from this table is that, in the post-FRL period, total expenditures have improved considerably. The question is, of course, whether this is enough.
- (6) We would like to believe that we should focus on the results of Table A-3(a) rather than Table A-3(b) to obtain a proper perspective on the situation that has emerged in the post-FRL period. As a geographical jurisdiction becomes richer - and there is no doubt that Maharashtra has become richer - the ratio of expenditures on public goods to GSDP should, at the very least, be maintained but, ideally, should be increased.

Table A-4(a). Share of Merit Goods in Revenue Account and Capital Account Expenditures

(% GSDP)

	Pre-FRL (Rev. Exp)	Post-FRL (Rev. Exp)	Pre-FRL (Cap. Exp)	Post-FRL (Cap. Exp)	Pre-FRL (Total Exp)	Post-FRL (Total Exp)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Education, Sports, Art and Culture	2.81	2.43	0.0022	0.02	2.81	2.45
Family Welfare	0.05	0.04	0.00	0.00	0.05	0.04
Labour and Labour Welfare	0.06	0.06	0.00	0.00	0.06	0.06
Nutrition	0.11	0.16	0.0000	0.0015	0.11	0.17
Relief on Account of Natural Calamities	0.08	0.23	0.00	0.00	0.08	0.23
Social Security and Welfare	0.16	0.18	0.0007	0.0031	0.16	0.19
Water Supply and Sanitation	0.25	0.13	0.0003	0.02	0.25	0.15
Welfare of S.C., S.T. and O.B.C.	0.28	0.46	0.02	0.06	0.29	0.52

NOTE: (1) Pre-FRL is the average for the period 2000-01 to 2004-05 and Post FRL is average for the period 2005-06 to 2014-15(RE)

Important pointers to emerge from Table A-4(a) are:

1. In case of Merit Goods the share of combined expenditure (revenue and capital account) shows a reduction in the post FRL period for two crucial components, viz., Education, Sports, Art and Culture and on Water Supply and Sanitation. For both these components the reduction is in the share allocated on revenue account. Family Welfare which has an allocation of only revenue expenditure too shows a reduction in its share of total expenditure in the post FRL period.
2. However, one can see an increased emphasis on Social Security and Welfare and Welfare of S.C., S.T. and O.B.C. This indicates that Merit Goods with significant welfare aspects have received greater allocations in the post-FRL period.
3. Table A-4(b) reports actual expenditures on items covered under Merit Goods.

Table A-4(b). Expenditure Allocation for Merit Goods

	(Rs. Crores)					
	Pre FRL	Post FRL	% Change	Pre FRL	Post FRL	% Change
	(Nominal)	(Nominal)	(Post-FRL over Pre-FRL)	(Real)	(Real)	(Post-FRL over Pre-FRL)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Education, Sports, Art and Culture (Capital Account)	7.33	163.12	2125.38	7.96	119.23	1397.86
Education, Sports, Art and Culture (Revenue Account)	9468.79	24578.16	159.57	10181.34	17042.71	67.39
Education, Sports, Art and Culture (Total)	9476.12	24741.28	161.09	10189.30	17161.94	68.43
Family Welfare (Revenue Account) @	163.85	437.21	66.83	177.37	306.24	72.66
Labour and Labour Welfare (Revenue Account) @	200.06	607.65	203.73	215.18	426.40	98.16
Nutrition (Capital Account)	0.00	15.64	#	0.00	9.87	#
Nutrition (Revenue Account)	382	1663.13	335.37	409.66	1133.15	176.61
Nutrition (Total)	382	1678.77	339.47	409.66	1143.02	179.02
Relief on Account of Natural Calamities (Revenue Account)@	276.27	2367.95	757.11	290.04	1582.30	445.55
Social Security and Welfare (Capital Account)	2.52	31.18	1137.30	2.70	21.20	685.19
Social Security and Welfare (Revenue Account)	536.03	1841.38	243.52	573.40	1262.97	120.26
Social Security and Welfare (Total)	538.55	1872.56	247.70	576.10	1284.17	122.91
Water Supply and Sanitation (Capital Account)	1.13	183.16	16108.85	1.24	129.25	10323.39
Water Supply and Sanitation (Revenue Account)	843.49	1286.48	52.52	898.30	959.52	6.82
Water Supply and Sanitation (Total)	844.62	1469.64	74.00	899.54	1088.77	21.04
Welfare of SC, ST and OBC (Capital Account)	53.74	605.95	1027.56	56.02	427.18	662.55
Welfare of SC, ST and OBC (Revenue Account)	939.14	4632.41	393.26	999.61	3167.61	216.88
Welfare of SC, ST and OBC (Total)	992.88	5238.36	427.59	1055.63	3594.79	240.54
TOTAL - MERIT GOODS	12874.36	38413.40	198.37	13812.82	26587.64	92.49

NOTE:

- (1) Pre-FRL is the average for the period 2000-01 to 2004-05 and Post FRL is average for the period 2005-06 to 2014-15(RE)
- (2) Real values have been created using GSDP deflator - 2004/05 series
- (3) @ indicates that these budget have zero or negligible capital account allocations
- (4) # indicates that it was not possible to compute percentage change due to zero values in the pre-FRL period.

The following salient points that may be made with respect to Table A-4(b) are similar to those made with respect to Public Goods:

- (1) There is a substantial increase - in both nominal and real terms - for every item in the post-FRL period as compared to pre-FRL values.
- (2) Even though in terms of ratios to GSDP, some items show a decrease in the post-FRL period, in absolute terms this has not been the case.
- (3) The fact that allocations in real terms have increased suggests that expenditures have more than kept pace with inflation.

ADOPTION OF A DEMAND-CENTRIC APPROACH TO UNDERSTAND HOUSING ISSUES IN MUMBAI*

Vidya Anand
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A key challenge confronting Mumbai city is the provision of affordable housing. Several steps have been taken to tackle the different issues related to availability and affordability of housing in Mumbai, but all these issues have been looked at largely, if not entirely, from the supply side. Solutions like rehabilitation of slum dwellers, public housing schemes and so forth, show very limited understanding of consumer behaviour regarding housing. This study is an attempt to understand housing in Mumbai from a demand side perspective. This is done by the use of methodology of the stated choice. A popular technique for estimating the stated choice preference model is conjoint analysis. In this paper, we use conjoint analysis to understand key housing preference drivers for various socio-economic classes in Mumbai. Our study area is the suburban parts of the Greater Mumbai Municipal Corporation. The key findings of this study are that people across socio-economic strata show strong willingness to remain not only within the Corporation limits but also within their suburb. Lower socio-economic classes are highly sensitive regarding the ease of access to markets, whereas the size of the house is perceived to be a luxury. The lowest socio-economic class has a strong desire to move out of slums to "pucca houses", i.e., residences relatively more solid and durable. Accessibility to basic services appears to be the major driving force in the choice of housing location for the urban poor. Also, we infer that there is a need to integrate transportation in housing policy and vice versa.

Keywords

Affordable Housing, Urban Poor, Greater Mumbai Region, Demand Drivers, Greater Mumbai, SEC (Socio-economic classification)

1. BACKGROUND

Mumbai is recognised for its contribution to cosmopolitan culture and a range of assorted housing. As regards housing, Mumbai appears to be the most challenging metropolis in India as it is among the most expensive metropolitan centers in the world. It is said that people belonging to households in the Middle Income Group (MIG), which constitutes a significant proportion of the population, stay nearly forty-five km away from the Central Business District, in areas that have poor connectivity and scant infrastructure [Knight Frank, 2009].

The institutional structure has had a very strong influence on movements in price of home.

Land markets do not exist in a real sense and a plethora of regulations govern the supply of land. Laws enacted during World War II, like for rent control, still exist. The Mumbai Rent Control Act was introduced in 1947 to freeze rents at 1940 levels and protect the rights of tenants against evictions. These provisions had a negative impact on private investments in rental housing and adversely affected property tax collection. The Rent Control Act was revised in 1986 and later in 1993, but the revisions are applicable only to new constructions [Tiwari and Hasegawa, 2000].

On a similar note, the Urban Land (Ceiling & Regulation) Act of 1976 sought to control land speculation and to achieve a more equitable distribution of land by putting a ceiling of five

* The paper draws its material heavily from the work of Mohite (2012)
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hundred square meters on vacant urban land that could be held under private ownership. All the land in excess of this ceiling was supposed to be handed over to the government which could use it for housing the poor. In case of Mumbai, some of the major owners of vast stretches of vacant land are charitable trusts of big industrialists and businessmen. The Act was often by-passed by using the 'exemption clause' through manipulation and getting permission from the Corporation to build, leading to a total defeat of the stated objectives of the Act [Jha, 1986]. These restrictions actually reduced the supply of formal land [Risbud, 2003].

These institutional regulations, coupled with the fact that Mumbai was the major income and employment generating hub of India, thereby attracting extensive migration, led to a proliferation of illegal structures such as slums and shanties. This was particularly so since housing supply by public agencies has been far below the requirement and that by the private sector was beyond the reach of the poor. The deterioration in housing conditions in Mumbai can be gauged by the fact that seventy-three per cent of households in 1991, compared to 69 per cent in 1981, lived in one-room tenements [GOM, 1995]. Further, rental markets were locked, and as such, the only option for many low-income families was to encroach on public and private open lands and build structures, which they could afford [BMRDA, 1994].

Several steps have been taken to tackle the different issues related to availability and affordability of housing in Mumbai, but all these issues have been looked at largely, if not entirely, from the supply side. More particularly, housing is viewed purely as a dwelling unit providing only shelter. Solutions like rehabilitation of slum dwellers, public housing schemes, and so forth, have very limited understanding of consumer behavior and needs regarding housing. Merely providing a number of dwelling units is a narrow

approach adopted by the policy makers thus far. In the international housing literature, more emphasis is given on conceptual understanding of housing as a commodity possessing several attributes other than shelter. In particular, a 'slum' has been defined as a dwelling unit which yields less than some arbitrary quantity of housing service per time period [Olsen, 1969, Pp. 612-622]. A demand-centric view towards housing will enable us to understand the housing situation more holistically. This would then be welfare oriented, getting closer to providing what people truly desire, thereby maximising their utility. A key requirement for adopting a demand centric approach is to understand housing demand which, in turn, requires understanding of housing preferences. When one tries to understand housing preferences, it is necessary to view a house as a bundle of attributes providing not only shelter but also access to various public services, an avenue from which the community could network socially with the outside world.

This study is an attempt to understand housing in Mumbai from the demand side. An approach to achieve this is by use of the methodology of stated choice. A popular technique for estimating the stated choice preference model is conjoint analysis. In this paper, we use conjoint analysis to understand key housing preference drivers for various socio-economic classes in Mumbai. Our study area is the suburban part of the Greater Mumbai Municipal Corporation (henceforth to be referred to as the study area). The rationale behind choosing this specific study area was that the property rates in the main "island city" of Mumbai are exorbitant and out of reach of most middle and lower income groups, which are the focus groups of our study. Population is stratified into various socio-economic segments and for each segment, a stated choice model of housing preference is estimated using Conjoint Analysis. The model would enable us to determine the "ideal house", i.e., that combination of the levels of

housing attributes most preferred by the concerned socio-economic class. This, in turn, would provide guidelines to policy makers and builders alike to design and develop policies and buildings which truly reflect community preferences. A methodological departure in this paper is omission of price attribute in any explicit form in the conjoint analysis model.

The next Section briefly reviews the theoretical literature and empirical estimation of housing preferences. Section 3 spells out the analytical model. Section 4 explains the sampling design, the data collection as also details of the conjoint analysis modeling. In Section 5, the major empirical findings and interpretations from the conjoint analysis models are presented. Finally, observations on the housing scenario in Mumbai, when viewed from a demand side perspective, are presented as concluding remarks.

2. THEORETICAL FRAMEWORK FOR ESTIMATING HOUSING DEMAND

The literature on housing demand in the international context reveals a perceptual shift in the estimation of housing demand. The neo-classical economic theory of consumer choice was applied to housing [Muth, 1960 and Olsen, 1969] within the framework laid down by the neoclassical assumptions. Muth [1960] developed a theory of the competitive housing market. He made possible the translation of some of the idiosyncratic concepts used by housing specialists into the familiar terms of microeconomic theory. Olsen [1969] further simplified the crucial assumptions and viewed the market for housing services as a competitive market in which a homogeneous good is sold. According to Charles [1977], houses are assets which are demanded for the flow of services they produce over their lifetime. These are bought either by buying the asset itself or by renting it. Therefore, the demand for housing, both rental as well as owned, is derived. Housing can be viewed as a diverse bundle of services associated with shelter and

comfort, independence and privacy. Likewise, housing is also associated with status and, like all durables, services in the nature of a security and investment. Thus, the choice between renting and owning, and between different types of houses is linked to the utility assigned to each housing service by households.

During the late 1980's, significant literature on the economics of housing and housing markets came up with the need for the development of a theoretical framework different from the neo-classical economics. This was due to the duality related to housing in terms of it being a consumption as well as an investment good, and the imperfect and non-competitive features of the housing market. Smith, et. al., [1988, Pp. 29-64] strongly emphasised housing as a unique commodity with special characteristics like durability, spatial fixity and heterogeneity, rather than assuming housing as a homogeneous entity. Charles [1977] maintained that ability to buy housing services in varying combinations and to various degrees (for example shelter services vary from the basic necessity for protection from elements, to 'luxury' levels) implies that housing is a heterogeneous commodity. Megbolugbe, et.al., [1991, Pp. 381-393] note that assessing housing demand was a difficult task for housing analysts since restrictive modeling of housing demand determinants was considered to be a limitation of the existing theory. Several papers which reviewed the empirical literature based on neoclassical housing economics [Leeuw 1971 Pp. 1-10; Smith, et al., 1988] revealed the narrow focus of the neoclassical modeling of housing demand. These reviews concentrated on measurement issues about housing demand determinants, mainly factors related to price and income. The incorporation of information about consumer attitudes, preferences and perceptions into economic models of housing demand is critical for a complete understanding of the behavior relating to housing consumption. In the estimation of demand for housing, the determinants were

principally income, price and taste. Because of the difficulty in constructing the quantifiable indicators of taste, household demographic characteristics were used as proxy of taste factors on housing consumption. Later, housing characteristics were included in housing demand models on the ground that they influence effective price of housing to the consumer.

A major limitation of the neoclassical analysis of housing markets was its inherent heterogeneity. In an attempt to account for this, the housing commodity was viewed in terms of characteristics or "hedonic terms" [Witte et al, 1979, Pp. 1151-1174]. Here, the dwelling unit is conceptualised not as a homogeneous, composite good but as a bundle of individual attributes, each of which contributes to the provision of one or more housing services.

From a review of the literature on modeling of housing preferences, we found three major approaches used, viz., hedonic pricing, Analytical Hierarchy Process (AHP) and conjoint analysis. Though the hedonic approach could be used to estimate the marginal values of attributes, it is found to be relatively difficult to model and implement when price data is either non-existent or not easily forthcoming, as is the situation in the case of the housing scenario in Mumbai city. Also, this may require explicit monetary transactions to have taken place. The AHP is widely used when there are choice alternatives and attributes based on which these alternatives are chosen. A key limitation of AHP is that it is not amenable to statistical inference, i.e., it is not possible to generalise sample based results to the entire population due to which it could suffer from external validity problems. Conjoint Analysis is an experiment-based tool used mainly for concept-testing or new product launch in marketing. Data for conjoint analysis are generated through a survey in which respondents are asked to rate or rank products with alternative levels of important characteristics. Trade-offs between

characteristics can be studied including wider variation in relevant variables than might be observed in actual field data [Tano et. al., 2002]. In other words, conjoint analysis provides for hypothetical scenarios and does not necessarily require price information. Since we do not have transactions related data, the use of conjoint analysis minimises the probability of results being adversely affected when non-price attributes are included. This is mainly because housing preferences are measured directly using conjoint analysis. We now turn to a brief description of conjoint analysis.

Overview of Conjoint Analysis

Conjoint analysis is a method developed over the past fifty years by market researchers and statisticians to predict the kinds of decisions consumers will make about products by using a survey questionnaire. It is assumed that in any purchase decision consumers evaluate different characteristics of a product and by making tradeoffs, decide which product attributes are more important to them. The technique is based on the assumption that complex decisions are based not on a single factor or criterion but on several factors considered jointly, and hence, the term conjoint [Johnson, 1974, Pp. 121-27]. Conjoint analysis is also referred to as Discrete Choice Modeling or Stated Preference Research which enables the investigator to better understand the interrelationships of multiple factors as they contribute to preferences.

The conceptual foundation of conjoint analysis arises from the theory of consumer behavior developed by Lancaster [1966 Pp. 132-57; 1991], which assumes that utility is derived from the properties or characteristics of goods [Ratchford, 1975, Pp. 65-75]. A significant assumption is that the overall utility for a good can be decomposed into separate utilities for its constituent characteristics or benefits [Louviere, 1994].

In conjoint analysis, a product or service is described by two or more features, referred to as 'attributes'. Each attribute, in turn, must be represented by two or more levels. If the factor is originally metric, it must be reduced to a small number of non-metric levels. For example, the many possible values of house size may be represented by a small number of levels: house size (400 sq.ft, 600 sq.ft, 800 sq.ft.). If the factor is non-metric, the original values can be used as in these examples: availability of parking space ("available" or "not available"); or Access to the Railway Station ("10 min walkable distance" or "Need to use bus/rickshaw"). Conjoint analysis considers these attribute and levels of description of products or services by asking people to make a number of choices between different products. It is possible to work out numerically (from the responses) how valuable each of the levels is relative to the others around it. This value is known as the "part-worth utility" of the level. It is also possible to compare across attributes to see which attributes have the greatest impact in consumer choice making. Part-worth utilities are calculated using either multiple regression with dummy variables, Analysis of Variance (ANOVA) or variants of multinomial logit models. The model could be additive or interactive and the type of part-worth relationships could be linear or non-linear.

In our study, we used the additive variant of the conjoint model thereby estimating only main effects and ignoring interaction effects. In other words, we estimate only the stand alone effects of attributes on housing preferences and ignore effects of attribute combinations on housing preferences. The analytical model used in this study to understand housing preferences follows.

3. THE ANALYTICAL MODEL

In our model, we treat housing as a heterogeneous commodity. The demand for housing is interpreted as the demand for housing services as well as demand for housing stock. We are

defining a house as a bundle of housing services where the investment nature of this good is looked upon as one of the housing services yielded by a house. Therefore, the focus of our study will be restricted to the house ownership market.

We have used a combination of qualitative and empirical research methods in our study. Starting with qualitative research (focus groups, in-depth interviews), we generated housing preference drivers, which, in turn, served as inputs for the empirical modeling (conjoint analysis). The basic unit of analysis was the household. Different socio-economic sections of the population were covered to reflect their different housing preferences and their income categories. In our pilot surveys, we discovered that people were reluctant to reveal their true income. Hence, we stratified the population based on the Socio-economic Classification (SEC). The SEC approach has been adopted by various marketing research agencies as a stratification technique [Businessworld, 2009]. The intuitive idea behind SEC is as follows: Urban Indian households are classified on the basis of education and occupation of the Chief Wage Earner (CWE), i.e., the person who contributes the most to expenses of the household. Accordingly, the population is divided into five distinct segments, viz., SEC A, SEC B, SEC C, SEC D and SEC E.¹

This classification is more stable than the one based on income alone being reflective of lifestyle that is more relevant to the examination of consumption behaviour. We considered four broad categorisation of SECs, viz., B, C, D and E (subcategories such as B1 and B2 were clubbed into a B category and so forth). This was primarily because our objective was to get a better understanding of housing issues of middle and lower income classes. Here, SEC B corresponds to the higher income groups, colloquially referred to as "upper middle class", SEC C refers to the middle

class and SECs D&E refer to the lower income groups. The SEC matrix is presented for reference in Annexure 1.

We conducted Focus Group Discussions (FGDs) with various socio-economic consumer groups in different parts of Mumbai. These FGDs were conducted predominantly among those households who had shifted to a new location. The idea behind doing this was that these people would have deliberated on various housing related aspects prior to purchasing a new house and hence would be in a better position to articulate their views. We ensured that the whole family was present during the FGDs to accurately capture various facets of the decision making process. In addition to FGDs, we conducted in depth interviews of house brokers as well. From them we received useful expert inputs regarding housing preferences of various SEC groups.

Following the FGDs and the in depth interviews, we performed a content analysis of the findings. This essentially involved sifting out the key issues and key attributes. For each SEC, we isolated about twenty attributes which potentially influenced their housing decisions. We then prepared a second list of sixteen potentially key attributes for each SEC group for final short listing. This was done to ensure that the conjoint analysis model we would subsequently estimate is tractable. We then asked select members of each SEC to rate these attributes on a scale of one to ten, ten indicating highest level of preference. After aggregating the rating, we managed to isolate key attributes for each SEC. The next step was to determine the levels associated with each factor. Once again, we used our exploratory research work as a guideline to assign various levels to the attributes. The list of attributes along with their levels which entered into the conjoint models for each SEC is given in Annexure 2. For example, attributes such as 'regional preference', i.e., geographical location of the particular house was common to all SECs whereas, attributes like

'water supply' did not feature in the conjoint model for SEC E. This was because water supply did not appear to be a potentially significant housing preference driver for SEC E in our exploratory surveys.

It would be pertinent to mention here that we have omitted the price related attribute. We observed during the qualitative research phase that the price factor clouds respondents' perception about their house and inhibits their thought process. At the mention of price or price levels, they usually got cynical and often lost interest in the survey. A reason for this is possibly the unrealistically exorbitant real estate rates in Mumbai as a result of several economic distortions. In addition, we have incorporated ability-to-pay attributes such as monthly maintenance expenditure (for SEC B, C and D) and monthly expenditure associated with house (for SEC E). Possibly, even the attribute "house size" could be construed as an ability to pay variable as was evident while piloting the conjoint instrument.

4. SAMPLING DESIGN AND DESIGN OF THE CONJOINT EXPERIMENT

The unit of analysis was the household. The population of suburban districts of GMR as per results of Census 2001 was 8.64 million. Prior to finalising the sampling design we consciously decided to exclude SEC A from our study. This was predominantly because SEC A represents the affluent sections of society while our study focused on housing issues of the middle classes and the urban poor. Thus we felt it pertinent to use the relatively scarce resources at our disposal to understand housing preferences of SECs B, C, D and E.

The population of study area was stratified in terms of SEC groups B, C, D and E. It was decided to sample around 100 respondents per SEC. For sampling convenience as well as to control for geographical variation we split the study area into

eight clusters. The clusters were created based on geographical proximity. Sample sizes across the clusters were equally distributed.

After firming the sampling design, we finalised the experimental design using the design recommended by Louviere et al [2007] as detailed below.

As mentioned in the earlier Section, housing was viewed as a multi-attribute commodity with at least two levels in each and hence we looked at a factorial experimental design. If we take any SEC, say SEC B as an example, there were eight factors with two levels per factor and the remaining two had three levels each. A full-factorial experiment would have thus meant administering a total of $2304(2^8 \times 3^2)$ profiles per household. We encounter similar issues for other SEC groups as well if we use full factorial design. Since these numbers were large, we resorted to a fractional factorial design. We drew an orthogonal subset of 35 profiles for each SEC using software R and decided to administer seven profiles per respondent. Accordingly, these 35 profiles were randomly grouped into five sets of seven profiles per group. These sets were then randomised across the total number of respondents for each SEC. The rationale behind this was to minimise the boredom and fatigue that could creep in during the survey.

The next step was designing the survey instrument. As per the requirements of conjoint analysis, a respondent had to evaluate house profiles. A typical "house profile" could be real, i.e., something which the respondent might associate or have experienced or it could be hypothetical. We found that administering such an instrument to respondents was a relatively challenging task. This was because the potential respondents were likely to have varying levels of awareness and communication. Also; a particular attribute could convey different meanings to different respondents, thereby causing responses

to be unreliable. Thus the instrument had to be standardised without compromising on simplicity. We preferred to use ratings for various profiles rather than rankings, as this was found to be simpler for respondents (as was revealed during our pilot surveys). Each profile was rated on a five - point scale-with scores closer to five indicating a higher level of preference. Each respondent was shown seven profiles. Before surveying, a respondent was briefed about the objective of the survey and what was expected of him/her. Rather than confusing the respondent with numerical scales, we used visual methods indicating a level of satisfaction to elicit profile ratings. If a respondent was relatively satisfied with a profile, s/he would choose one, out of five profiles, their facial expressions; indicating a relatively happy situation, which could be translated into a numerical rating of say, four or five. On the contrary, a relatively unsatisfactory profile would mean choosing a profile with a frown on its face, rating of one or two or even three, which signified relative ambiguity of the profile. In order to ensure maximal understanding of the survey instruments, we translated the profiles into the predominantly spoken local language, Marathi. Once again, in order to ensure consistency across responses, surveyors implementing the conjoint instrument to respondents were thoroughly trained. A number of pilot surveys were undertaken before commencing the actual survey to test the robustness of the instrument as also to ascertain the understanding and comfort level of the respondents during the process of interviews. This was also done to minimise the bias due to surveyor effects while administering the instrument.

In the context of our study housing preference ratings on a five -point scale are ordinal variables. Thus we used the ordered probit version of ordinal regression to estimate the conjoint model for housing preferences. We report housing preferences of SECs based on a household survey in the following session.

5. EMPIRICAL FINDINGS

Conjoint analysis gives us estimates of part worth utilities associated with various attributes related to housing. The sum of the part worth utilities gives us the total utility associated with a house. Since each SEC had a separate total utility function for housing, separate models were estimated for each SEC. The models were estimated using the iterative maximum likelihood procedure for ordered probit in LIMDEP software. The rating that respondents gave to the profiles to express their overall preference for a house profile was the dependent variable while

the independent variables were the levels related to various housing attributes relevant for the particular SEC. In order to verify the overall robustness of the models as well as those of the individual attributes, we subjected the models to some statistical tests. The overall significance of the models is assessed using the Likelihood Ratio (LR) statistic, which is distributed as a chi-square. The significance of the individual parameters is assessed using the p-value which is an alternative way to assess individual significance of estimates in maximum likelihood estimation.

Table 1. Model Diagnostics for All SECs

Particulars	SEC B	SEC C	SEC D	SEC E
(1)	(2)	(3)	(4)	(5)
Log likelihood function	-1116.223	-990.5380	-1061.185	-998.3619
Restricted log likelihood	-1251.214	-1093.863	-1186.975	-1111.164
Chi-squared	269.9805	206.6509	251.5786	225.6048
Degrees of freedom	10	10	10	8
Significance level	0.0000000	0.0000000	0.0000000	0.0000000

Table 1 presents model diagnostics for for all SECs are statistically significant as housing preference models for SECs B, C, D per the chi-square value generated from the and E. It can be seen that the utility model likelihood ratio test.

Table 2a. Parameter Estimates for SEC B Model

Attribute	Coefficient	p value
(1)	(2)	(3)
Constant	2.623	0.000
Regional Preference	-0.737	0.000
House Size	0.0005	0.031
Access to the Railway Station	-0.295	0.000
Access to School	-0.389	0.000
Access to Market	-0.361	0.000
Place	-0.244	0.002
Neighborhood	-0.166	0.032
Water Supply	-0.559	0.000
Parking Space	-0.349	0.000
Maintenance Charges	-0.0005	0.000

Table 2a presents estimates of housing preference model for SEC B. All the estimated coefficients are statistically significant at the 1% level of significance, with the exception of house size and neighbourhood, which are significant at the 5% level of significance. The coefficients also have the expected signs, especially for the attributes measured at the interval level such as house size and maintenance charges.

The range of the utility values (highest to

lowest) for each factor provides a measure of how important the factor was to overall preference. Factors with greater utility ranges play a more significant role than those with smaller ranges. We obtain a measure of the relative importance score or value. The values are computed by taking the utility range for each factor separately and dividing by the sum of the utility ranges for all factors. The values thus represent percentages and hence sum to 100.

Table 2b. Relative Importance of the Housing Attributes for SEC B

Sr.No.	Attribute	Relative Importance (in %)	Ranking
(1)	(2)	(3)	(4)
1	Regional Preference	19.36	1
2	Maintenance charges	14.64	2
3	Water supply	14.42	3
4	Access to School	9.79	4
5	Access to market	9.77	5
6	Parking space	9.37	6
7	Access to Railway Station	7.73	7
8	Place	6.26	8
9	House Size	4.39	9
10	Neighbourhood	4.26	10
	Total	100	

Relative Importance of housing attributes for SEC B is given in Table 2b. It can be seen that respondents from SEC B display a relatively strong inclination to remain in GMR in general and their suburb in particular. Maintenance charges occupy second place indicating that even in this relatively higher income group, there is reluctance to pay higher maintenance amounts. Water supply comes third, thereby indicating that this variable too is a prominent driver in choice

of housing locations. The access to school and market attributes show an almost equal priority weight. The attribute which occupies the sixth place is availability of parking space and not access to railway station as one might have intuitively expected, which occupies the seventh space. The location of the house, i.e., whether it is at a relatively quieter place, the size of the house and the kind of neighbors occupy the eighth, ninth and tenth position respectively.

Table 3a. Parameter Estimates for SEC C Model

Attribute	Coefficient	p value
(1)	(2)	(3)
Constant	2.424	0.000
Regional Preference	-0.873	0.000
House Size	0.002	0.000
Maintenance Charges	-0.001	0.005
Access to the Railway Station	-0.360	0.000
Access to School	-0.335	0.000
Access to Market	-0.412	0.000
Place	-0.365	0.000
Neighborhood	-0.026	0.749*
Water Supply	0.124	0.129*
Parking Space	-0.448	0.000

Table 3a presents model estimates for SEC C. We can see that the attributes related to nature of location of the house and water supply are not statistically significant even at the 10% level of significance, indicating that these do not significantly influence house choice. The rest of the

attributes are statistically significant at the 1% level of significance. There is a preference for being within GMR relative to shifting to any other location. The rest of the attributes have the same intuitive interpretation as in the case of SEC B.

Table 3b. Relative Importance of the Housing Attributes for SEC C

Sr.No.	Attribute	Relative Importance (in %)	Ranking
(1)	(2)	(3)	(4)
1	Regional Preference	25.22	1
2	Parking Space	12.94	2
3	House Size	12.61	3
4	Access to Market	11.91	4
5	Neighbourhood	10.54	5
6	Access to the Railway Station	10.41	6
7	Access to School	9.69	7
8	Maintenance Charges	6.68	8
	Total	100.00	

Table 3b provides the relative importance of attributes for SEC C. The results appear slightly more counter intuitive as compared to the case of SEC B. The strong desire to remain in their familiar territory of GMR occupies a top position with a weight of more than 25%. Availability of parking space and size of the house have virtually the same relative weights. SEC C, one can venture to say, is the typical Indian middle class. Due to the vibrant growth of the Indian economy, this is

now an upwardly mobile class with increasing consumerist aspirations. Also their recent prosperity has enabled them to aspire for bigger houses, something which might have been impossible for them few years ago. The fourth place is occupied by the access to market attribute. If we combine this result with our qualitative observations, we find that for SEC C, the market is not just about procuring commodities for household consumption but also linked to their

livelihoods. Many of these people are self-employed and hence they would like to base themselves as close to the market as possible. The fifth place is taken by the neighbourhood attribute indicating that this class is also conscious about the relative homogeneity of its neighbours. Maintenance charge attribute occupies the eighth place. While this appears counter intuitive, when one views this in tandem with the statistical

significance of the location attribute, the picture becomes clearer. Households in this class are looking for houses providing only the basic facilities and do not care much for factors like ambience. Hence, low maintenance costs may be taken for granted by this class. On the whole, one can sense a certain kind of "churn" happening in SEC C and hence perhaps the haziness in their choice-making patterns.

Table 4a. Parameter Estimates for SEC D Model

Attribute	Coefficient	p value
(1)	(2)	(3)
Constant	2.041	0.000
Regional Preference	-0.761	0.000
House Size	0.002	0.000
Maintenance Charges	-0.001	0.000
Neighborhood	-0.162	0.049
Access to the Railway Station	-0.368	0.000
Access to School	-0.424	0.000
Access to Market	-0.544	0.000
Place	-0.119	0.171*
Water Supply	0.198	0.367*
Parking Space	-0.472	0.033

Table 4a provides model estimates for SEC D. We see that the attributes related to water supply and location of house is statistically insignificant at even the 10% level of significance. The rest of the attributes are significant with the expected signs.

Table 4b below contains relative importance of attributes of SEC D. SEC D can be construed as the relatively better off among the lower income segments. Once again they display a strong preference to remain in GMR. Since many in this SEC are self-employed in the category of plumbers, carpenters, petty traders and so forth, they attached a high priority for ease of access to markets. Also their travel patterns, by and large was within their suburb and hence the relatively

lower priority for access to a railway station. However, they accord a higher level of priority to proximity of their children's school.

Many in this category live presently in slums. They own two wheelers and many among them drive auto rickshaws for earning their livelihood. Hence, safety of their vehicles is an issue of utmost concern. This is possibly the reason why availability of parking space occupies the second place. A clear demarcation from SEC D can be seen by the assignment of a relatively lower priority to size of the house. Though statistically significant, this attribute is something they seem to perceive as a luxury unlike access to markets, or safety of their vehicles, which are perceived as necessities. However, similar to SEC C, maintenance charge has a relatively lower priority.

Table 4b. Relative Importance of the Housing Attributes for SEC D

Sr.No.	Attribute	Relative Importance (in %)	Ranking
(1)	(2)	(3)	(4)
1	Regional Preference	22.39	1
2	Access to Market	15.99	2
3	Parking Space	13.88	3
4	Access to School	12.46	4
5	House Size	10.86	5
6	Access to the Railway Station	10.83	6
7	Maintenance Charges	8.82	7
8	Neighbourhood	4.77	8
	Total	100.00	

Table 5a below provides model estimates for SEC E. We see that other attribute levels remaining the same, there is no difference in the effect on overall utility irrespective of whether the housing related monthly expenditure decreases or remains at the current level. However, there is a disutility associated with increase in monthly expenditure *vis-à-vis* the current level. Again a

G+ house yields a relative disutility as compared to a 320 square feet house at the 10% level of significance. A chawl type house is viewed adversely compared to a 320 square feet house. The access parameters are all statistically significant, while the attribute related to kind of neighbourhood is significant only at the 10% level of significance.

Table 5a. Parameter Estimates for SEC E Model

Attribute	Coefficient	p value
(1)	(2)	(3)
Constant	2.178	0.000
Regional Preference	-0.838	0.000
Chawl Type	-0.513	0.000
G+House	-0.174	0.086**
Monthly Expenditure same	-0.113	0.259
Monthly Expenditure increases	-0.380	0.000
Neighborhood	-0.159	0.056
Access to the Railway Station	-0.668	0.000
Access to School	-0.533	0.000

Table 5b below contains relative importance of attributes for SEC E. This class constitutes the lowest socio-economic group across GMR.

Again it conforms to the other groups' top ranking attribute with a strong preference to be within GMR.

Table 5b. Relative Importance of the Housing Attributes for SEC E

Sr.No.	Attribute	Relative Importance (in %)	Ranking
(1)	(2)	(3)	(4)
1	Regional Preference	27.12	1
2	Access to the Railway Station	21.61	2
3	Access to School	17.24	3
4	House Type	16.58	4
5	Monthly Expenditure	12.29	5
6	Neighbourhood	5.16	6
	Total	100.00	

Access to a railway station occupies the second place. Persons belonging to SEC E are mostly unskilled workers with low education background. They are often daily wage workers who travel to different places within Mumbai city. Thus they assign a high weight to this attribute. For this SEC, access to markets did not figure among the important house choice drivers due to which we did not include it in the analytical model. Like SEC D, access to school gets a relatively higher weight. Persons from SEC D assign a relatively higher weight to house type perhaps indicating a desire to move out of slums to "pucca houses". Again the attribute related to the kind of neighbourhood gets the lowest priority. It can therefore be inferred that for the lower income groups, accessibility to essential services seems to be the major driving force in choice of housing location.

5. CONCLUDING REMARKS

* A common finding across SECs was inertia, i.e., a strong preference to stay not just within GMR, but also within their suburbs. In other words, residing in Mumbai city was viewed as an asset in itself for which people were quite reluctant to make any tradeoffs with other attributes.

* It appears as though consumers belonging to SECs other than SEC B subsume maintenance cost while deciding house purchase. Thus, the notion of affordable housing should be viewed as one where not only the purchase price, but also the low sustenance cost of the house.

* Attributes related to water supply, location of the house and its neighbourhood are either statistically insignificant or get relatively lower priority for the lower SECs, viz., C, D and E. Perhaps, one could interpret this as a utilitarian way of living by various SECs of GMR. This could also be viewed as acclimatising themselves to the current realities of GMR, i.e., scarcity of basic amenities.

* The SECs identified as urban poor, viz., SEC D and E show similarities as well as marked differences. While SEC D, comprising largely of skilled labour attaches greater value to proximity to market attribute, SEC E prioritises proximity to railway station. They do not merely want a lower priced house but one associated with lower transport costs as well. This is mainly so because SEC E, comprising of unskilled labour, requires to commute to various parts of Mumbai city. Also, SEC E seems to have a high priority for ease of access to school,

which could indicate the increasing importance assigned to education of children by the urban poor.

- * Families in SEC E seem to indicate a desire to move out of the slums they currently find themselves in. This can be seen from the relatively higher weight to house-type attribute in the conjoint analysis model output. However, they also appear to be aware of the potential tradeoffs they have to make for this to be possible. That is probably why house-type attribute gets the fourth rank from SEC E families. They just want a *pucca* house which is legally registered.
- * Even in instances where housing construction companies have come up with so called "affordable housing projects", they are located in far flung areas such as Palghar, Virar etc, which violate the basic premise of housing preference pattern, i.e., location inertia. This further emphasises the supply-centric view adopted towards affordable housing and raises serious questions about the way affordability is understood by stakeholders belonging to the supply side of housing.
- * It is high time policy makers realised that housing and transport are complementary

commodities. Hence, there is a need to integrate transportation in housing policy and vice versa. Otherwise, there is a threat of slum dwellers renting out or selling their rehabilitated houses purely due to lack of access to employment and basic services. This is likely to defeat most policy measures.

* In case of GMR, there seems to be a bias in housing policies towards the higher income group, i.e., SEC A. It is presumed that there is a demand for fringe benefits such as ambience, swimming pools, clubhouse etc. Our model does not indicate this for any of the SECs studied. Our study substantiates the view that it is wrong to relocate the urban poor, especially to remote locations. Given that each SEC displays certain idiosyncratic features, it is imperative that housing finance companies should introduce targeted housing loan products by taking such market segmentation into account. Merely classifying the population as belonging to the formal or informal sector is inadequate.

Education	1	2	3	4	5	6	7	8
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ANNEXURE 1
Urban SEC Classification Based on Education and Occupation of CWE

Occupation	Literate	Literate but no for- mal schooling	School upto 4th standard	School 5th to 9th Standard	SSC/HSC	Some college but not graduation	Graduate/ Post Graduate General	Graduate/ Post Graduate professional
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Unskilled Worker	E2	E2	E2	E1	D	D	D	D
Skilled Worker	E2	E1	E1	D	C	C	B2	B2
Petty Trader	E2	D	D	D	C	C	B2	B2
Shop Owner	D	D	D	C	B2	B1	A2	A2
Businessman with no Employees	D	C	C	B2	B1	A2	A2	A1
Industrialist with 1-9 No of Employees	C	B2	B2	B2	B1	A2	A1	A1
Industrialist with More than 10 Employees	B1	B1	B1	A2	A2	A1	A1	A1
Self Employed Pro- fessional	D	D	D	D	B2	B1	A2	A1
Clerical/Salesman	D	D	D	D	C	B2	B1	B1
Supervisory Level	D	D	D	C	C	B2	B1	A2
Officers/Executives -Junior	C	C	C	C	B2	B1	A2	A2
Officers/Executives -Middle/Senior	B1	B1	B1	B1	B1	A2	A1	A1

Source: Marketing White book-Businessworld (2009)

ANNEXURE 2
Attributes and Levels used in the Conjoint Model

Sr.No	Attribute & Explanation given in bracket	Levels of Attributes			SEC for Which Attribute is Relevant
1.	Regional Preference (Geographical location of the particular house)	1. House is in same suburb of Mumbai 2. House is outside of Mumbai			All SECs
2.	House size (The carpet area of the house in sq.ft.)	For SEC B 400 600 800	For SEC C 350 450 550	For SEC D 225 320 400	SEC B, SEC C, SEC D
3.	Access to the Railway Station (Distance of the railway station from the house)	1. 10 min walk able distance 2. Need to use bus/rickshaw			All SECs
4.	Access to School (Distance of the school from the house)	1. 10 min walk able distance 2. Need to use bus/rickshaw			All SECs
5.	Access to Market (Distance of the market from the house)	1. 10 min walk able distance 2. Need to use bus/rickshaw			All SECs
6.	Place (Location of the house)	1. at a quieter area 2. close to main road			SEC B SEC C SEC D
7.	Neighbourhood (People staying in the vicinity of your house)	1. People like you (income wise, religion wise, language wise, etc) 2. People different from you			All SECs
Sr.No	Attribute & Explanation given in bracket	Levels of Attributes			SEC for Which Attribute is Relevant
8.	Water Supply (Availability of water in a pipe for given hours)	For SEC B 1. For 24 hours 2. For 1 hour at morning and 1 hour at night	For SEC C and D 1. For 1 hour at morning and 1 hr at night 2. For 2 hours at morning and 2 hours at night		SEC B SEC C SEC D
9.	Parking Space (Availability of parking space)	1. Available 2. Not Available			SEC B SEC C SEC D
10.	Maintenance Charges (This consists of security charges, water bill, house tax etc. in Rs.)	SEC B 1. 1000/- 2. 2000/-	SEC C 1. 800/- 2. 1000/-	SEC D 1. 500/- 2. 800/-	SEC B SEC C SEC D
11.	House Type (Nature of the house)	1. Within a chawl* 2. Within a chawl G+ HOUSE** 3. 320 sq.ft. flat			SEC E
12.	Monthly Expenditure (Expenditure related to house)	1. Monthly expenditure remained same 2. Monthly expenditure has increased by Rs. 1000/- 3. Monthly expenditure has decreased by Rs. 1000/-			SEC E

*Chawl: A chawl is a building containing a number of tenements, single-roomed, having a common corridor and common toilet facilities.

**G+house: A building containing a number of tenements, double-roomed, having a common corridor and common toilet facilities.

NOTE

1. With effect from 2011, the SECs are classified based on education of Chief Wage Earner (CWE) and asset ownership. This study was conducted using the original definition of SECs.

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ARRESTED DEVELOPMENT: THE CASE OF SJSRY ACROSS TWO CITIES

Anuradha Kalhan

This paper examines the impact of Swarna Jayanti Shahari Rozgar Yojna (SJSRY), a poverty alleviation policy, in Delhi; in addition, it compares the impact of SJSRY, across two cities, Delhi and Mumbai.

SJSRY was operational nationally since 1.12. 1997. It was designed to provide skill/training, to form Self Help Groups, link groups to scheduled banks and create access to micro credit at reasonable rates from scheduled banks. It also aimed to spawn individual and group based micro enterprises, and create a self-managed hierarchy of local institutions with self-help groups at the base, their area level societies and ward level federations above. The scheme is more recently subsumed under the National Urban Livelihood Mission.

This paper examines the nature of human, social, financial and physical capital formation occurring through women in SHGs in two metropolitan cities Mumbai and Delhi. Methodologically, it does so through field work using probability sampling and juxtaposing the non-beneficiaries (control group) and beneficiaries of this scheme. It uses the primary, quantitative and qualitative data obtained to analyse the impact of the policy. The mechanisms for delivery in the two cities examined here are different, as are the outcomes.

1. INTRODUCTION

This paper probes two different delivery mechanisms and resulting impact of Swarna Jayanti Shahari Rozgar Yojna (SJSRY) on women in the labour force in Delhi and Mumbai. The impact is classified as human, physical and social capital formation effects. The paper also examines the institutional means by which the policy was delivered. The survey, in Mumbai occurred over 2009-11 and in Delhi over February - May 2013. SJSRY an urban poverty alleviation programme, was launched on 1 December 1997 after amalgamating the experience of past poverty alleviation schemes and subsuming the earlier three schemes for poverty alleviation, i.e., Nehru Rozgar Yojna, Urban Basic Services for the Poor (UBSP), and Prime Minister's Integrated Urban Poverty Eradication Programme. SJSRY has three objectives: 1) encourage self-employment ventures and support their sustainability; it encourages the formation of self-help groups for

generating saving, and providing micro credit for productive purposes 2) support skill development and training programmes, and 3) create suitable self-managed community hierarchical-structures like neighborhood groups, their committees and societies to augment participation. Skill development, financial inclusion and participation remain catchwords in poverty management policy even today.

SJSRY's chronological antecedents are located in successful experiments in Kerala's Alappuzha [1993] and Malappuram [1994] district, undertaken in collaborations with UN, the State Government and Central Government to improve basic services for the urban poor and build solidarity groups at the neighborhood and community level. According to the official web site of the Kerala Poverty Eradication Mission Kudumbashree (www.kudumbashree.org) the outcome in numbers is such that there are close to 150,755 Neighbourhood Groups (NHGs)

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graded under Linkage Banking Programme, out of which 127,467 NHGs are linked with banks and an amount of Rs 1,140 crores mobilised as credit. 25,050 individual enterprises and 1,757 group enterprises have been developed in urban areas. 3,516 individual enterprises and 10,620 group enterprises (with minimum 5-10 members) of poor women formed in rural areas. It has become the largest women's movement of its type in Asia. Outcomes in terms of rising number of productive groups and political involvement of women members has also been well-documented [John, 2009].

The success of this recent experiment in Kerala of course, was not a flash in the pan [Kalhan, 2015b]. Kerala's unique overall development model: high human development and social indicators despite slow economic growth has been noted and debated since 1975. Its historic movements for social reform, literacy, land reforms, strong local government institutions, and the people's plan campaign and now Kudumbashree are well documented. They followed each other in a coherent sequence to produce a society that is literate, aware, politicised, inclusive and public minded [Dreze 1995, Isaac 2003, Pp. 77-110; Robin, 1987, Pp. 447-72; 1992, 2004, Pp. 647-664]. Hence, the success of the experiments with neighborhood groups leading up to Kudumbashree in Kerala does indicate the potential of this policy in the best soil conditions. But results of field work in Mumbai also indicate that there is reason to believe that SJSRY has potential for fundamental change in women's work and participation at the base of the social pyramid [Kalhan, 2012].

At the all India level too, the combined savings of women in SHGs, deposited in banks, was Rs 7,000 crore. According to the NABARD report for 2012, there were 74 lakh SHGs covering 10 crore households. Rs 31,000 is the outstanding credit against SHGs and repayment rates were high at 98%. Because it addressed capability,

livelihood, savings, investments and social capital formation directly and simultaneously among poor urban women, SJSRY could have an enduring effect.

On the other hand, there were sharp regional differences in its outcome and sustainability. The quality of local government, collective awareness, action and popular culture determined how soundly this policy was implemented. It also determined how the poor were defined, how the policy was regularly evaluated and adapted to local conditions or made sensitive to participant feedback.

In Mumbai the scheme is implemented by trained community development officers of the Municipal Corporation since 2000. There were about 4000 SHGs, majority were credit linked and over 30% were productive. Beneficiaries there exhibit a higher frequency of those showing increased human and social capital formation along with a growth in their savings and investments compared to the higher-income non-beneficiaries. More SHGs were formed and more were investing in productive enterprises compared to Delhi, as will be seen below. All this occurred despite the fact that Community Development Officers were too few for the task given the scale of poor population. The beneficiaries in Mumbai were overwhelmingly in favour of the policy. Community Development Officers were appreciative of this well-designed policy to manage the multiple dimensions of poverty simultaneously and opposed recent changes in its configuration which have indirectly reduced funding in ways like reduction in revolving funds, direct interest subsidy, funds for training and development [Kalhan, 2012].

This paper examines the results of recent field work in Delhi, where the policy is implemented by NGOs enlisted by 'Mission Convergence' of the government of Delhi. It estimates the number and the nature of the activities of the SHGs, nature

of capital formation occurring and makes preliminary comparisons between the outcomes in the two metros. The mechanisms for delivery in the two cities are different as are the outcomes.

2. METHODOLOGY AND FIELDWORK IN DELHI

The survey in Mumbai was conducted over 2009-11 and that in Delhi during February - May 2013. The results of the Mumbai survey were published in the *Journal of Indian School of Political Economy* in 2012.

We were able to identify the beneficiaries and non-beneficiaries of the policy in the same slums and how the policy impacted them but we were unable to effectively determine if the women were 'workers' or not before or after they benefited from the scheme as the answers to the question varied when asked in different ways and that is discussed later in the findings. In Delhi, the local government was conspicuous by its absence in policy implementation even though the policy guidelines recommend otherwise. Instead, the State government constituted a body called Mission Convergence (MC) which enlists NGOs to deliver the policy. For field survey in Delhi the web based resources of Mission Convergence (MC-website) were accessed and a list of Gender Resource Centres (GRCs) empaneled by the MC was used to generate a random sample of Centres to be visited for information about their SHGs. In all, we recorded responses of 389 women in the labour force - 214 from SHGs and 175 from the Control Group, i.e., not belonging to SHGs. Each administrative zone is fairly equally represented and by selecting one or two members from each SHG the survey covered a large variety of SHGs, 124 SHGs in all. Though the MC website says there are 1000 operational SHGs, we called and emailed the GRCs on the listed phone numbers and requested permission for interviews. We could visit only some, those that permitted us. However, we fear that actually there might be fewer than 1000 SHGs because the GRCs we visited had an average of 18.8 SHGs each and the

27 GRCs between them appear to have less than 500 SHGs. The range per GRC varied between 39 and 3 SHGs. If only those GRCs invited us who had functioning SHGs (hence the possibility of non-response bias) then it is possible to assume that there are less than 1000. It is possible that those GRCs that did not invite us had reasons like non-existing or non-functioning SHGs.

The entire sampled population consisted of women in the ages of 18-60, in labour force, living in the designated catchment areas of the GRCs. Each area basically consists of about 1.25 lakh 'vulnerable/ poor' people.

3 SOME DATA AND SOME COMPARISONS

This section contains a description of the sampled population in Delhi's SHGs. It is followed by some comparisons with Mumbai data. Tables contain the comparisons with the Control Group (CG) non-members who lived in the same neighborhoods in Delhi and Mumbai, respectively. In Delhi, the members of the SHGs or non-members also accessed the same GRC for other services like health camps, adult literacy, ration cards, school admissions and skill training.

The survey in Mumbai was done earlier; here also comparison between the SHG members and the CG was made. In the Mumbai survey the control group was a mixed group of men and women in the slum neighborhoods. The Tables presented separately the women from the mixed group to observe and compare the results more appropriately. The emphasis here is only on Delhi and comparisons between Delhi and Mumbai are made only on certain issues germane to these, for brevity.

Demographics of the SHG Sample in Delhi

The sample population is mainly young urban women in the working age: 80% of the women are less than or equal to 40 years of age. Mean age of the sample is 35.88 years. This is very

similar to the sample in Mumbai, where the mean age was 40 years. The majority in Delhi, 88%, were married. The number of children per woman respondent among the Mumbai poor are 2.13 against 2.7 for Delhi. Interestingly, familial cohesion is noticeably stronger in Delhi; only one woman in the sample is separated, abandoned or widowed unlike Mumbai where a larger percentage - 9.1%, fell in that category. Some of the differences in family type in Mumbai could certainly be attributed to the depredations of deindustrialisation, loss of traditional male employment and inter-generational effects of that on family cohesion.

The largest group, 38%, was born in Delhi itself including in the rural fringe areas of Delhi, followed by 28% in UP, 14% in Bihar and 10% in Haryana, and the remaining from elsewhere. Majority, 51%, were born in a village and can be described as rural migrants; 33% were born in some city and 16% in some small town. Thus, 38% are at least second generation Delhi dwellers. Upward mobility or security in the urban zones is also not a certainty even for the next generation considering that 49% were urban born and still vulnerable/poor in Delhi.

Only 2.3% were short duration residents of Delhi (under five years) and total of 14.5% had spent up to 10 years. Long duration residents formed the bulk of the sample, 83% had spent more than ten years in Delhi and of these 54% has spent more than 20 years. 65.5% had lived in the same colony for more than ten years, 39% for more than 20 years. By implications once again this means that mobility out of poverty is not easy for people despite long years of stay in the city nor does the programme speedily reach fresh migrant women in the city (only 2.3% of sample members from the SHGs are fresh migrants), though the recent Delhi Human Development Report 2013 says that 'although, the rate of migration has stabilised in Delhi during the last decade, around 75,000 people still come to Delhi

every year in search of a livelihood'. Migration appears to have slowed down during the five years preceding the survey.

Socio-Economic Profile of the SHG Sample in Delhi

The largest groups were the OBCs at 32% of the population and 25% were SC. There was only one ST in the sample. In terms of socio economic profile 58% are OBC/SC/ST. But 42% do not belong to socially backward categories; the city, it seems, is not only a bottomless shelter for the poor but also a caste leveler. Hindus comprised 79% and Muslims 20% of the sample.

Predictably, 78.5% have no land holding in the village; another 16% have less than or equal to 2 acres and only less than 1% have more than 5 acres of agricultural land. Thus, clearly the sample predominantly represents a population which at the time of original migration had little or no rural land holding, virtually a landless labour class. In Mumbai the same pattern is observed; there too 77% had no land holding in their village of origin.

In Delhi, majority (56%) of these women in SHGs say they had no income of their own at all. However, they may be involved in unpaid labour at home - in family enterprises, self - employment, etc. Their employment status is unclear. 6.5% said they earned if and when possible. Only 20% clearly said they are self-employed and 17% earned wages. (This is in sharp contrast to the Mumbai sample, where 62% of SHG members described themselves more clearly as either wage earners or self-employed. More SHG members are self-employed in Mumbai compared to Delhi. Self-employment is the dominant form of employment among SHG members in Mumbai compared to Delhi. And, 92% of the women in Mumbai SHGs say they have interest income of their own from accumulated savings in banks.) Among the wage earners in Delhi, the majority

describe themselves as temporary, casual, contract wage workers. Those who describe themselves as permanent have perhaps been in the same employment for a long time and may not enjoy any of the benefits of provident fund/pension/gratuity associated with formal employment. The question is repeated in terms of wage employment versus self-employment (Table 1 and 2).

Table 1. Comparative Distribution by Wage Employment Status in Delhi and Mumbai samples

Wage Employment Status	Women in SHGs in Delhi (% of 214 observations)	Women in CG in Delhi (% of 175 observations)	Women in SHGs in Mumbai (% of 355 observations)	Women in CG in Mumbai (% of 83 observations)
(1)	(2)	(3)	(4)	(5)
Do not have wage employment	55.6	74.3	64.5	42.2
Casual/Temporary	4.2	2.9	16.9	16.9
Contract	2.8	1.7	4.8	6.0
Temporary/Badli	19.6	13.7	2.4	2.4
Permanent	17.8	5.7	3.9	32.5
Unclear	100	1.7	7.5	0
Total		100	100	100

Table 2. Comparative Distribution by Self Employed Status

Self-Employment Status/with or without hired labour/ if and when possible	Women in SHGs in Delhi (% of 214 observations)	Women in CG in Delhi (% of 175 observations)	Women in SHGs in Mumbai (% of 355 observations)	Women in CG in Mumbai (% of 83 observations)
(1)	(2)	(3)	(4)	(5)
Self Employed	20.1	6.3	26.7	38.9

Not surprisingly of the 20% self-employed in Delhi only three hire five or more workers, the majority employ just one worker. Nearly two thirds work out of their homes, and one in five at some workplace within the ward, suggesting part time work and low or irregular incomes, indicative of the fact that several women are engaged in some form of work from home or nearby, earn very low/irregular income and consequentially often fail to report their work-income at all. Of these self-employment nearly half (49%) make or repair something, 25% provide some service, 13% are in retail trade and 2% are in construction. It is unclear what the remaining 11% are doing. We noted the preponderance of tiny scale, part time or home/ward based enterprises.

Use of credit for income generation is considered to be a primary aim of the policy. It is meager in Delhi (Table 3). 91.2% of the women in SHGs had never taken a loan from banks. A similar high percentage (89%) of respondents said that their SHG did not undertake any group business. The average size of the SHG loan at Rs 38,657 is also very tiny. The highest loan amount was Rs 2,50,000. Contrast this with the responses of women in Mumbai where not only were many more employed in various ways but were also seeking more credit and advice on avenues for investment. Credit off take is often used as a measure of the health of the policy.

Table 3. Comparative Distribution by Credit Availed & Enterprise undertaken

Credit and Enterprise	Women in SHGs in Delhi (% of 214 observation)	Women in SGHs in Mumbai (% of 355 observations)
(1)	(2)	(3)
Credit taken	8.8	41.1
Enterprises	10.7	32.7

Of those women who earned anything at all, the mean income is Rs 2079 per month. 40% of the women earned less than Rs 1,000 per month, another 40% earned between Rs 1000 and Rs 3000 per month, 15% earned between Rs 3000 and Rs 5000 and only 5% earned between five and ten thousand rupees a month.

So, since 55.6% said they had no wage earning employment at all, only 44.4% report having a wage earning status (Table 1). This is occurring even though they were identified as part of the labour force, part of vulnerable section of society. The average age of the women is 35.8 year. The poor are ordinarily those who cannot afford to be without an income even when the remuneration is low. This is an enigma, either these women are excluded from participating by the scarcity of remunerative work given their skill level or by their social reproduction role as mothers. Remunerative wages for women workers must cover the cost of travel and time away from child care and house work. As noted earlier, majority of those who worked for remuneration, worked from home or in the same ward and earned low incomes. This perhaps indicates that remunerations are inadequate to travel far for work or compensate for child care and house work. SJSRY's proactive and sustained initiatives are therefore vital for enhancing the income earning potential of women here. The work created in SHGs is ideally suited for this population, for it aims to generate skills, self-employment or group employment, shared, collaborative work which is flexible in time and location.

Spousal income then becomes the mainstay of the family in Delhi. But about one in eight respondents say that their husbands have no income (12.6%) and some have income only sometimes. Some have over-lapping employment, both wage-employment and self-employment. As regards the question on wage employment or self-employment, wage employed spouses were 74% (in temporary, casual or contract jobs) and 9% were self-employed. The mean family income is Rs 7,371 which is higher than the mean family income in the Mumbai sample. Only 30% of them earn less than equal to Rs 5000 which is better than their counterparts in the Mumbai sample where 88% fall in this income category. Overall too, population below poverty line is lower in Delhi than in Mumbai. Men folk seem to be in more monetarily remunerative work in Delhi.

However, 85% of families in the sample earn less than or equal to Rs 10,000 per month. The overall vulnerability of these families living in metropolitan cities is therefore recognisable not just from the quality of their lodging. Workers' organisations have been asking for Rs 10,000 per month to be as declared minimum monthly living wage in urban areas.

Another aspect in Delhi is more home ownership or 'perceived ownership' (they were often not paying rent in these colonies which are usually unauthorised settlements). Besides, many slum like colonies had been authorised or provisionally authorised in the recent past, critics say, to garner votes.

How the 'vulnerable' subsist in Delhi-

Noting their monthly expenditure patterns one finds that 79% of them live in self-owned houses (as a consequence of both processes of regularisation of unauthorised colonies and relocation in new authorised colonies on the outskirts of the city). Only 21% of the sample pays rent and the average rent is Rs 1,744. Eighty-eight per cent had a bath and toilet within their residence. They pay a monthly average of Rs 751 for electricity and water; an average sum of Rs 1,080 per month was spent on tuition fees (on 2.75 children per family). Rs 1,102 is spent on transportation. Rents have, however, been rising steeply in the poorer quarters as a steady flow of migrants arrive. A single room can cost up to Rs 2,000 per month. Using mean monthly family income Rs 7,371 mentioned above, and assuming a family size of 4.75 (2 adults + 2.75 children) for those who pay rent, the per capita income available for food per month is approximately Rs 567 (Rs 19 per day); for those living in their own homes the amount available for food is Rs 934 per person per month (Rs 31 per day). This underscores the importance of subsidised food for them.

The housing and space situation in the periphery of Delhi is better than that in Mumbai,

as is to be expected due to latter's geography as an island city. The poorer quarters in Delhi have structures that cannot be called slums/ shanties; these are brick houses often not plastered or painted and incomplete, many none the less have a toilet, bath and rudimentary drainage system usually overflowing besides poor garbage disposal facility. All of this creates an over-powering stench in the hot season and a catastrophic epidemic in the rainy season. Overall, the sanitation conditions were better in the slums of Mumbai despite the extreme congestion due to the effort of the local government, the Municipal Corporation of Greater Mumbai (MCGM).

Human Capital in the Sample

As shown in Table 4 below, their educational attainment was such that the majority (57%) were less than 8th standard pass including the illiterates, 26% were 10th standard pass, 9.3% have high school levels, and 7% were graduates, the rest had an unclear status. A high, 59%, say they had some vocational training. Educational profile in Delhi was better compared to Mumbai (Table 4). The policy is supposed to work more effectively at relatively higher levels of literacy and education.

Table 4. Comparative Distribution by Education

Educational Level	Women in SHGs in Delhi (% of 214 observations)	Women in CG in Delhi (% of 175 observations)	Women in SGHs in Mumbai (% of 355 observations)	Women in CG in Mumbai (% of 83 observations)
(1)	(2)	(3)	(4)	(5)
Nil	13.6	14.3	22.5	18.0
Up to and including Primary 4th	13.1	13.1	17.2	20.5
V-VIII	30.4	25.1	20.33	6.1
IX-X	25.7	16.6	26.21	4.5
XI-XII	9.3	24	10.4	9.7
Graduate/Vocational	7.0	6.9	3.4	1.2
Unclear	0.9	0	0	0

The GRC were providing some vocational training to the locals. However, the quality of training was in question. When asked if they had sufficient vocational and business related skills in relation to the possibility of initiating an SHG related enterprise, 94% said they did not have

sufficient training. 89% members received general awareness lectures after joining the SHG. But based on their responses, it seems that the quality of training and skills to initiate business activity are inadequate.

Table 5. Comparative Distribution by Skill/ Training Received

Skill /training	Women in SHGs in Delhi (% of 214 observations)	Women in CG in Delhi (% of 175 observations)	Women in SGHs in Mumbai (% of 355 observations)	Women in CG in Mumbai (% of 83 observations)
(1)	(2)	(3)	(4)	(5)
NO	41	31.4	55.7	85.5
YES	58.9	68.6	44.3	14.5

Only 12.6% of the children of these women, who were above 18 years of age, were enrolled in higher education and vocational training after high school. Also, 99% had not taken any loan for their child's education. 98% said income from SHG did not help their child's education, indicating both their reliance on the government

schooling system which appears to be in better shape in Delhi compared to Mumbai and lower enthusiasm for higher education and skill levels. In Mumbai 47% of the respondents reported that their children were receiving some form of higher education with a higher percentage having taken loans to be able to do so (Table 6).

Table 6. Comparative Distribution by Education of Children

Level of education of children	Women in SHGs in Delhi (% of 214 observations)	Women in CG in Delhi (% of 175 observations)	Women in SGHs in Mumbai (% of 355 observations)	Women in CG in Mumbai (% of 83 observations)
(1)	(2)	(3)	(4)	(5)
Up to and including X	61.42	54.7	86.8	83.7
X-XII	14.38	14.7	30	12
Higher Education	3.55	2.1	17.2	7.3

Note: Columns do not total hundred. Women report more than one child at different levels of education, some less than 5 years old, some out of school and employed.

4. IMPACT OF SHG

We have a random sample of 214 SHG respondents under GRCs from across Delhi. The sample of SHGs consists of members (44%), secretaries (36%), and Presidents (19%). Of them 10% did not even know to which bank they were linked. 3% did not know who was maintaining the group accounts. Only 23 member respondents (11%) had taken business loans from the SHG. A meager 19 (9%) SHGs had taken loans from banks. 98% did not know that they were entitled

to a subsidy if they took a loan from the bank. They however did know that they could get loans at lower interest from SHGs than from the money lenders.

When asked if the SHG does some collective work\business, 191 (89%) respondents said no. Of those who did some business only 2 said they made something, 7 said they traded and 14 were unclear what the business was; 91% of SHGs had taken no loans from the bank as a group indicating a very poor credit utilisation ethos. Even though

the present SHGs were very new, a higher percentage of respondents in Delhi (4%) had past experience of failed SHGs, indicating faltering policy implementation.

Same religion (91%) and same caste (80%) SHGs were the norm, very unlike Mumbai where 45% reported that their SHGs were not same caste and same religion. The city and hence its SHG seems to be more ghettoised than Mumbai.

Majority 97% of the groups was sponsored by NGOs, again in contrast to Mumbai where majority were spawned by the Municipal Corporation of Greater Mumbai and 90% had an account with banks. When they started, monthly savings for 80% of respondents in Delhi was only Rs 100, for another 5% Rs 50 and for the rest Rs 200 or more. Saving rates have improved considerably. When only 8% were saving Rs 100 at the start in about 2010, in 2013, 70% of them were saving more than Rs 1,000 per month. Of these, 18% were saving more than Rs 4,000 per month, and for 5.6% average savings were Rs 5,100 per month! This is indeed a remarkable improvement in the ability to save, considering the reported absence of business activity. There is no profit or loss or records of business activities in the data. Only one SHG in the entire sample reported a monthly profit of Rs 5,000 from their business. This echoes the response of 94% who said that they did not have sufficient vocational or business skills to be self-employed.

Since there is no major productive/ commercial activity, it would be worth investigating how higher savings are occurring. There seems to have been a rapid accretion of saving capacity by intra loaning and money lending outside the group (money lending as principal form of business by SHGs was inferred during the interviews). We did not quantify repayment performance because besides the treasurer and secretary of the SHG other members usually do not have a clear idea of accounts but most members said the repayment performance was satisfactory so far. However, this does not include SHGs that have collapsed

and disappeared due to insolvency before the survey period. A higher percentage of women in Delhi's SHGs had a past experience of failed SHGs than in Mumbai, although the causes of failure were not investigated by us in this particular survey.

Majority found banks behaviour reasonable (24%) or helpful (61%). Eighty nine per cent found the behavior of the GRCs helpful and 10% found them reasonable. This is a clear positive endorsement of the GRC staff. Ninety four per cent felt they got all the information they needed about schemes they were interested in. Hence, it is surprising why the SHGs have remained dormant as enterprises and served mainly as intermediaries for saving and money lending, hence perhaps thwarting the purpose of increasing productive employment of the SJSRY. When asked what the main use of the SHG was, 98% of them used it mainly as a saving scheme, 93% as a source of cheaper loan and for 70% it generated some income (interest perhaps) and for 6% it stopped or decreased borrowing from money lenders at high interests; for 15% it helped reduce their non-business debt. However 97% felt that SHG membership gave them extra confidence and 81% felt that other people treated them better as a result of their SHGs.

The emerging problem areas that respondents identified are: 42% report infighting to be an issue, 45% feel reward for work of managing the SHG, its meetings and its accounts is unfairly determined and 97% claim to be putting in one to two hours of extra work on a daily basis into their SHG without rewards. The lack of entrepreneurial skills/training, accounting and marketing skills and input costs are significant constraints. Clearly, to survive, start-ups need more than just credit.

Other Impact Dimensions

Two impact dimensions of SHGs, namely, confidence and self-esteem are common across Mumbai and Delhi and would influence both

human and social capital formation. But besides some exposure to the 'training' of their members, the SHGs in Delhi do not seem to have any other significant impact on the physical asset or human capital formation aspects; they do however have an accretion of financial assets/savings.

The impact of being part of the SHG on real consumption is as follows: 88% feel that the quantity and quality of food that they can afford over the past 5 years is better compared to 82% in the CG, 89% feel they can afford better medicine and health care compared to 81% in CG, 56% feel they can get better education/ training for dependents and themselves compared to 40% in CG because not only do SHG get information about various skill programs quickly but also get GRC support to obtain admission in neighbourhood school.

But about 9% had acquired consumer durables like TV, fridge, 2-wheeler, furniture etc. compared to 4.6% in CG. SHGs are somewhat better than CG on some of these indicators. However,

thirteen per cent had increased expenditure on social events like weddings, funerals and religious festivals compared to 3% in CG.

The most thought-provoking aspect of their popular perception was that the majority of respondents in SHGs (87%) felt they were better off than their parents compared to 59% in the CG. This was a question added on only in the Delhi survey. The most commonly cited reason was the fact that they were able to educate and better look after their children in spite of their vulnerabilities. This positive impact on children's education can be seen in Mumbai as well. In Delhi they were able to do so because they had more state support in the form of schools, hospitals (being the most used social good) and each family had fewer children than the previous generation. There is no other significant reason or evidence of upward mobility to feel better off than their parents.

Social Capital

Social capital formation is one of the acknowledged aims of the policy.

Table 7. Comparative Distribution of Social Capital

Information & participation in the following-	Women in SHGs in Delhi (% of 214 observations)	Women in CG in Delhi (% of 175 observations)	Women in SGHs in Mumbai (% of 355 observations)	Women in CG in Mumbai (% of 83 observations)
(1)	(2)	(3)	(4)	(5)
Information about various schemes/opportunities	93.9	67.4	97	70
Contested any Elections	2.3	0.0	2.0	0.0
Won Elections	0.5	0.0	0.6	0.0
Held public Office	0.0	1.7	0.6	0.0
Community /social service	10.7	1.7	40.3	14.5
Morcha/agitation	14.0	4.0	42.5	3.6
Trade Union /association membership	0.5	0.0	6.2	3.6
Political Party membership	0.5	0.6	0.6	2.4
Social/ religious association membership	5.6	1.1	33.0	3.6
Vote in elections	89.3	79.4	95	75

Only 0.5% of the respondents from the SHGs were members of any trade union or trade association and 6% were members of same caste, community, religion based association compared to 1% in CG. No woman was part of any association in the CG, 14% had been part of any *andolan*, or *morcha* or agitation compared to 4% in the CG, 11% had some experience of community service compared to 2% in the CG. 11% did not vote in any election compared to 21% in the CG. But many got to know of other schemes for their benefit and social issues because of their membership in SHGs. They say that their social participation was even lower before they became members of SHGs. Hence, simple membership alone does enhance marginally some of the aspects of social capital.

Mumbai had about 4000 SHGs, at least 30% were productive and about 90% credit linked under the MCGM. It appears that not only is the self-help group formation, credit offtake and enterprise aspect of the policy in Delhi underdeveloped, so is the resulting human (children in higher education) social and cultural capital formation in comparison to Mumbai.

5. CONCLUDING REMARKS - PROBLEMS IN METHODOLOGY, DELIVERY MECHANISMS AND EXPLANATION OF TRENDS

1. The issue of response bias permeates fieldwork everywhere - in Mumbai as in Delhi, as the survey was limited to the respondents who would agree to be interviewed, but these were more randomly spread across the slums. In Delhi, it was more sharply biased towards those respondents associated with GRCs that allowed us to visit and interview their respondents. Hence, it is biased perhaps towards the best that GRCs had to show.
2. The manner and degree to which the policy is implemented impacts the confidence and awareness of the women beneficiaries/respondents. This, in turn, directly impacts the quality of the responses and the details of information they can provide. Hence, in the case of Delhi, unlike Mumbai, where the policy is yet to achieve maturity in implementation there is a far greater degree of non-response to questions relating to details of their own occupation, the SHG group business, subsidy, and credit details of SHGs.
3. In Delhi the policy was implemented in its present delivery mechanism, more than ten years after it was announced (it was implemented in Mumbai earlier). A new structure called Mission Convergence has been created since 2009. It recruits NGOs based on their performance to deliver the scheme. Their tenures are also based on their performance. All the Project Coordinators and Community mobilisers employed in the 124 GRCs are employees of some NGO working on some kind of performance based contracts.
4. Institutional deficit seems to be the reason for the choice of this mode of delivery and overall delay since involvement of the ULB is recommended by the policy document. Instead, policy review committee of the Mission Convergence functions directly under the chairmanship of the Chief Minister. Its official websites say that "institutional structure of Samajik Suvidha Sangam or Mission Convergence has been so envisaged, as to free Mission Convergence Programme from the rigid system that brought in operational hurdles and undue delays in implementation. In line with the philosophy of Samajik Suvidha Sangam, delivery has been decentralised and shifted to district level - a definite tilt away from the legacy of top down approach. It is a

reaching out of the Government to its vulnerable citizens for their inclusion in the governance process. It is aimed at inverting the earlier process wherein people had to run from pillar to post to prove their claims to Government's welfare schemes to which they were entitled. However, to ensure effective delivery of Mission mandate, the State has instituted a hierarchical governing structure that plays the role of mentor and guide to the Mission. It also effectively brings in accountability into the programme design at each stage of implementation". This is the claim and our assessment is that this is an innovation to fill up the institutional gap. It works like a convergence of NGOs and their monitoring units consisting of bureaucrats. It does indeed reach more people than were reached before 2009, majority of respondents we spoke to were comfortable with their local GRC staff (which may have been the best GRCs to begin with).

5. In Mumbai, on the other hand, the policy is implemented directly by the MCGM. The hierarchy of the corporation places the implementation under the Urban Poverty Eradication Cell, directly under an Assistant Commissioner (AC) in charge of Planning. This AC along with the Project Officer and 7/8 Community Development Officers (who are all permanent employees of the MCGM recruited through the Maharashtra Public Service Commission or otherwise) implements the policy. Only the 11 community mobilisers are individuals chosen from the community itself by the CDOs and working on a contractual/ temporary basis. This has given the policy implementation both strength of experience and continuity. In Mumbai, staff inadequacy was a very important impediment. Here too there is inadequate convergence of government, non-government resources and needs of

poor people, unlike Kudumbashree in Kerala, because there is no mechanism to include community based organisations in local government/ ward level plans. Hardly any planning, market research, technical and marketing support is provided on a steady basis to new or existing micro enterprises. Similarly, no sustenance in terms of backward and forward linkages, except for some Aadhar centres for the sale of SHG products. Enterprises, therefore, do not undertake well diversified activities, most enterprises earn poorly and also remain vulnerable even in Mumbai.

6. In both cities women in SHGs are more likely to be gainfully employed/working than in the CG. There is a closer correlation between own income experience and participation in SHGs than between the level of education and SHG membership. Hence, engagement with remunerative work encourages women to join SHGs and participation, in turn, encourages remunerative savings and work, and enhances income flows in a benevolent reinforcing cycle. In Delhi, a much smaller fraction (44%) of the sampled women call themselves as 'earning /working/ employed'. In Mumbai, employed women constituted 94% of the SHG sample; these women are likely to be more confident. In Delhi, there was a much higher degree of non-response to questions seeking details of their SHG.
7. Having said that, there is evidence of higher frequency of financial, human and social capital formation among members of SHGs in both cities when compared to the control groups. The evidence is clearer in Mumbai where the policy has been in effect longer.
8. As of now in Delhi, the SHG component is not comprehensively or entirely perceived

and implemented. Forming a neighbourhood trust group and promoting collective investment, risk taking and enterprise is radically different from, say, getting a ration card or school admission or old age pension. Hence, there are far fewer SHGs, fewer still linked to banks and only a few in group-based direct productive activity, compared to Mumbai. The MCGM has over 3,000 SHGs linked to banks, and at least half are productive.

9. Mumbai had a stable and responsive implementing mechanism in the form of well-trained, seasoned staff of CDOs employed by MCGM (with all of them having degrees in social work from public universities). They had been involved with the policy since its very inception. The outcomes in Mumbai were better because of the stable staff and the direct involvement of the local government as mandated by the policy framework. During the qualitative interviews in both Delhi and Mumbai, the implementing agencies and organisers said that the funding was inadequate. In Mumbai, the staff assigned to policy implementation was also inadequate given the scale of poverty. Although implementation in Mumbai is much more vigorous, the manner in which the policy was implemented in both the cities, unlike Kochi in Kerala, certainly is not a convergence of poor people, their needs, of government resources and non-government means. The federations of SHGs at the ward and city level are not included in local planning; they are unable to even obtain basic inputs for enterprise like urban space, adequate skills, support for marketing, accounting, raw materials, etc. It is a low cost, but top down approach.
10. There is no institutional capacity created on the scale of Kudumbashree¹ in Kerala. In Kerala, the federations of NHGs and

Community Development Societies create a pyramid of elected leaders from among the federations of NHGs and Community Development Societies of the beneficiaries of the policy. At each level, ward, municipal government and state, there is a direct involvement of government and elected representatives of these federations, hence these women cannot be ignored in local and state level plans. In Mumbai and Delhi, this does not occur and the existing institutions may not be an adequate arrangement to implement more multifaceted and non-routine policy like SJSRY on an extensive scale.

11. As it existed, there was perhaps little potential for SJSRY to expand and show visible results in the SHG component in Delhi. For that to happen, experienced and committed staff has to be employed and interlaced to each other, to banks and local government on a more permanent and direct basis by the Delhi Government. Increased budgets without committed manpower will not be enough. The reverse is obviously true as well. The guidelines of the revised policy documents quoted below imply that committed manpower should exist. Thus far, the Delhi Government was implementing the policy through Mission Convergence and NGOs with contract staff of well qualified but low paid, young people without a long term stake in the delivery system and without the involvement of the local government, i.e., the municipal government. The staff had a high intensity of work with multiple schemes and other reporting demands made on them.

"The SJSRY Guidelines envisage the setting up of a dedicated cadre/service of officers specialising in urban poverty alleviation /community mobilisation and development for supporting the implementation of urban poverty alleviation and

related programmes in States/UTs. These officers are to be appointed at ULB/District/State levels, with suitable promotion avenues, for implementation of various urban poverty alleviation schemes including SJSRY with a professional approach. The instant guidelines aim at guiding the creation of an appropriate programme administration structure, supported by experts engaged outsourcing/contract/deputation basis to effectively implement SJSRY and other urban poverty alleviation programs in cities and towns."

12. In Delhi, majority of women were receiving training in beauty treatment, tailoring, rather than computer literacy, accountancy, etc., without a view to diversity and quality of training for employability. A degree of convergence between training and job market and local area needs is better for employability. The skill training component lacks variety, quality or adequacy. This observation is based on the low budget and the responses of the interviewees.
13. In both Delhi and Mumbai, universality of reach and interlinking with local level developmental planning, which is a hallmark of Kudumbashree in Kerala, is absent. The outcomes are indicative of the limitations of the delivery model used and absence of any vision or road map for progressive enlargement of role of the poor at all levels of decision making and implementation by incorporating the elected representatives of SHG federations in local developmental planning process.
14. The policy was both underfunded (with an annual all India budget allocation for 2013-14 of Rs 893.75 crore) and under supported by dedicated staff. If one uses the National Urban Livelihood Mission's (NULM's) estimates of urban poor at 98 million of whom half are poor women then the per head budget allocation is Rs 182 per annum. The state's share of 25% will add Rs 45.50 per person. Hence, a total of Rs 227.50 per person per annum available for skill training women to become productively employed, seems to be very inadequate, let alone for expanding the delivery to other poor households.
15. In Delhi, the annual expenditure reported on this scheme on 13.3.13 was only Rs 2.34 crore, and in Maharashtra Rs 83.14 crore. Tentative budget provision in Delhi for the year 2013-14 was Rs 28.45 crore and in Maharashtra Rs 117.88 crore. Disaggregated figures for Mumbai could not be obtained. The level of expenditure will indicate the inadequate funding in view of the scale of poverty, unemployment and under employment among poor women.
16. Our rough estimate (based on their website information and salaries of GRC staff that we interviewed) is that the annual cost of running 124 GRCs is about Rs 20 crore per annum. The cost of the entire structure of 3 Mother Non-Government Organisations (MNGOs) who supervise the 124 GRCs would add more to the cost of delivery, while the entire expenditure on SJSRY is Rs 2.34 crore! Since the GRCs are implementing policies of nine other departments, this just seems to be a very inadequately provided delivery proposition.
17. While the DHDR (2013) recognises the need to reduce gender based inequality and reinforce incomes and employment in the informal sector: "Enhancing the earnings of the low productivity manufacturing sector and some subsistence services sub-sectors in the informal sector as well as better enforcement of laws for the promotion and protection of livelihoods, especially for those working in vulnerable occupations should constitute an important policy focus"

(*Government of National Territory of Delhi* 2013). Delhi's implementation of SJSRY is unfortunately still in its embryonic stage compared to Mumbai.

18. According to the same report the Municipal Corporation of Delhi ranks very low on the perception scale of its citizens. This state of institutional deficit in local government may hamper last mile delivery of every policy and programme on a long term basis.

In conclusion, in the context of overall meagre funding, institutional deficit and the model of delivery adopted in Delhi did adversely impact the implementation of SJSRY (while the shortage of local government staff are the retarding factors in Mumbai). This is unfortunate because the scheme was truly multi-faceted and has wide scope for enhancing inclusion, as amply demonstrated by evidence from Kerala [John, 2009] and our own field work in Kochi. In Kochi, we found thousands of NHGs, and what are now called Joint Activity Groups born out of NHGs, extensive, diversified, training programme including general orientation, accounts, data entry, computer literacy, manufacturing, handi-crafts, catering, running subsidised cafes and canteens, tailoring establishments, food processing and almost all were credit linked (Kalhan 2015b). Meanwhile, the policy has been subsumed into the National Urban Livelihood Mission. The new policy directives and guidelines have created much disarray and disquiet in Mumbai [Kalhan, 15a, Pp. 42-44].

NOTE

1. According to Sanandakumar and Krishnakumar [2014], Kudumbashree, Kerala's Poverty Eradication Mission, is fifteen years old, is based on community based organisations of women has about 2.59 lakh Neighbourhood Groups

(NHGs), with about 41 lakh members and a saving corpus of Rs 2,262 crore. It has 35,000 micro enterprises that grew out of the NHG movement. Its 17,000 ADS and 1,058 CDSs function as a pyramid of elected community based organisations in every district of the state. It has not less than 41 lakh women members in a state population of 3.3 crore.

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DOCUMENTATION

The purpose of this section is to make available to the readers official documents such as reports of committees, commissions, working groups, task forces, etc., appointed by various ministries, departments, agencies of central and state governments and international organisations, which are not readily accessible either because they are old, or because of the usual problems of acquiring governmental publications, or because they were printed but not published, or because they were not printed and remained in mimeographed form. We also present in this section, official documents compiled from scattered electronic and/or other sources for ready reference of the readers. It will be difficult and probably not worthwhile to publish the documents entirely. We shall publish only such parts of them as we think will interest our readers. The readers are requested to send their suggestions regarding official documents or parts thereof for inclusion in this section.

We are also keen to publish Papers, Notes or Comments based on the material included in this section. We invite the readers to contribute the same to our journal, which we shall consider for publication in subsequent issues of the journal, after the usual refereeing process.

In the present section, we publish:

1. High Level Expert Group Report on Universal Health Coverage for India, Instituted by Planning Commission of India Submitted to the Planning Commission of India, New Delhi, November, 2011.
2. National Urban Housing and Habitat Policy 2007, Government of India, Ministry of Housing & Urban Poverty Alleviation New Delhi

HIGH LEVEL EXPERT GROUP REPORT ON UNIVERSAL HEALTH COVERAGE FOR INDIA

Instituted by Planning Commission of India Submitted to the Planning Commission of India
New Delhi November, 2011

TERMS OF REFERENCE

Universal Health Coverage for India

The terms of reference (ToRs) are as follows:

1. Develop a blue print for human resources in health, for India.
2. Rework the physical and financial norms needed to ensure quality, universal reach and access of health care services.
3. Suggest critical management reforms in order to improve efficiency, effectiveness and accountability of the health delivery system.
4. Identify pathways for constructive participation of communities and the private for-profit and not-for-profit sectors in the delivery of health care.
5. Develop systems which will ensure access to essential drugs, vaccines and medical technology by enhancing their availability and reducing cost to the Indian consumer.
6. Develop a framework for health financing and financial protection that offers universal access to health services.
7. It was also decided to develop a seventh chapter addressing the Social Determinants of Health, as this was seen as an important overlapping element to be covered by, and beyond, all ToRs.

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Chapter 5: Management and Institutional Reforms

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Chapter 7: Social Determinants of Health*

Chapter 8: Gender and Health*

Process of Consultations*

Expert Consultants*

PHFI Secretariat Team*

Abbreviations*

PREFACE

The High Level Expert Group (HLEG) on Universal Health Coverage (UHC) was constituted by the Planning Commission of India in October 2010, with the mandate of developing a framework for providing easily accessible and

affordable health care to all Indians. While financial protection was the principal objective of this initiative, it was recognised that the delivery of UHC also requires the availability of adequate health care infrastructure, skilled health workforce and access to affordable drugs and technologies to ensure the entitled level and quality

* Not included here.

of care given to every citizen. Further, the design and delivery of health programmes and services call for efficient management systems as well as active engagement of empowered communities. The original terms of reference directed the HLEG to address all of these needs of UHC. Since the social determinants of health have a profound influence not only on the health of populations but also on the ability of individuals to access health care, the HLEG decided to include a clear reference to them, though such determinants are conventionally regarded as falling in the domain of non-health sectors.

The HLEG undertook a situational analysis of each of the key elements of the existing health system and has developed recommendations for reconfiguring and strengthening the health system to align it with the objectives of UHC, bridging the presently identified gaps and meeting the projected health needs of the people of India over the next decade. In this exercise, it was greatly enabled by the expert advice provided by a number of Indian and international organizations and individuals who shared the varied perspectives of policy makers, health professionals, health system analysts and managers, civil society, private sector, development partners and academia. It drew upon the work and wisdom of several past expert committees and study groups which had provided valuable recommendations on strengthening different elements of the health system in India. The HLEG was provided valuable assistance by the energetic group of researchers who constituted its technical secretariat at the Public Health Foundation of India (PHFI). It also benefited immensely from the intermittent consultations with members of the Planning Commission while its work was in progress.

The HLEG is submitting its report at a time of historically unprecedented opportunity for advancing people's health through the introduction and effective implementation of UHC. The

Prime Minister has declared, in his Independence Day Address on August 15, 2011, that health would be accorded the highest priority in the 12th Five Year Plan which would become operational in 2012. There is a clearly articulated governmental intent to increase the public financing of health to 2.5% of India's GDP, during the course of the 12th Plan. The growth of India's economy permits this long overdue increase in public financing of health. The recognition of investment in health as both a developmental imperative and a pathway for winning popular political support has been evident in many recent initiatives ranging from the National Rural Health Mission (NRHM), the Rashtriya Swasthya Bima Yojana (RSBY) and a multitude of state sponsored health insurance schemes. The social objectives of all of these schemes would need to be merged and their scope considerably expanded to create a valued and viable model of UHC in India.

The adoption of programmes for promoting UHC, by many other countries, provides a stimulus not only to act in conformity with a globally progressive commitment to health equity but also to become a leader of the movement by creating the best contemporary model of UHC. The HLEG has studied the experience of other countries, especially of those in the low and middle income categories, while developing its recommendations for India.

The HLEG's vision of UHC transcends the narrow, inadequate and often inequitable view of UHC as merely a system of health insurance. UHC, in its understanding, moves beyond 'insurance' by providing an 'assurance' of health care for multiple needs and includes health beyond health care, going beyond a mere illness response. UHC should address health in all of its dimensions and emphasize prevention and primary health care, which are ignored, neglected or even undermined by the usual systems of health insurance. Such an assurance has to be provided

by the government, which has to act as the guarantor of UHC and ensure its success and sustainability, by mobilizing all societal resources and advance multi-sectoral actions. In this perspective, the UHC is linked firmly to the Right to Health and converts an aspirational goal into an entitled provision.

The HLEG also recognizes that, for such a vision of the UHC to be realized, a tax based system of health financing is essential. This is also the global experience, wherein countries which have introduced UHC have mostly depended on general revenues rather than on unsteady streams of contributory health insurance which offer incomplete coverage and restricted services. For UHC to succeed in India, political and financial commitments are required from the central as well as state governments. We hope this report will catalyze those commitments and channelize their concerted actions for the early adoption and effective implementation of UHC.

The HLEG's report provides a framework for designing the UHC system. Even as that framework is discussed and debated in the public domain, delivery of UHC requires many implementation pathways to be identified and several operational processes to be detailed. Much work lies ahead but we hope this report provides a useful beginning.

K. Srinath Reddy
Chair, High Level Expert Group
on Universal Health Coverage

EXECUTIVE SUMMARY

Defining Universal Health Coverage

We have, for purposes of our Report, adopted the following definition of Universal Health Coverage (UHC):

Ensuring equitable access for all Indian citizens, resident in any part of the country, regardless of income level, social status, gender, caste or religion, **to affordable, accountable, appropriate health services of assured quality** (promotive, preventive, curative and rehabilitative) **as well as public health services addressing the wider determinants of health** delivered to individuals and populations, with **the government being the guarantor and enabler**, although not necessarily the only provider, of health and related services.

Our definition incorporates the different dimensions of universal health assurance: health care, which includes ensuring access to a wide range promotive, preventive, curative, and rehabilitative health services at different levels of care; health coverage, that is inclusive of all sections of the population, and health protection, that promotes and protects health through its social determinants. These services should be delivered at an affordable cost, so that people do not suffer financial hardship in the pursuit of good health.

The foundation for UHC is a universal entitlement to comprehensive health security and an all encompassing obligation on the part of the State to provide adequate food and nutrition, appropriate medical care, access to safe drinking water, proper sanitation, education, health-related information, and other contributors to good health. It is our belief that the State should be primarily and principally responsible for ensuring and guaranteeing UHC for its citizens. The State should not only provide health and related services, but should also address the wider determinants of health to effectively guarantee health security.

Ten principles have guided the formulation of our recommendations for introducing a system of UHC in India: (i) universality; (ii) equity; (iii) non-exclusion and non-discrimination; (iv) comprehensive care that is rational and of good quality; (v) financial protection; (vi) protection of patients' rights that guarantee appropriateness of care, patient choice, portability and continuity of care; (vii) consolidated and strengthened public health provisioning; (viii) accountability and transparency; (ix) community participation; and (x) putting health in people's hands.

Intrinsic to the notion of universality, non-discrimination, non-exclusion and equity is a fundamental commitment to health as a human right. Universality implies that no one (especially marginalised, remote and migrant communities as well as communities that have been historically discriminated against) is excluded from a system of UHC. At the same time, while society should pay special attention to the concerns of disadvantaged populations and the poor, a universal system should provide health coverage and care for everyone. This will ensure the creation of a robust and sustainable system of UHC in whose success every section of society has a vital interest. It will also protect both the poor and non-poor from the risk of impoverishment due to unaffordable health care expenditures. A system of UHC can succeed only if it is established on the strong foundations of common interest, social solidarity and cross-subsidisation.

Instituting a system of UHC for India requires a flexible architecture to deal with inequities in health outcomes, regional and socio-cultural diversity, and the differential health care needs of populations in different locations. It should also take into account the challenges of rapid urbanisation, simultaneous demographic, epidemiological and nutritional transitions underway, as well as social and political changes occurring in the country.

Embedded in our understanding of UHC is recognition of two critical factors. First of all, it will be difficult, if not impossible, to achieve and sustain UHC without addressing the **social determinants of health**. Urgent and concrete actions addressing the social determinants of health are needed to move towards greater health equity, bridge gaps and reduce differentials in health by class, caste, gender and region across the country. In other words, UHC can be achieved only when sufficient and simultaneous attention is paid to at least the following health-related areas: nutrition and food security, water and sanitation, social inclusion to address concerns of gender, caste, religious and tribal minorities, decent housing, a clean environment, employment and work security, occupational safety and disaster management. Secondly, the very framework and principles of UHC for India will be severely undermined if gender insensitivity and gender discrimination remain unaddressed. An inclusive approach to health should attend to the needs and differentials between men, women and other genders, along with the interaction between social and biological markers of health. In making UHC truly gender-sensitive, we specifically recommend critical actions to improve access for women and girls to health services (going beyond maternal and child health), to recognise and strengthen women's central role in health care provision in both the formal health system and in the home, to build up the capacity of the health system to recognise, measure, monitor and address gender concerns, and to support and empower girls and women.

Finally, our review of the global experience with UHC leads us to make two comments. One, there doesn't appear to be a single 'universal method' of financing and financial protection that assures guaranteed UHC in any country. Two, what we are proposing for India is somewhat unique. It is a hybrid system that draws on the lessons learned from India as well as other developed and developing countries. Our vision

and recommendations that follow take cognizance of the extraordinary opportunities that India offers - and the possibility for India to take a lead in introducing a well-designed UHC system that is eminently suited to the needs and resources of countries at a similar level of development.

Our vision

We propose that every citizen should be entitled to essential primary, secondary and tertiary health care services that will be guaranteed by the Central government. The range of essential health care services offered as a National Health Package (NHP) will cover all common conditions and high-impact, cost-effective health care interventions for reducing health-related mortality and disability. A panel of experts should determine the package of services taking into account the resource availability as well as the health care needs of the country.

Health care services to all citizens covered under UHC will be made available through the public sector and contracted-in private facilities

(including NGOs and non-profits). The High Level Expert Group examined the range of services that could be offered by the institutions participating in the UHC program.

Two different options emerged:

1. In the first option, private providers opting for inclusion in the UHC system would have to ensure that at least 75 per cent of out-patient care and 50 per cent of in-patient services are offered to citizens under the NHP. For these services, they would be reimbursed at standard rates as per levels of services offered, and their activities would be appropriately regulated and monitored to ensure that services guaranteed under the NHP are delivered cashless with equity and quality. For the remainder of the out-patient (up to 25%) and in-patient (up to 50%) coverage, service providers would be permitted to offer additional non-NHP services over and beyond the NHP package, for which they could accept additional payments from individuals or through privately purchased insurance policies.

UNIVERSAL HEALTH COVERAGE BY 2022: THE VISION		
ENTITLEMENT	NATIONAL HEALTH PACKAGE	CHOICE OF FACILITIES
Universal health entitlement to every citizen	Guaranteed access to an essential health package (including cashless in-patient and out-patient care provided free-of-cost) * Primary care * Secondary care * Tertiary care	People are free to choose between * Public sector facilities; and * Contracted-in private providers

2. The second alternative entails that institutions participating in UHC would commit to provide only the cashless services related to the NHP and not provide any other services which would require private insurance coverage or out of pocket payment.

There are strengths and limitations to each of these approaches. The first option would make it easier for the state and central governments to contract-in private service providers. There is, however, a concern that this could result in diversion of patients from the cashless NHP to the on-payment service provided by the same provider or differential quality of services provided to UHC beneficiaries and paying patients, which

may compromise quality of care for the UHC patients. The second option avoids this pitfall but would render it difficult for many medical college hospitals, institutions of excellence (such as the All India Institute of Medical Sciences) and private hospitals which are accredited for post-graduate training by the National Board of Examinations to participate in the UHC system, because teaching and research at those levels would require them to go beyond the NHP package covered by UHC.

Central and State governments may examine these options and choose, based on their assessment of how best the access and equity objectives of UHC can be served. If the former option is chosen, a strong regulatory and monitoring mechanism must be established to ensure appropriate care for UHC beneficiaries even in institutions that provide mixed services. State governments are free to supplement the UHC National Health Package (NHP) through additional funding from their own budgets for services beyond the NHP.

Even with the two options, there will be some or several private hospitals which may not get themselves accredited under the UHC system given the conditionalities. Citizens are free to supplement free-of-cost services (both in-patient and out-patient care) offered under the UHC system by paying out-of-pocket or directly purchasing additional private voluntary medical insurance from regulated insurance companies.

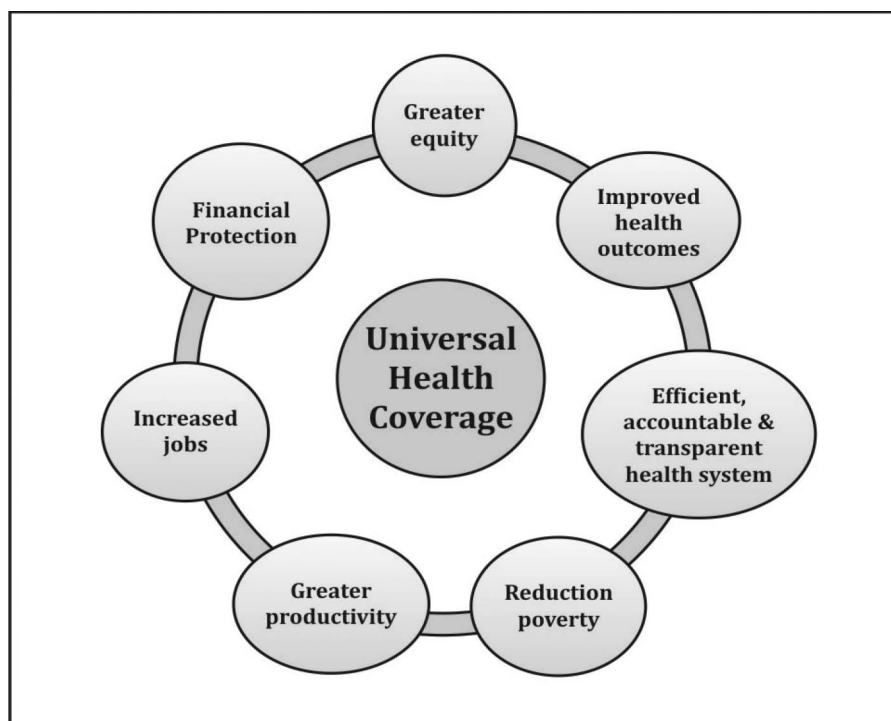
We recognise the need to distinguish between health-related clinical services and hospitality services especially in tertiary care institutions. Service providers registered with the UHC system will be allowed to charge additional amounts from those who seek additional hospitality services not covered under the NHP. We envisage that over time, every citizen will be issued an IT-enabled National Health Entitlement Card (NHEC) that will ensure cashless transactions, allow for mobility across the country and contain personal health information. Such a card will also

help the State to track patterns of disease burdens across the country and plan better for the public provision of health care.

Expected Outcomes from UHC

India can aspire to achieve greater equity by bridging health disparities and inequities. The creation of a strong and robust health policy platform through the proposed scaling up of public spending and expansion in health service provisioning is likely to improve health outcomes. Moreover, the adoption of an integrated primary health approach is expected to result in a gradual but significant reduction in overall disease burden across the country. A strengthened health system under UHC will result in better health literacy for Indians through improved health promotion, healthier behaviours and lifestyles. Greater emphasis on the use of information technology to link health care networks will improve health surveillance in the country with the establishment of a health information system that will generate valuable data on various health and disease trends and outcomes.

The expansion of the health workforce is also expected to generate almost seven million jobs for young people and women over the coming decade. The provision of free health care and medicines for both in-patient as well as out-patient care through financial protection, can be expected to significantly reduce or reverse the high private out of pocket spending. A healthy population in turn can contribute to economic growth through increased productivity and higher earnings. There are other benefits as well. Promoting health equity also contributes to increased social cohesion and empowerment and by joining the global movement towards UHC India now has both the capacity and opportunity to emerge as leading force for equitable health care of all. And finally, through implementing UHC with its unique reach and scope of health care delivery, India stands to gain the political goodwill and support of 1.2 billion potential beneficiaries.



The new architecture for UHC

It is possible for India, even within the financial resources available to it, to devise an effective architecture of health financing and financial protection that can offer UHC to every citizen. We have developed specific recommendations in six critical areas that are essential to augment the capacity of India's health system to fulfil the vision of UHC. These areas listed below are the focus of the recommendations in this Report:

- 3.1 Health Financing and Financial Protection
- 3.2 Health Service Norms
- 3.3 Human Resources for Health
- 3.4 Community Participation and Citizen Engagement
- 3.5 Access to Medicines, Vaccines and Technology
- 3.6 Management and Institutional Reforms

3.1 Health Financing and Financial Protection

We have identified three principal objectives of the reforms in health financing and financial protection:

Objective 1: ensure adequacy of financial resources for the provision of essential health care to all

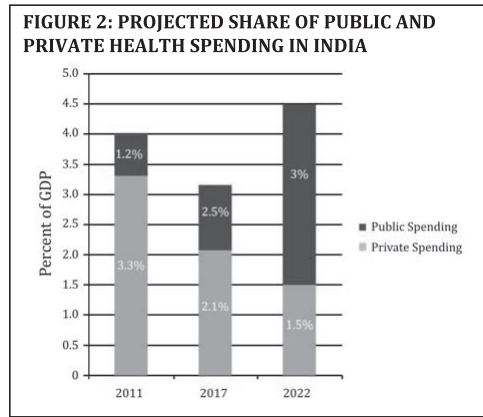
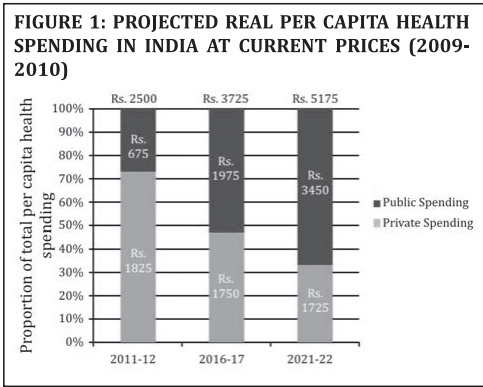
Objective 2: provide financial protection and health security against impoverishment for the entire population of the country

Objective 3: put in place financing mechanisms which are consistent in the long-run with both the improved well being of the population as well as containment of health care cost inflation

Our key recommendations in this critical area are listed below.

Recommendation 3.1.1: Government (Central government and states combined) should increase public expenditures on health from the current level of 1.2% of GDP to at least 2.5% by the end of the 12th plan, and to at least 3% of GDP by 2022.

Financing the proposed UHC system will require public expenditures on health to be stepped up from around 1.2% of GDP today to at least 2.5% by 2017 and to 3% of GDP by 2022. The proposed increase is consistent with the estimates by government as well as our preliminary assessment of financial resources required to finance the NHP. Even if we assume that the

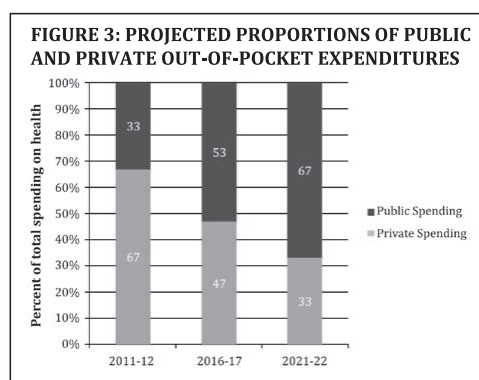


combined public and private spending on health remains at the current level of around 4.5% of GDP, this will result in a five-fold increase in real per capita health expenditures by the government (from around Rs. 650-700 in 2011-12 to Rs. 3,400-3,500 by 2021-22). There will also be a corresponding decline in real private out-of-pocket expenditures from around Rs. 1,800-1,850 in 2011-12 to Rs. 1,700-1,750 by 2021-22 (Figure 1).

Such a planned expansion in public spending on health will change significantly the pattern of

public and private spending on health in India (Figure 2).

Increased public expenditures, in our estimate, will lead to a sharp decline in the proportion of private out-of-pocket spending on health - from around 67% today to around 33% by 2022 (Figure 3) if the increased public spending is implemented in a way that substitutes for much of current private spending.



Health care provisions offered through the UHC programme have several public and merit goods characteristics that justify the use of public resources to finance it. Enhancing public expenditures on health is likely to have a direct impact on poverty reduction, if this increase leads to a reduction in private out-of-pocket expenditures. Financial metrics show that there is a significant imbalance in private spending versus public spending and in fact private spending is almost three times the amount of public spending. Our proposed increase in spending on health will greatly alter the proportion of public and private spending on health and, hopefully, correct the

imbalance that exists.

Cross-country data on health expenditures shows that, while broadly speaking, a higher level of government spending on health (whether as a percentage of GDP or in per capita terms) is often associated with a lower dependence of a country's health system on private out of pocket expenditures, much depends upon the specific way the additional public spending is pooled and spent.

Prepayment from compulsory sources, (i.e., some form of taxation), and the pooling of these revenues for the purpose of purchasing health care

services on behalf of the entire population is the cornerstone of the proposed UHC programme. Such an arrangement will provide a number of financial protection benefits. Both international experience and important concepts in health economics demonstrate that voluntary mechanisms of paying for health care cannot be a basis for a universal system. Prepaid funding that is pooled on behalf of a large population is essential for ensuring that the system is able to redistribute resources and thus services to those in greatest need, given that the risk of incurring high health expenditures is often quite unpredictable at the start of any budgetary period. And as noted above, both theory and evidence - no country that can be said to have attained universal coverage relies predominantly on voluntary funding sources - demonstrate that both compulsion (to avoid "opting out" as a result of the adverse selection phenomenon¹) and subsidisation (to ensure that those too poor or too sick to contribute) are essential for universal coverage. Hence, increased government expenditure on health is essential to ensure a leading role for compulsory pooling as the means to progress towards universal coverage.

Recommendation 3.1.2: Ensure availability of free essential medicines by increasing public spending on drug procurement.

Low public spending on drugs and non-availability of free medicines in government health care facilities are major factors discouraging people from accessing public sector health facilities. Addressing this deficiency by ensuring adequate supplies of free essential drugs is vital to the success of the proposed UHC system. We estimate that an increase in the public

procurement of medicines from around 0.1% to 0.5% of GDP would ensure universal access to essential drugs, greatly reduce the burden on private out-of-pocket expenditures and increase the financial protection for households. Increased spending on drugs needs to be combined with a pooled public procurement system to ensure adequate supplies and rational prescription of quality generic drugs by the public health system. Distribution and availability of quality medicines across the country could be ensured by contracting-in of private chemists.

Recommendation 3.1.3: Use general taxation as the principal source of health care financing - complemented by additional mandatory deductions for health care from salaried individuals and tax payers, either as a proportion of taxable income or as a proportion of salary.

We recommend general taxation as the most viable option for mobilizing resources to achieve the target of increasing public spending on health and creating mechanisms for financial protection. There are few other options given the difficulties of collecting regular premiums from India's large informal sector workforce. At the same time, the potential for additional revenue mobilisation from taxation is high given the projected rates of economic growth, the anticipated improvements in the efficiency of tax collections, and expected increases in both the organised sector base and the tax-payer base. Special efforts should be made to increase revenues through tax administration reform and, in particular, improved information system for taxes at both central and state levels. The tax ratio in India, at a little over 15 per cent of GDP, is lower than the average for countries with less than USD 1000 (18%) and substantially

1. The phenomenon known as adverse selection is a particular type of market failure common to health insurance. Effective risk protection requires that the prepaid pool includes a diverse mix of health risks. Left to purely individual choice, however, healthier individuals will tend not to prepay, while sicker individuals will join (assuming that they can afford it). This leaves the prepaid pool with a much costlier population than the average in the population, and as a result is not financially stable.

lower than the average for middle income countries (22% for countries with per capita income between USD 1000 and USD 15000). The enactment of a direct taxes code (DTC) and the introduction of Goods and Services Tax (GST) could improve the revenue productivity of the tax system. Another important area for improving the tax productivity is to review all tax incentives and undertake measures to reduce arrears in taxes. It would, however, be appropriate to complement general taxation with a specific surcharge on salaries or taxable income to pay for UHC and offer cashless health care to all sections of the society. While improving the tax-to-GDP ratio is necessary, it is equally important to increase the share of overall public spending devoted to health. As noted, India devotes among the lowest proportion of total public spending to health - at or below 4.4% of total government spending between 1999 and 2009 according to WHO data, and in 2009. Only 9 countries (out of 191) devoted a smaller share of government spending to health than did India.

Recommendation 3.1.4: Do not levy sector specific taxes for financing.

Revenues from specific sources could be potentially earmarked to finance health care. However, in our view, these options may not be appropriate for India. None of these options is likely to meet substantially the financial requirements of Universal Health Coverage. Moreover, the practice of earmarking financial resources distorts the overall fiscal prioritisation. Also, given that most public revenues are fungible, earmarking from a specific tax may not actually add to the health budget if the increased funds from the earmark are offset by reductions from discretionary revenues. Though earmarking is not desirable, higher taxes on tobacco and alcohol have the public health benefit of reducing

consumption of these harmful products, while adding to the general revenue pool. Those products should, therefore, be taxed at higher levels. However, depending upon revenue mobilisation from such sin and sumptuary taxes is fraught with perverse incentives. Securing more resources for health sector would, for instance, require increased consumption of alcohol and tobacco products both of which are undesirable. We, therefore, recommend that additional resources for increasing public investments in health (and other social services) should be generated by enhancing the overall tax-to-GDP ratio by widening the tax base, improving the efficiency of tax collections, doing away with unnecessary tax incentives, and exploring possibilities of reallocating funds to health.

Recommendation 3.1.5: Do not levy fees of any kind for use of health care services under the UHC.²

We recommend that user fees of all forms be dropped as a source of government revenue for health. User fees have not proven to be an effective source of resource mobilization. Global experience suggests that imposition of user fees in many low and middle income countries has increased inequalities in access to health care. Even modest levels of fees have led to sharply negative impacts on the usage of health services. Given that people in India already pay a substantial amount out-of-pocket, whether to private providers or in the form of informal payments in public facilities, a differential fees model which charges different fees to people in different economic levels in a society was considered as an approach for leveraging user fees as a financing mechanism and improving the fairness and

2. One of the HLEG members differed with this recommendation, because he was of the considered view that persons who can afford to pay should be charged for tertiary care services.

transparency by which people contribute. However, our assessment is (i) there are practical challenges of means-testing and errors of inclusion and exclusion associated with identifying the economically weaker sections of society; (ii) as a result, it would be very difficult to provide equitable services to all economic sections of the society through a differential fee arrangement; and (iii) limiting corruption and administrative costs associated with receiving payments at the point of care, makes it difficult to implement a program based on differential fees. User fee can sometimes be employed as a means of limiting excessive consumption of unnecessary health care but there are other approaches such as effective triaging, providing preventive care etc. that are more effective in controlling this issue. Also as a practical and political issue, increasing official user fees, when they are so low and yet impose financial barriers to access, would be politically and practically difficult to justify. The benefits of such an effort are unlikely to be worth the (financial, administrative and political) costs. Therefore overall, user fees would not be desirable for the proposed vision of the UHC programme.

Recommendation 3.1.6: Introduce specific purpose transfers to equalize the levels of per capita public spending on health across different states as a way to offset the general impediments to resource mobilisation faced by many states and to ensure that all citizens have an entitlement to the same level of essential health care.

Ensuring basic health care services to the population, like poverty alleviation or universal elementary education, has nation-wide externalities and is also consistent with principles of equity. The fundamental rationales for the central transfers are to (i) ensure that all states devote sufficient resources to ensure the NHP for their entire population; and (ii) reduce inequalities in access and financial protection arising from the

fact that poorer states have lower levels of government health spending than do richer states. Therefore, a substantial proportion of financing of these services can and should come from the Central government even though such health services have to be provided at sub-national (state) levels. The extent of Central and state contributions should depend on the perceived degree of nation-wide externality versus state-wide externality as well as the efforts to promote equity and fairness. An appropriate transfer scheme from the Central government to states must be designed to reduce the disparity in the levels of public spending on health across states and to ensure that a basic package of health care services is available to every citizen in every state across the country. It is however important, while designing such a transfer scheme, to ensure that states do not substantively substitute Central transfers for their own contribution to health. States should not only continue to contribute as much as they do now on health care, but also proportionately increase their budget allocations for health over the years. In other words, the transfers received from the Central government along with the matching contribution by the states should constitute additional public spending on health - and should not be used to substitute spending from own resources by the states. This is all the more important because, as noted earlier, the existing pattern of resource allocation by India's State and Central governments, collectively result in one of the lowest priorities given to health of any country in the world.

Recommendation 3.1.7: Accept flexible and differential norms for allocating finances so that states can respond better to the physical, socio-cultural and other differentials and diversities across districts.

A major factor accounting for the low efficiency of public spending has been the practice of the Central government to develop and enforce

uniform national guidelines for similar transfers for health across all states. Such a practice fails to take into account India's diversity and contextual differences. It also fails to properly incentivize state governments to draw up their own health plans in keeping with the needs of communities. We, therefore, recommend that the Central government should adopt a fiscal transfer mechanism that allows for flexible and differential financing from the Central government to the states. This will also allow for Central transfers to better meet the diverse requirements of different states, and enable states to develop health plans that are consistent with the health care needs and requirements of their populations.

Recommendation 3.1.8: Expenditures on primary health care, including general health information and promotion, curative services at the primary level, screening for risk factors at the population level and cost effective treatment, targeted towards specific risk factors, should account for at least 70% of all health care expenditures.

We envisage a major role for primary health care in the UHC system. The coverage of essential primary care services for maternal and child health, vision, oral health and hearing remains inadequate. The infectious disease burden in several parts of the country continues to be very high. Early identification and treatment of these diseases coupled with prevention at the community level is the only way for us to reduce this burden. The widespread burden of malnutrition including easily treatable conditions such as iron-deficiency anaemia can only be dealt with at the primary care level. At the same time, the surge in chronic illnesses, along with unipolar depression, cardio-vascular disease and diabetes are rapidly becoming dominant burdens of disease. An ageing population is also increasingly likely to require home-based or community-based

long-term care. We therefore recommend earmarking at least 70% of public expenditures, both in the short-run and over the medium term, for preventive, promotive and primary health care in order to reap the full benefits of UHC.

Recommendation 3.1.9: Do not use insurance companies or any other independent agents to purchase health care services on behalf of the government.

Having recommended that general taxation and other deductions from the non-poor should be pooled to provide UHC, this recommendation deals with how pooled funds can be used to provide and, if necessary, purchase health care. In the context of delivering UHC, we have examined three options: (i) direct provision; (ii) direct provision plus contracted-in services; and (iii) purchase by an independent agency.

We have made the case for complementing the direct provision of health services by the government with the purchase of additional services from contracted in private providers by the government. This, we have argued, is more practical and desirable than relying exclusively on direct provision of health services by the public sector. Independent agencies in the private sector and insurance companies under schemes such as the Rashtriya Swasthya Bima Yojana (RSBY) have been able to achieve expected enrolment, utilisation levels and fraud control. However, we believe that for a number of reasons, this mechanism is not appropriate for the UHC system. Concerns regarding purchase by an independent agency do not stem from the anxiety that they may perform the assigned tasks poorly, but from more basic design flaws and difficulties in scaling up this approach to deliver UHC. The use of independent agents fragments the nature of care being provided, and over time, leads to high health care cost inflation and lower levels of wellness. It becomes necessary, therefore, to either explore a

completely different approach towards the use of insurance companies and independent agents - more in the "managed care" framework, where they take on explicit population level health outcome responsibilities or invest further in the capacity of the Ministries and Departments of Health to directly provide and purchase services from contracted-in private providers wherever necessary. We favour the latter option.

Recommendation 3.1.10: Purchases of all health care services under the UHC system should be undertaken either directly by the Central and state governments through their Departments of Health or by quasi-governmental autonomous agencies established for the purpose.

We recommend that the central and state governments (Departments of Health or specific-purpose quasigovernmental autonomous agencies with requisite professional competencies created by them) should become the sole purchasers of health care for UHC delivered in their respective jurisdictions. Provisioning of health services at primary, secondary and tertiary levels should be integrated to ensure equitable and efficient procurement and allocations. We believe that it is possible to substantially reform the manner in which Ministries and Departments operate so that they can become effective purchasers of health care services. District-specific assessment of health care needs and provider availability, communicated by the Director of District Health services, should provide the basis for state level purchase of services. The example of the Tamil Nadu Medical Services Corporation, which has functioned as an efficient agency of the State in Tamil Nadu, could serve as a possible model.

We recognise the limited capacity within government and envisage that, to begin with, purchases may need to be centralized at the state level. However, over time, it is possible to foresee

a system where the district health system managers may eventually be able to purchase and enhance quality of care by using a variety of methods and also keep costs as well under control. State governments should consider experimenting with arrangements where the state and district purchase care from an integrated network of combined primary, secondary and tertiary care providers. These provider networks should be regulated by the government so that they meet the rules and requirements for delivering cost effective, accountable and quality health care. Such an integrated provider entity should receive funds to achieve negotiated predetermined health outcomes for the population being covered. This entity would bear financial risks and rewards and be required to deliver on health care and wellness objectives. Ideally, the strengthened District Hospital should be the leader of this provider network.

Recommendation 3.1.11: All government funded insurance schemes should, over time, be integrated with the UHC system. All health insurance cards should, in due course, be replaced by National Health Entitlement Cards. The technical and other capacities developed by the Ministry of Labour for the RSBY should be leveraged as the core of UHC operations - and transferred to the Ministry of Health and Family Welfare.

Smoothly transforming over time, the RSBY into a universal system of health entitlements and building on its existing capacity and architecture to issue citizens with a National Health Entitlement Card with a minimum amount of disruption, would in our view be the best way forward to satisfy the social objectives of both NRHM and RSBY. A high level of capacity has been developed within the Ministry of Labour for the management of the RSBY. This capacity should be utilized for the roll out of the UHC system even if the functions performed by the insurance companies will now be performed by the Ministries and Departments of Health.

In addition, the proposed UHC system is a modified version of the traditional health insurance model with a few critical differences in terms of provider network and design which, in our view, are essential for realizing better health care access and cost outcomes. It has all the characteristics of traditional health insurance in terms of risk pooling and financial protection. The proposed UHC system focuses on reduction of the disease burden facing communities along with early disease detection and prevention. The emphasis is on investing in primary care networks and holding providers responsible for wellness outcomes at the population level. It places emphasis on an extensive and high quality primary care network, which in turn is likely to reduce the need for secondary and tertiary facilities.

Moreover, effective triaging and management

of patients can ensure quick treatment times. Traditional insurance schemes, including those being funded by the government (such as RSBY and the Rajiv Aarogyasri Healthcare Insurance Scheme) are entirely focused on hospital networks rather than primary care services. The advantages of such a network design for consumers are a large supply of hospitals in the network and short waiting times for hospital admissions. However, since there is virtually no focus on primary level curative, preventive, and promotive services and on long-term wellness outcomes, these traditional insurance schemes often lead to inferior health outcomes and high health care cost inflation.

The transition to the UHC system resulting from the above recommendations is captured in Table 1:

Table 1. Transition in health financing and insurance to Universal Health Coverage

	2011	2017	2020
Tax financing	Relatively low	Increasing	Relatively high
Private financing	Relatively high	Decreasing	Relatively low
Employer-employee contribution	Relatively low	Increasing	Relatively high
Coverage	Mostly rich and targeted poor	Expanded coverage to include poor and other targeted communities	Universal
User fees	Prevalent	Eliminated	Eliminated
Central Government insurance schemes	Large numbers catering to different groups	Reduced in numbers; merged with the UHC system	None - and integrated fully with the UHC system (including CGHS,ESIS and schemes for the railways and other public sector institutions)
State government insurance schemes	Option open subject to state government financing	Option open to top up Central Government's UHC-National Health Package (NHP) funding subject to state government financing	Option open to top up Central Government's UHC-NHP funding subject to state government financing
Private (including community-based) insurance schemes	Large variety with option to individuals to top up government coverage	Large variety with option to individuals to top up government coverage	Large variety with option to individuals to top up government coverage

3.2 Health Service Norms

The absence of a dedicated cadre of health care professionals at the village level, the inability of people to establish last-mile connectivity with the health system, and the poor responsiveness of public systems to community needs represent major challenges that India faces in the provision of primary health care. Service delivery at every level - from the village to district and beyond - needs to be strengthened by providing adequate infrastructure, equipment, drugs, human resources, and technology support at all facilities. Special attention needs to be paid to the health needs of the urban poor as well as tribal and remote populations. Norms of health care need to be reconfigured to ensure quality, universal reach, and accessibility of health care services.

In this section, we recommend norms for the physical provision of services at different levels.

Recommendation 3.2.1: Develop a National Health Package that offers, as part of the entitlement of every citizen, essential health services at different levels of the health care delivery system.

A panel of experts should determine the package of services taking into account the resource availability as well as the health care needs of the country. Timely preventive, promotive, diagnostic, curative and rehabilitative services should be provided at appropriate levels of health care delivery. Packages of health care services that cover common conditions and high impact, cost-effective care interventions for reducing health-related mortality and disability should be created at different levels and designed on the basis of recommended levels of care. The packages should correspond to disease burdens at different levels, such that appropriate services can be provided at different levels of care. We envisage five levels of care: Level 1 packages

should correspond to services that are guaranteed at the village and at the community level in urban areas, Level 2 packages should be offered at the Sub-Health Centre (SHC), Level 3 packages should correspond to services guaranteed at the Primary Health Centre (PHC), Level 4 packages should be offered at the Community Health Centre (CHC), and Level 5 packages should cover services guaranteed at the district hospitals, medical college hospitals and other tertiary institutions. The Report contains an illustrative listing of essential health services offered as packages at Level 1 through Level 5. Level 1, Level 2 and Level 3 cover primary services; Level 4 covers some primary services and secondary services, while Level 5 includes secondary and tertiary services. Ensuring such an overlap at each of the facilities is intended to ensure much-needed continuum of care.

Recommendation 3.2.2: Develop effective contracting-in guidelines with adequate checks and balances for the provision of health care by the formal private sector.

We believe, that in addition to the public sector, the formal private sector can play an important role in delivering UHC-mandated health care. The contracting-in of private providers (including for-profit companies, NGOs and the non-profit sector) is needed to complement government-provided health services and fulfil the health care service guarantees of the UHC system. The private sector has the capacity for innovation and invention; it can supplement capital expenditure requirements for developing necessary health infrastructure, provide an element of choice to the customer and ensure that all the service providers have competitive quality benchmarks. However, in our view, the engagement model for leveraging the private sector would have to go well beyond the narrow understanding of the conventional public private partnership (PPP) model. We advocate a shift

from a primary focus on garnering additional financial resources from the private sector or subsidizing it, to an approach in which there is a well-defined service delivery partnership between government as a purchaser and the private sector as a provider. This would, among other things, require (i) a strong regulation, accreditation, and supervisory framework based on state-level decision-making on the degree of UHC provision (complete at least 75 per cent of 17 Executive Summary out-patient and 50 per cent of in-patient services); (ii) control of the manner in which various inputs are deployed by the provider; (iii) careful tracking of both immediate as well as longer-term outcomes; and (iv) a specifically designated customer group to be served by the provider. We also recommend that all such PPP arrangements should be mandatorily brought under the purview of the Right to Information Act, and be subject to social audits as well as selective audit by the Comptroller and Auditor General of India.

Recommendation 3.2.3: Reorient health care provision to focus significantly on primary health care.

A strong primary health care approach, backed by the reallocation of sufficient resources, should guide the reorientation of health care service delivery. This is likely to assure citizens greater access to essential health services and better quality of care. The greater focus on prevention and the early management of health problems is likely to reduce the need for complicated specialist care and the costs of curative care treatment. Well-functioning primary health care teams can also potentially promote health equity by improving social cohesion, reducing discrimination, and empowering communities to improve their health conditions.

A village-level team should provide appropriate components of the National Health Package of services (Level 1) and have 24x7 telecom connectivity to facilities at higher levels. The focus on primary care will contribute to the cost-effectiveness of the UHC system by emphasizing preventive and basic care and linking individuals to secondary and tertiary levels of care only when needed. Sub-Health Centres (SHCs), Primary Health Centres (PHCs), Community Health Centres (CHCs), and district health institutions should have additional mandates, personnel, and facilities to provide more advanced services than presently provided.

Recommendation 3.2.4: Strengthen District Hospitals.

The District Hospital has a critical role to play in health care delivery and health professional training under the UHC system, both of which should be well attuned to the needs of the particular district, while conforming to national standards of health care provision. An adequately equipped and suitably staffed district hospital, backed by contracting-in of regulated private hospitals, should aim to meet the health care needs of at least 95% of the population within that district, so that only a small number would need referral to higher level tertiary care centres. This will require the upgrading of district hospitals as a high priority over the next five years.

Recommendation 3.2.5: Ensure equitable access to functional beds for guaranteeing secondary and tertiary care.

It is important to ensure that functional beds are available at appropriate levels to deliver health care services corresponding to the National Health Package proposed at that facility. This will require an increase in the bed capacity to at least 2 functional beds per 1000 population by 2022.

We believe that when compared with the global average of 2.9 beds per 1000, this is an appropriate target for India since the emphasis on early interventions, prevention, and promotive health practices as well as an increased use of out-patient care under the UHC system are likely to progressively reduce the need for hospital beds. At the same time, it is necessary to ensure equitable distribution so that a sufficient number of functional beds are available in small towns and rural areas. Today, a majority of the beds in government facilities as well as in the private sector are located in urban areas, leaving a large capacity gap in rural and semi-urban areas. This imbalance has to be corrected to achieve UHC.

Recommendation 3.2.6: Ensure adherence to quality assurance standards in the provision of health care at all levels of service delivery.

We recommend adherence to Indian Public Health Standards (IPHS) by all public and contracted-in private health facilities responsible for delivering the NHP as the starting point of large scale commitment to quality assurance in health care service delivery. Such a move should include licensing, accreditation and public disclosure of the accreditation status of all public and private health facilities. All health facilities should be licensed by 2017 to ensure compliance with the latest IPHS standards. Accreditation should be linked to National Health Packages offered at a facility. All health care providers should prominently display their accreditation certificate to the public. The public should be educated on services available at facilities through appropriate health communication programmes. We recommend the creation of a National Health and Medical Facilities Accreditation Unit (NHMFAU)- discussed later under section 3.6 on management and institutional reforms - to serve as the regulatory and accreditation body that defines the standards of

health care offered at different levels, oversee efficient use of resources by facilities and provide supportive services to populations and facilities.

Recommendation 3.2.7: Ensure equitable access to health facilities in urban areas by rationalizing services and focusing particularly on the health needs of the urban poor.

We recommend a new urban UHC system that offers the defined package of services at each level through clearly designated primary, secondary and tertiary health care facilities. Cities and towns should have the flexibility to design such a system that includes community-based urban nurse practitioners, appropriate service delivery channels and provider partnerships. The efficiency of public health systems in urban areas should be strengthened by improving primary urban health services, urban health care infrastructure, and designated referral facilities. Local urban governing bodies should promote enhanced community participation in the health care delivery system and inter-sectoral convergence of interventions in order to improve health outcomes.

3.3 Human Resources for Health

India's health care delivery system faces multiple shortages. The increased emphasis on primary health care as the core of the UHC system requires appropriately trained and adequately supported practitioners and providers with relevant expertise to be located close to people, particularly in marginalised communities. At the same time, the existing practice of loading managerial functions on to health care providers (who do not have the requisite management training) needs to be discontinued, and replaced by a professional public health managerial cadre to ensure a safe, effective and accountable health system.

Our recommendations have two implications. One, they will result in a more equitable distribution of human resources - two, we estimate that the UHC system can potentially generate around 4 million new jobs (including over a million community health workers) over the next ten years.

In this section, we offer recommendations for augmenting and strengthening the performance of professional and technical health workers. Section 3.6 that follows, deals with human resources needed for strengthening the management of health services.

Recommendation 3.3.1: Ensure adequate numbers of trained health care providers and technical health care workers at different levels by a) giving primacy to the provision of primary health care b) increasing HRH density to achieve WHO norms of at least 23 health workers per 10,000 population (doctors, nurses, and midwives).

More specifically, we propose the following:

- * **Community health workers (CHWs):** We recommend doubling the number of community health workers (CHW's or Accredited Social Health Activists (ASHAs) as they are now called) from one per 1000 population to two per 1000 population in rural and tribal areas. At least one of them should be female and offered the opportunity to train as an auxiliary nurse midwife in future. We also recommend the appointment of a similarly trained CHW for every 1000 population among low-income vulnerable urban communities. The CHWs should provide preventive and basic curative care, promote healthy life-styles, serve on health and sanitation committees, and

enable people to claim their health entitlements. CHWs should be paid a fixed compensation supplemented by performance-based incentives. We estimate that close to 1.9 million CHWs will be needed to meet the requirements of the proposed UHC system.

- * **Rural health care practitioners:** We recommend the introduction of a new 3-year Bachelor of Rural Health Care (BRHC) degree programme that will produce a cadre of rural health care practitioners for recruitment and placement at SHCs. In the short term, health providers from recognised systems of medicine, (e.g., Ayurveda), dentists and nurses could be deployed upon completion of bridge courses to acquire appropriate competencies to follow standard management guidelines and provide the NHP. In the longer term, rural health practitioners should receive degree training in BRHC courses and be deployed locally at the SHC level. Appropriately trained nurse practitioners at urban health centres will ensure the provision of preventive, primary and curative care.

- * **Nursing staff:** The core of the proposed UHC system is its increased reliance on a cadre of welltrained nurses, which will allow doctors to focus on complex clinical cases and enable routine care to be delivered by other cadres, especially at the CHC level. In our estimate, for instance, the service guarantees under UHC will require an increase in the availability of nurses from around 900,000 today to 1.7 million by 2017 and 2.7 million by 2022. The increased availability and absorption of nurses into the UHC system will ensure that the nurse and midwife (including Auxiliary Nurse/ Midwives [ANMs]) per allopathic doctor ratio goes up from the present level of 1.5:1 to the preferred ratio of 3:1 by 2025.

- * **Allopathic doctors:** Meeting the requirements of UHC will call for an improvement in the country's allopathic doctor-to-population ratio from around 0.5 per 1,000 population today to a well-measured provision approaching one doctor per 1,000 by the end of the year 2027. These additional doctors are essential for meeting the requirements of health facilities in both public and private sectors.
- * **AYUSH doctors:** The proposed UHC system will require the active engagement and participation of appropriately trained AYUSH practitioners, especially in states where there are existing shortages of allopathic doctors. Selected AYUSH doctors may support the provision of primary care through bridge courses to upgrade skills and broaden access to care via the creation of designated posts at primary health centres, community health centres as well as district hospitals.
- * **Allied health professionals:** Ensuring effective delivery of the National Health Package will require the recruitment of adequate numbers of dentists, pharmacists, physiotherapists, technicians, and other allied health professionals at appropriate levels of health care delivery. We find that while there are adequate pools of such health worker categories in India, their availability needs to be ensured equitably across all states.

Table 2 summarizes the profile of the nurses and allopathic doctors that is expected to evolve by 2022 as a result of our recommendations.

It is expected that a 3:1 ratio of nurses and midwives (including Auxiliary Nurse/Midwives) per doctor and coverage of one doctor per 1000

population will be achieved by 2025 and 2027 respectively to meet the requirements of both public and private sectors.

Table 2. Projected availability of allopathic doctors and nurses

	2011	2017	2022
(1)	(2)	(3)	(4)
Allopathic doctors, nurses and midwives per 1000 population	1.29	1.93	2.53
Population served per allopathic doctor	1,953	1,731	1,451
Ratio of nurses and midwives to an allopathic doctor	1.53	2.33	2.94
Ratio of nurses to an allopathic doctor	1.05	1.81	2.22

While a substantial scale-up of the health workforce is needed across several cadres, priority should be accorded to the development and deployment of non-physician health care providers, ranging from community health workers to midlevel health workers (including BRHC practitioners and nurse practitioners). Doctors are of great value in providing certain types of health care, yet primary health care services should not be doctor dependent. Even in secondary and tertiary care, skilled support services should be provided by suitably trained nurses and allied health professionals. Planning for health professional education should reflect this paradigm.

We believe that, for UHC, health care needs rather than population norms should guide the deployment of human resources at different levels of health care service provisioning. In this regard, State governments are best situated to plan for the human resource needs of different districts. Nevertheless, we suggest the following measures (subject to their appropriateness for the local context and conditions) to fill in some obvious gaps in the deployment of human resources at different levels:

- * **Village and community level:** We recommend, on average, two community health workers (ASHA) who should work alongside and in partnership with Anganwadi Workers (AWW) and their *sahayikas* (helpers) in villages. There should also be one similarly trained CHW for every 1000 population among low-income vulnerable urban communities.
- * **Sub-health centre level (SHC):** It would help to ensure that there are at least two ANMs and one male health worker in every SHC as per the existing 2010 IPHS norms. We recommend supplementing the existing staff at this level with the addition of one BRHC practitioner.
- * **PHC level:** This is the first level where a team of doctors along with nurses and technicians will be available. In addition to the existing staff prescribed as per the 2010 Indian Public Health Standard (IPHS) norms, we recommend an AYUSH pharmacist, a full-time dentist, an additional allopathic doctor and a male health worker to ensure that primary health care needs are adequately met.
- * **CHC level:** The CHC should serve as the access point for emergency services including caesarean section deliveries, new born care, cataract surgeries, sterilisation services, disease control programmes and dental care. For a 'standard' CHC, we recommend a substantial increase in the number of nurses (to around 19) and the addition of a head nurse, a physiotherapist and a male health worker.

Our Report contains similar suggestions relating to health and technical staff for sub-district, district and medical college hospitals.

Recommendation 3.3.2: Enhance the quality of HRH education and training by introducing competency-based, health system-connected curricula and continuous education.

Curricula in medical schools should keep pace with the changing dynamics of public health, health policy and health demographics. Medical education also requires greater orientation of providers to the social determinants of health as well as to gender and equity issues. Health professional education should be directed towards population-based primary and preventive health care instead of being driven by a curative-treatment paradigm. Medical and nursing graduates in the country should be well trained, prepared and motivated to practice in rural and urban environments. It is equally important to ensure that on-going training and advancement opportunities are offered to community health workers serving in villages and urban areas. These workers, who provide essential outreach to patients as well as feedback on emerging problems in the health system, need decentralized, intra-district training. Systems of continued medical education and continued skill improvements - linked to promotions and renewal of license to practice - should be introduced. We recommend 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.

Recommendation 3.3.3: Invest in additional educational institutions to produce and train the requisite health workforce.

We propose the setting up of the following new institutions to meet the additional human resource

requirements of the UHC system and to correct the imbalances in the distribution of nursing and medical colleges in the country.

Nursing schools and colleges: There have been some improvements since 2005, with the addition of new nursing schools in as many as 12 states. But these are still insufficient to meet the requirements of UHC due to the inequitable distribution of these schools. Some 149 districts in 14 high focus states do not have any nursing school or nursing college as of 2009. We propose setting up new nursing schools and new nursing colleges over the next decade focusing mainly on underserved states.

Schools for ANMs: Many Sub-Health Centres (SHCs) face shortages of ANMs. For instance, most SHCs in Bihar and Uttar Pradesh do not have ANMs even though the mandate is to have two ANMs per SHC. We estimate that around 230 additional schools for ANMs would need to be established specifically in underserved states of Assam, Bihar, Gujarat, Jammu and Kashmir, Jharkhand, Meghalaya, Mizoram, Sikkim, Rajasthan, Tripura, Uttar Pradesh and West Bengal.

Medical colleges: The highly uneven distribution of medical colleges has resulted in the skewed production and unequal availability of doctors across the country. There is, for instance, only one medical college for a population of 11.5 million in Bihar and 9.5 million in Uttar Pradesh, compared to Kerala and Karnataka who have one

medical college for a population of 1.5 million. We therefore recommend selectively setting up (an estimated 187) new medical colleges over the next 10 years in currently underserved districts with a population of more than 1.5 million.

Concerns about 'over-medicalisation' must be considered along with the need to correct the severe imbalance in the distribution of medical colleges in the country. We do not view the medical colleges merely as production units for doctors. Instead, we see each medical college as an integral part of the health system, responsive to and partly responsible for the health needs of one or two districts. In addition, medical colleges also serve to train nurses and other allied health professionals. We believe this purpose can be served by functionally linking medical colleges to district hospitals and mandating a substantial proportion of local student enrolment. We recognise that the establishment of such a large number of new medical colleges would pose a logistical challenge due to shortage of faculty as well as the limited resources that state governments may be willing to commit for creating the required infrastructure. We believe, however, that once again, linking the new medical colleges to district hospitals will, to a large extent, help overcome these problems.

Table 3 presents illustrative estimates of new educational institutions that would be needed in different states to meet the human resource requirement for the proposed UHC system.

Table 3. Estimated need for new HRH educational institutions

States	Medical Colleges	Nursing Colleges	Nursing Schools	ANM Schools
(1)	(2)	(3)	(4)	(5)
Arunachal Pradesh	-	1	2	-
Assam	8	9	11	10
Bihar	27	16	102	46
Chhattisgarh	7	-	-	-
Gujarat	8	-	2	15
Haryana	5	-	2	-
Jammu and Kashmir	1	2	5	2
Jharkhand	10	4	14	2
Madhya Pradesh	18	-	21	-
Maharashtra	3	-	5	-
Meghalaya	1	-	-	1
Nagaland	-	1	3	1
Odisha	10	7	15	-
Punjab	3	-	-	-
Rajasthan	17	-	-	28
Sikkim	-	-	-	1
Tripura	-	1	2	2
Uttar Pradesh	49	9	162	99
Uttarakhand	-	2	4	-
West Bengal	20	6	32	25
TOTAL	187	58	382	232

Recommendation 3.3.4: Establish District Health Knowledge Institutes (DHKIs).

We propose the setting up of District Health Knowledge Institutes (DHKIs) in districts with a population of more than 500,000 in order to enhance the quality of health workers' education and training. These institutes should offer degree and diploma programmes, certificate courses, accreditation and standardized professional training. Their location, at the district level, should make them accessible to local candidates and facilitate uniformity in admissions, curricula and licensing.

The DHKIs should address the severe shortage of educational infrastructure and provide the appropriate level of decentralisation of health care education. They should also ensure competency-based training to meet the health needs of local communities. Our recommendation echoes the proposal by the Bajaj Committee that advocated the creation of a "District Institute

of Education and Training" to offer "integrated training modules." The DHKIs shall deliver integrated training for all health, nutrition and family welfare programmes. The proposed BRHC degree as well as bridge courses in rural health care should be housed in the DHKIs so that locally recruited personnel have opportunities for practicum placements at Sub-Health Centres. Local candidates from various districts should be supported through the reimbursement of tuition fees and free accommodation. The DHKIs should also be the centre for training allied health professionals.

Recommendation 3.3.5: Strengthen existing State and Regional Institutes of Family Welfare and selectively develop Regional Faculty Development Centres to enhance the availability of adequately trained faculty and faculty-sharing across institutions.

The need to upgrade skills of existing health workers as well as recruit new staff requires the rapid scaling up of HRH educational and skill development training institutions for faculty development and continuing education. To begin with, we recommend that the scope of the 44 State and Regional Institutes of Health and Family Welfare (SIHFWs and RIHFWs) should be expanded and strengthened to include support for management cadres and implementers of national health programmes. In addition, we recommend the setting up of 20 regional centres for faculty development and sharing of faculty across educational institutions. The RIHFWs and SIHFWs should become the nodal institutes for the coordination of all induction and in-service trainings and educational programmes, and for this purpose, work closely with DHKIs. This will facilitate the creation of competency based curricula relevant to local needs for primary health care programmes.

Recommendation 3.3.6: Establish a dedicated training system for Community Health Workers

Training programmes at the time of induction as well as for continuous upgrading of knowledge and skills will be required for ensuring that the estimated 1.9 million CHWs in rural and urban areas are well equipped to perform their functions. We recommend the establishment of a dedicated training system that consists of several teams in every district, under the aegis of District Health Knowledge Institutes. Each team should consist of three members and be responsible for training and evaluating around 300 CHWs on a continuous basis. An appropriate structure of support and supervision for these teams needs to be put in place at the district level. Non-governmental organisations should be actively sought out for providing training and support to CHWs.

Recommendation 3.3.7: Establish State Health Science Universities.

We endorse the recommendation of the Bajaj Committee that in 1987 had recommended the establishment of Health Science Universities in states and in groups of Union Territories to award degrees in health sciences and prospectively add faculties of health management, economics, social sciences and information systems. We recommend the creation of Health Science Universities in every state (or a set of states) that will ensure uniformity in admissions, curricula, training and accreditation for all degrees in medical, nursing, pharmacy, public health and allied health professional fields.

Recommendation 3.3.8: Establish the National Council for Human Resources in Health (NCHRH).

We strongly recommend and endorse the setting up of the National Council for Human Resources in Health (NCHRH) to prescribe, monitor and promote standards of health professional education. We support the proposed legislation, awaiting parliamentary consideration, that envisages the establishment of a body to provide overarching regulation of competency based medical, dental, nursing, pharmacy, public health and allied health professional education and to serve as a platform for promoting inter-professional education.

3.4. Community Participation and Citizen Engagement

Communities are not just recipients of care. They have the capacities to create and promote health, by means of social and familial support networks, and the application of local health knowledge. Increased community participation in health care-its delivery, governance and

accountability-represents the deepening of democracy. It can empower people, particularly women, the poor and other marginalised segments of society, and ensure that the delivery of health care services remains appropriate and accountable to them.

Our recommendations seek to strengthen institutional mechanisms for community participation and citizen engagement in order to make health planning, review and implementation more responsive to the voices and needs of communities. They are also intended to promote the involvement of communities and other stakeholders (including health providers and people's representatives) in decision-making on health, and to improve the processes of policy formulation and public decision-making. We believe that planning, review and oversight mechanisms should be decentralized and made participatory in order to ensure effective implementation as well as a high level of transparency and local accountability.

Recommendation 3.4.1: Transform existing Village Health Committees (or Health & Sanitation Committees) into participatory Health Councils.

We propose the transformation of existing Health Committees into Health Councils at all levels - from the village and urban settlement level to block, district, state and the national level. Representatives of civil society organisations (including NGOs, Community Based Organisations, membership organisations, women's groups, trade unions and health providers) should constitute at least 50 per cent of the Council's membership. Each Council should elect its own Chairperson. The composition of the reconstituted Councils will ensure representation of all members of the previously constituted Health Committees, including members of the Gram Panchayat or other elected representative for the

concerned geographical unit and of frontline health workers (such as ANMs, AWWs, ASHAs and CHWs). The reconstitution of existing Committees into Health Councils will expand their roles without adversely affecting their existing functions. The enhanced role of the transformed Councils will include drawing upon the perspectives of the different member-groups and evolving recommendations, by consensus, on health plans and budgets for implementation by designated executive agencies. The Councils should also exercise oversight on performance of the health plan, with monitoring of selected health indicators every six months, and tracking budgeted expenditures. The Councils will thereby bring the strengths of broader representation as well as more frequent monitoring to the existing mechanisms of planning and review.

Recommendation 3.4.2: Organise regular Health Assemblies.

The Health Councils should organise annual Health Assemblies at different levels (district, state and nation) to enable community review of health plans and their performance as well as record ground level experiences that call for corrective responses at the systemic level. By organizing such Health Assemblies, the Health Councils will serve as a bridge between the executive agencies responsible for design and delivery of health services and the wider community, which is the intended beneficiary of such services. Recording the needs and priorities identified by the communities as well as taking note of grievances relating to suboptimal or inequitable performance of health services would enable the Councils to provide constructive feedback to policy makers and health system managers. This will also provide an opportunity to health system managers to explain to the community and find solutions to the constraints that prevented a prompt response to the expressed needs or complaints. Data from the annual report,

finance report, action plan and community monitoring should be presented to the Assemblies for review and feedback.

Recommendation 3.4.3: Enhance the role of elected representatives as well as Panchayati Raj institutions (in rural areas) and local bodies (in urban areas).

Involvement of local elected representatives and Panchayats in health governance can significantly increase the motivation, performance and accountability of community health workers. It can also contribute to much-needed convergence of social services at the community level. For this to happen, local health functions and finances should be devolved to PRIs and local bodies with clear directives and guidelines. The participation of PRIs and other elected representatives in health governance and community oversight through the (Village and Block) Health and Sanitation Committees has been generally inadequate due to operational deficits including low capacities and role ambiguity. These gaps should be addressed through better training, role definition, financial devolution, capacity strengthening, and the establishment of mechanisms through Health Assemblies for greater community oversight. NGOs should additionally be engaged to train PRI representatives in health administration.

Recommendation 3.4.4: Strengthen the role of civil society and non-governmental organisations.

Civil society organisations (CSOs) can contribute effectively to community mobilisation, information dissemination, community-based monitoring of health services and capacity building of community based organisations and workers. They can energize community-level interventions and enhance popular participation in health governance and oversight. In addition to

delivering information on health care entitlements, they can campaign for UHC and facilitate as well as coordinate community participation activities (via Health Assemblies for instance) at block, district, state and national levels. We, therefore, recommend that mechanisms should be developed by both Central and state governments to solicit the active engagement of CSOs and non-governmental organisations including Membership-Based Organisations of the Poor (MBPs), self-help groups, unions, cooperatives and other local community based organisations. Financing mechanisms must be specifically developed and financial resources earmarked for the engagement of CSOs. Also, CSOs with adequate capacities should be engaged for capacity strengthening (training, mentoring, follow-up support in local planning and review processes) of members of Health Councils, community health workers and elected representatives at all levels.

Recommendation 3.4.5: Institute a formal grievance redressal mechanism at the block level.

We recommend the introduction of a systematic and responsive grievance redressal and information mechanism for citizens to access knowledge of and claim their health entitlements. Such a mechanism is urgently required at the block headquarters to deal with confidential complaints and grievances about public and private health services in a particular block. Procedures for corrective measures should be clearly enunciated at each level, with defined parameters for grievance investigation, feedback loop, corrective process, no-fault compensation and grievance escalation. Responsibilities of health department officials should be defined in relation to Grievance Redressal Officers and vice versa, supported by sufficient and clear directives and guidelines or orders, as applicable. This should be linked, at the district level, with an Ombuds

person who functions under the aegis of a National Health Regulatory and Development Authority. Serious grievances and unresolved cases should be referred to the Ombuds person. We recommend the setting up of Jan Sahayata Kendras (People's Facilitation Centres) that should be co-located with the office for grievance redressal in order to locally provide people with information services. But the two should function independently. The Jan Sahayata Kendra should conduct periodic public hearings, and operate a telephone helpline. Wherever possible, these should be managed by local CBOs, MBPs or women's or farmers' groups, trade unions and cooperative societies.

3.5 Access to Medicines, Vaccines and Technology

Ensuring effective and affordable access to medicines, vaccines and appropriate technologies is critical for promoting health security. In making our recommendations, we note that:

- * Almost 74% of private out-of-pocket expenditures today are on drugs;
- * Millions of Indian households have no access to medicines because they cannot afford them and do not receive them free-of-cost at government health facilities;
- * Drug prices have risen sharply in recent decades;
- * India's dynamic domestic generic industry is at risk of takeover by multinational companies; and
- * The market is flooded by irrational, non-essential, and even hazardous drugs that waste resources and compromise health.

Our recommendations address the existing inefficiencies in the supply chain and logistics management of drugs and vaccines as well as due to improper drug prescriptions.

Recommendation 3.5.1: Enforce price controls and price regulation especially on essential drugs.

We recommend the enforcement of price controls and price regulation on essential and commonly prescribed drugs. The current practice of using monopoly and market dominance measures for consideration of price control on drugs needs to be replaced by the criterion of 'essentiality,' which is likely to have maximum spill-over effects on the entire therapeutic category. We recommend the use of 'essentiality' as a criterion and applying price controls on formulations rather than basic drugs. Direct price control applied to formulations, rather than basic drugs, is likely to minimise intra-industry distortion in transactions and prevent a substantial rise in drug prices. It may also be necessary to consider caps on trade margins to rein in drug prices while ensuring reasonable returns to manufacturers and distributors. All therapeutic products should be covered and producers should be prevented from circumventing controls by creating non-standard combinations. This would also discourage producers from moving away from controlled to non-controlled drugs. At the same time, it is necessary to strengthen Central and State regulatory agencies to effectively perform quality and price control functions.

Recommendation 3.5.2: Revise and expand the Essential Drugs List.

We recommend the revision and expansion of the National Essential Drugs List (NEDL) to include appropriate and approved alternative medicines. Public procurement of NEDL drugs should include identified and approved chemical, biological and AYUSH medicines. This will also ensure that AYUSH drugs are available at health facilities, thereby greatly enhancing the contribution of AYUSH doctors. Including new drugs

and vaccines into government drug procurement should, however, be based on scientific evidence and due consideration must be given to safety, efficacy and cost-effectiveness.

Recommendation 3.5.3: Strengthen the public sector to protect the capacity of domestic drug and vaccines industry to meet national needs.³

We recommend strengthening the capacity of the public sector for the manufacture of domestic drugs and vaccines. The public sector can play a crucial role in ensuring sufficient national capacity of essential drugs at affordable prices. This will greatly enhance drug and vaccine security and prevent disruptions, shortages, reductions and cessation of supply. Central and state governments should assist and revive public sector units (PSUs) that manufacture generic drugs and vaccines, limit the voting rights of foreign investors in Indian companies, and take other measures to retain and ensure self-sufficiency in drug production. It is also equally important to strengthen safeguards for intellectual property rights. The Central government must ensure that the patents regime does not compromise drug access and afford ability.

We also need to urgently revisit India's FDI regulations to amend the present rules of an automatic route of 100% share of foreign players in the Indian industry to less than 49%, so as to retain predominance of Indian pharmaceutical companies and preserve our self-sufficiency in drug production.

Recommendation 3.5.4: Ensure the rational use of drugs.

The extensive practice, in both public and private sectors, of prescribing hazardous, non-essential and irrational medicines should be eliminated. In addition to legislative and other regulatory measures, intensive efforts should be made to educate and encourage doctors and citizens to use generic drugs and avoid the use of irrational medicines. Critical for this is the introduction of an IT-enabled electronic system that tracks patient records - discussed later in the section on management reforms. Standard treatment guidelines should also become the basis for mandated and audited rational prescription practices.

Recommendation 3.5.5: Set up national and state drug supply logistics corporations.

We recommend the adoption of centralized national and state procurement systems in order to realize economies of scale and create the conditions necessary to drive down the prices of drugs, vaccines, and medical devices. Towards this end, we recommend the setting up of a national and state level Drug Supply Logistics Corporation for the bulk procurement of low-cost, generic essential drugs. This will enable all providers to access generic drugs with significant cost savings. The Government should also consider setting up at least one warehouse in each district to ensure availability of drugs to all providers.

Recommendation 3.5.6: Protect the safeguards provided by the Indian patents law and the TRIPS Agreement against the country's ability to produce essential drugs.

³ This recommendation did not have unanimity within the HLEG. One member was of the view that reviving public sector capacity for pharmaceutical production, without examining the reasons for failure of previous public sector drug manufacturing units, would not be an appropriate use of resources.

We recommend that the strict protection from any dilution of many safeguards in India's current amended patent law including restrictions on the patenting of insignificant or minor improvements of known medicines (under section 3[d]). Compulsory licenses (CL) should be issued to companies, as and when necessary, to make available at affordable prices all essential drugs relevant to India's disease profile. This provision, under India's own Patents Act and TRIPS as clarified by the Doha Declaration, shall allow countries to use such licenses in public interest and can be invoked in the interest of public health security. Also, the 'data exclusivity clause' must be removed from any Free Trade Agreement that India enters into, since such a clause extends patent life through 'evergreening' and adversely affects drug access and affordability.

Recommendation 3.5.7: Empower the Ministry of Health and Family Welfare to strengthen the drug regulatory system.

It is important to eliminate the multiplicity of responsibilities and jurisdictions of authority relating to pharmaceutical production and regulation by entrusting full responsibility to the Ministry of Health and Family Welfare. The Ministry of Health and Family Welfare must be empowered to introduce interventions for regulating the production of drugs as well as the operation of drug outlets. The functioning of State regulatory agencies should be strengthened by ensuring adequate workforce and testing facilities. Additional financial resources should be earmarked and allocated for setting up drug quality testing facilities in states and for the employment of additional regulators to serve in these facilities and regulatory agencies.

We recommend in public interest the transfer of the functioning of the Department of Pharmaceuticals, which is now under the Ministry of Chemicals and Fertilizers to the Ministry of

Health and Family Welfare. By bringing in both the manufacture of drugs as well as drug price control, the Ministry of Health and Family Welfare will not only be responsible for ensuring the quality, safety and efficacy of drugs but also accountable for the unhindered availability of all essential drugs under the UHC system. This will also help better align drug production and pricing policies to prioritized national health needs.

3.6 Management and Institutional Reforms

Effective management systems are crucial to the successful coordination of multiple resources, diverse communities and complex processes. Better management would also allow for effective coordination of public and private sector efforts to ensure universal health coverage. The public health sector needs to assume the roles of promoter, provider, contractor, regulator, and steward. The private sector's role also needs to be clearly defined and regulated. Systemic reforms must ensure effective functioning and delivery of health care services in both rural and urban areas. Good referral systems, better transportation, improved management of human resources, robust supply chains and data, and upgraded facilities are essential.

We recommend the following set of overarching managerial and institutional reforms:

Managerial reforms: This sub-section deals with measures to augment and strengthen the management functions of the health care delivery system.

Recommendation 3.6.1: Introduce All India and state level Public Health Service Cadres and a specialized state level Health Systems Management Cadre in order to give greater attention to public health and also strengthen the management of the UHC system.

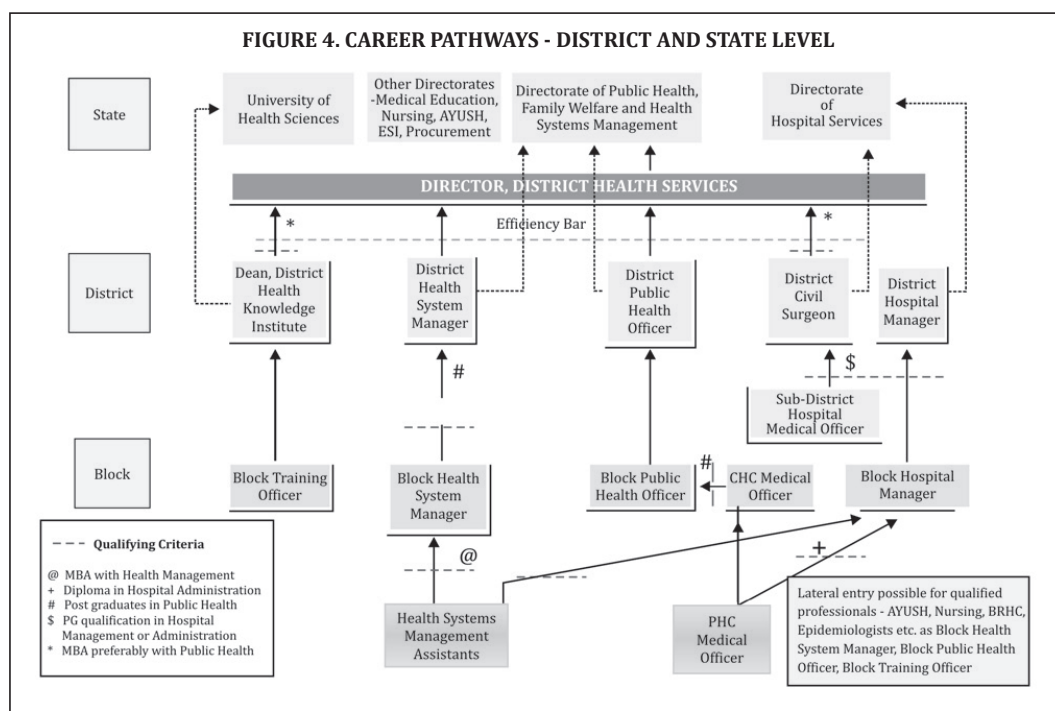
We recommend the creation of an All India Public Health Service Cadre, a new cadre comprising of public health professionals with multidisciplinary education. This cadre will be responsible for all public health functions, with an aim to improve the functioning of the health system by enhancing the efficacy, efficiency and effectiveness of health care delivery. This cadre should be supported by a state level public health cadre starting at the block level and going up to the state and national level. This would be akin to the civil services, which provide for both All-India and state level cadres. While the state-level cadre will provide the operational framework of public health services, the All-India cadre will not only help strengthen state services with a high level of professional expertise but also provide strong connectivity between state and central planning.

We also recommend the creation of a new Health Systems Management Cadre that should be made responsible for managing public sector service provision as well as the contracted-in private sector. Quality assessment and quality assurance for health facilities will be a major function for this cadre. These Health System managers should take over many of the administrative responsibilities in areas such as IT, finance, human resources, planning and communication that are currently performed by medical personnel.

We further recommend the appointment of appropriately trained hospital managers at sub-district, district hospitals and medical college hospitals so as to improve the managerial efficiency and also enable medical officers and specialists to concentrate on clinical activities. Appropriate training of these new cadres is likely

to significantly enhance the management capacities at all levels and end the practice of untrained personnel being assigned to manage health institutions. These cadres should be well integrated with other departments and functionaries to address both the management and public health related inadequacies in the present system and to incorporate principles of professional management into decision-making in health institutions.

While health services systems in the states will always have medical professionals within their ambit, there is an urgent need for appropriately qualified and experienced professionals with public health degrees to fill gaps in critical areas of preventive and promotive services. This will involve broad health system strengthening efforts as well as the design and delivery of specific health programmes. State governments should consider the practice initiated by Tamil Nadu of creating a separate Directorate of Public Health with a dedicated public health workforce, and the practice adopted by states such as Andhra Pradesh, Gujarat, Madhya Pradesh and Odisha of deputing in-service candidates to public health courses to develop public health cadres. Such courses should be made mandatory for all posts with public health responsibilities. There is, however, an urgent need to establish public health training institutions and strong partnerships with health management training institutions in both the public and private sectors. We present below in Figure 4, an illustrative management structure showing the different strands of health professionals that could evolve at different levels of the health care delivery system. The organogram also shows the career paths for different cadres of health professionals with options both for promotion as well as shifting streams for advancement of careers.



Recommendation 3.6.2: Adopt better human resource practices to improve recruitment, retention motivation and performance; rationalize pay and incentives; and assure career tracks for competency-based professional advancement.

We recommend that transparency in recruitment, clear paths for career progression and performance incentives should be introduced. Among the measures to consider would be the following:

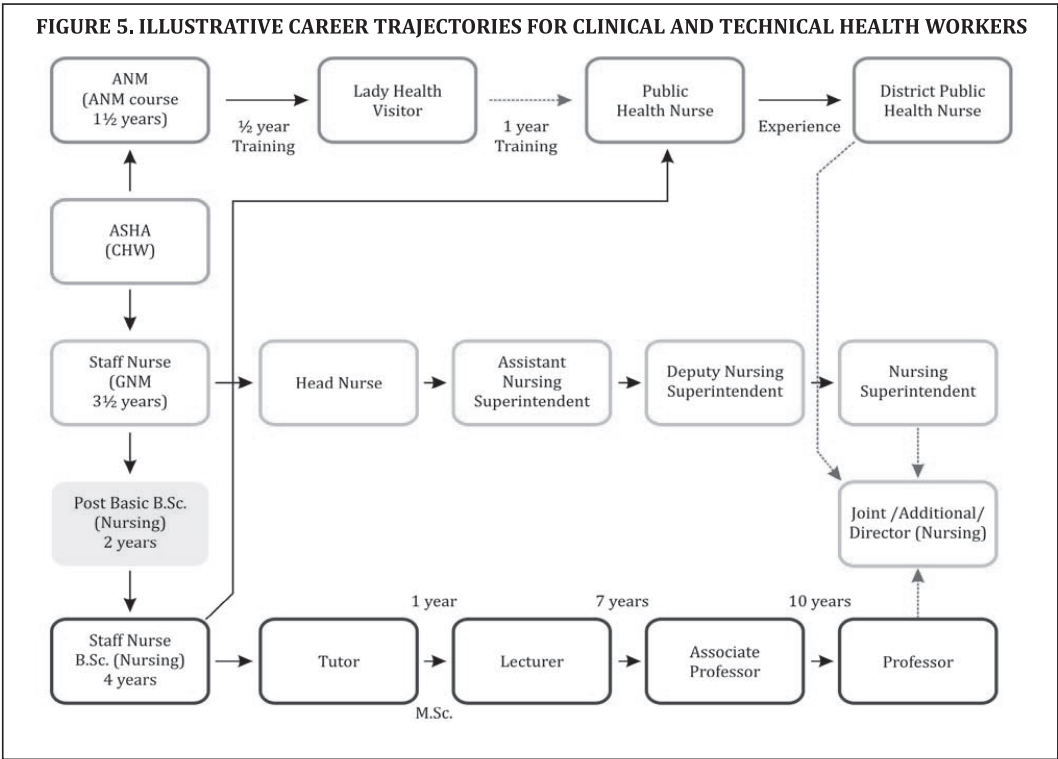
- * Creation of requisite posts and filling up of all vacant posts regularly in a time bound manner;

- * Implementation of transparent transfer policies;
- * Fixed tenure especially in the hardship areas and provision of residential accommodation in hardship areas
- * Career progression for doctors through reservation of Post-Graduate seats in medical colleges;
- * Bridge courses and study leave, time bound promotions based on performance, contractual appointments based on equal pay which are regularized on satisfactory completion of two or three years of service;
- * Monetary compensation and incentives such as rural area allowance, additional hardship area allowance, child education allowance and transport allowance;

- * Appointment of doctors and nurses as full-time staff in the public sector, duly compensated and on parity with their colleagues in other sectors; and
- * Revision of job responsibilities and duties as well as task shifting and task sharing to appropriate cadres, (e.g., administrative tasks shifted to health systems managers, specific clinical functions of doctors and nurses to BRHC practitioners and nurse practitioners).

These steps are likely to improve the ability of the health system to attract, recruit, retain and motivate health personnel in under served areas, optimize their competencies and encourage team work for larger impacts on health outcomes.

Also, critical for improving the efficiency and motivation of health workers is to have well-defined career trajectories. For technical and clinical health workers, we propose the following (Figure 5):



We recommend that ANMs, after promotion as LHV, should be considered for the posts of Public Health Nurses (PHNs), advancing further to District Public Health Nurses (DPHNs) subject to their completion of a year-long DPHN course. The present lateral entry of clinical nurses to the posts of PHN could be retained subject to their completion of a PHN course and a minimum of 5 years working experience in PHCs. The ANM cadre should be provided with year-long courses in midwifery education (diploma in nursing education) so that they can pursue academic careers at ANM schools and LHV training schools. ANMs should be provided opportunities to become staff nurses facilitated through the reservation of seats in nursing schools.

Similarly, CHWs (or ASHAs) who are outstanding performers should be provided with opportunities to advance their careers by reservation of seats in ANM and nursing schools. Similarly, nurses should also have opportunities in the teaching cadre to become a Tutor, Lecturer, Associate Professor and Professor. We recommend that bridge courses be provided for clinical areas such as operation theaters, ICUs as well as clinical super specialty areas of cardiology and psychiatry for their professional development as nurse practitioners. The nursing cadres should also be provided bridge courses in nursing education, nursing administration, hospital management and health management to enable them to take up administrative posts at facility, block, district and state levels. Such career progression paths are also recommended for male health workers, laboratory assistants, technicians and other categories of health workers.

Effective systems of performance assessment should guide human resources in recruitment, training, mentoring, supervising, and motivating personnel. Managing for equitable results (to

ensure equity) and value for money (to ensure efficiency and cost effectiveness) should drive the performance of the proposed UHC system. Formal systems of performance appraisal should be applied to health workers at every level and used as a basis for awarding individual and group incentives - both monetary and non-monetary.

Recommendation 3.6.3: Develop a national health information technology network based on uniform standards to ensure inter-operability between all health care stakeholders.

Establishing a credible information technology (IT) system is necessary for ensuring effective implementation of the UHC system. A robust health IT network will help cater to the current and growing needs of over a billion people and navigate the complexities of governance structures, multiple health systems and a combination of public and private providers. Such a system cannot be introduced in one go, and will have to grow as the UHC system itself evolves. It is, therefore, important to ensure an effective IT infrastructure, allocate special funds to build IT infrastructure, and link all facilities and not only public hospitals with a system-wide integrated information network. We propose the adoption of system-wide Electronic Medical Records; this is critical for the health IT network to track and monitor diseases, expenditures and performance to deliver both favourable health and financial outcomes.

A national health IT network should help build an epidemiological database to determine district-wise disease burden, and also monitor outcomes including, for example, mortality rates, hospital admission rates, disease profiles at PHCs and hospital bed occupancy ratios. Process re-engineering should be part of building the IT system to ensure standardized reporting formats from all institutions to track health expenditures

accurately at different levels of care. Such information is critical for effective and efficient allocation of financial resources from the Central government. The network should connect all public and private health care facilities and governing departments through information exchanges. Common national regulations should govern the IT system.

We recommend the establishment of a health system portal that uses information technology to track services and finances. Electronically linked NHECs should track patients and ensure the portability of medical histories while ensuring full confidentiality of data and preventing misuse and abuse of data by for profit-making purposes. Medical and health service usage should be tracked to create a central database that provides the necessary information to manage the system effectively. The larger IT system should include portals for patients that assist in scheduling visits, sharing of test results, delivering personalized health promotion and communication and interact with communities, support networks, and health care providers.

A considerable amount of work has been done in this regard within the Ministry of Labour as a part of its efforts on RSBY. There is also a proposal with the Ministry of Health and Family Welfare on the Indian Health Information Network Development (IHIND), submitted in March 2010 by the National Knowledge Commission, that proposes to identify a technology and network infrastructure that will create the desired integration, define standards for data sharing, protection of data, and business practices to ensure patient protection while facilitating greater information sharing, define educational and business strategies that ensure appropriate use of greater health information technology and the sustainability of the effort, and identify other technical and non-technical strategies to create health information exchanges.

In our view, the government should examine these proposals and plan for their implementation and roll-out. Given the magnitude and complexity of the information technology challenge, it would be advisable for the Ministries and Departments of Health to collaborate with the Ministry of Communication and Information Technology to explore the creation of a dedicated or shared National Information Utility for this task.

Recommendation 3.6.4: Ensure strong linkages and synergies between management and regulatory reforms and ensure accountability to patients and communities.

This recommendation is intended to strengthen community participation in planning and monitoring health services - by linking citizen voice and redressal mechanisms to the regulatory authorities' accountability mechanisms. Effective systems should be put in place to guarantee patients' privacy. Ethical considerations in data collection and analysis should be built in and enforced. Links and synergies in management and regulatory reforms and accountability to patients and communities must be established.

Recommendation 3.6.5: Establish financing and budgeting systems to streamline fund flow.

We recommend the establishment of a transparent, performance-based system of budgeting and financial management with accountability structures backed by appropriate information technology and qualified financial professionals. This system will ensure smooth and transparent functioning of the administrative workflow at low costs and allow for more resources for clinical care and enhanced citizen satisfaction.

Institutional reforms: Regulation of the public and the private sectors to ensure provision of assured quality and rational pricing of health care services are essential for the implementation of the UHC system. A structured regulatory framework is needed to monitor and enforce essential health care regulations in order to control entry, quality, quantity and price.

Recommendation 3.6.6: We recommend the establishment of the following agencies:

1. National Health Regulatory and Development Authority (NHRDA): The main functions of the NHRDA will be to regulate and monitor public and private health care providers, with powers of enforcement and redressal. This regulator will oversee contracts, accredit health care providers, develop ethical standards for care delivery, enforce patient's charter of rights and take other measures to provide UHC system support by formulation of Legal and Regulatory norms and standard treatment guidelines and management protocols for the National Health Package so as to control entry, quality, quantity, and price. The National Authority will be linked to similar state-level institutions and to the Ombudsperson at the district level especially to handle grievance redressal.

We recommend three Units under the NHRDA:

- a) **The System Support Unit (SSU):** This Unit should be made responsible for developing standard treatment guidelines, management protocols, and quality assurance methods for the UHC system. It should also be responsible for developing the legal, financial and regulatory norms as well as the Management Information System (MIS) for the UHC system.

- b) **The National Health and Medical Facilities Accreditation Unit (NHMFAU):**

This Unit should be responsible for the mandatory accreditation of all allopathic and AYUSH health care providers in both public and private sectors as well as for all health and medical facilities. This accreditation facility housed within the NHRDA will define standards for health care facilities and help them adopt and use management technologies. A key function of this Unit will be to ensure meaningful use of allocated resources and special focus should be given to information technology resources. There should be corresponding state-level data consortium and accreditation agencies (State Facilities Accreditation Unit) under the National FAU to oversee the operations and administrative protocols of health care facilities.

- c) **The Health System Evaluation Unit (HSEU):**

This monitoring and evaluation unit should be responsible for independently evaluating the performance of both public and private health services at all levels - after establishing systems to get real time data for performance monitoring of inputs, outputs and outcomes.

The diagram on the next page (Figure 6) illustrates the division of functions and responsibilities of the three Units under the NHRDA.

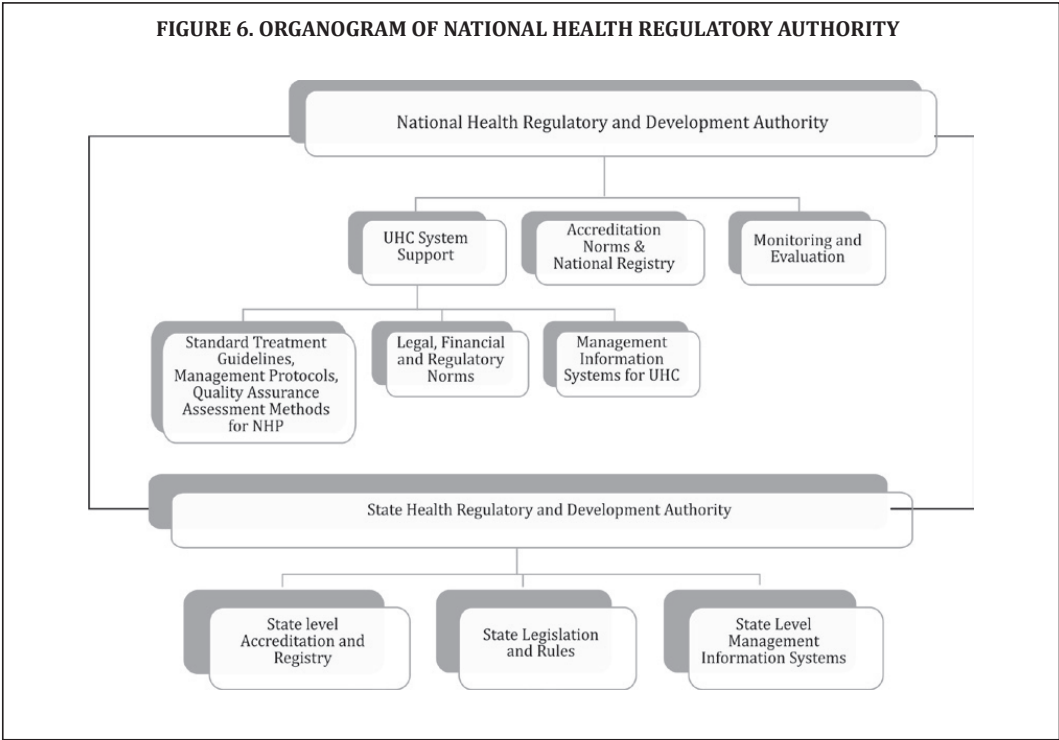
2. National Drug Regulatory Authority (NDRDA):

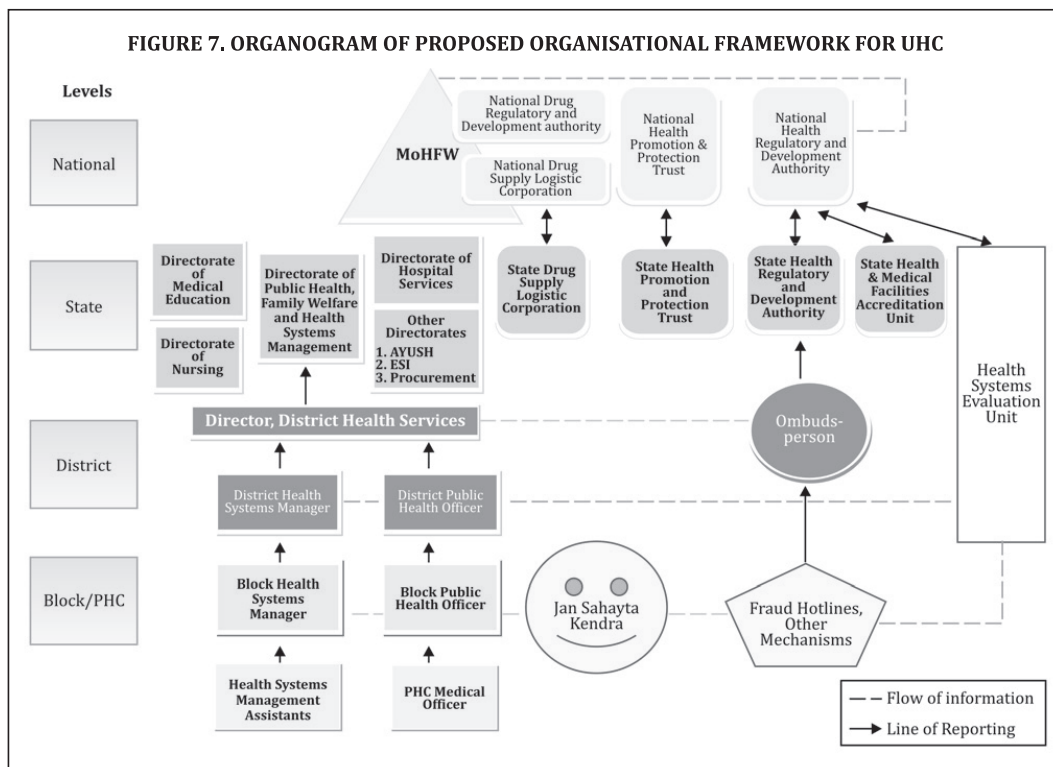
The main aim of NDRDA should be to regulate pharmaceuticals and medical devices and provide patients access to safe and cost effective products.

3. National Health Promotion and Protection Trust (NHPPT): The NHPPT shall play a catalytic role in facilitating the promotion of better health culture amongst people, health providers and policy-makers. The Trust should be an autonomous entity at the national level with chapters in the states. It should promote public awareness about key health issues, track progress and impact on the social determinants of health, and provide technical expert advice to the Ministry of Health. The Trust should also conduct key

assessments and disseminate knowledge about the impacts of non-health sectors and policies on the health of people, through linkages with the NHRDA, Health Assemblies, and Jan Sahayata Kendras.

The following organogram (Figure 7) gives a snapshot view of the recommended organisational framework and the placement of the National Health Regulatory and Development Authority, HSEU along with other bodies.





Recommendation 3.6.6: Invest in health sciences research and innovation to inform policy, programmes and to develop feasible solutions.

We recommend increasing the research budget in public health and biomedical sciences across all national funding agencies. It is critical for India to augment the research budget and capacity for health sciences research and innovation to inform health policy and to discover affordable, relevant treatments, products and solutions for universal

health care coverage. State governments should be encouraged to allocate suitable funds for locally relevant research particularly in public health. Investments should be made in centres of excellence, Health Sciences Universities and independent research organisations.

4. The Path Forward

Our Report provides the vision and a blue-print that shows how it is indeed feasible for India to establish a UHC system within the next ten years. Follow-up work by experts is needed for spelling

out the modalities of how various proposals may best be implemented. We are conscious that merely calling for additional finances, more health workers, better technology, and new policy and regulatory institutions cannot provide the full solution to the deficiencies in India's health care delivery system. It is imperative to pay attention to the social determinants of health by sufficiently investing in non-health related sectors that have a direct bearing on health outcomes. It is equally important to focus on the cross-cutting issues of gender and health that we have articulated upfront in the Report. A new political, ethical and management ethos is needed to guide both the public and private sectors in health. There has to be much greater political commitment to UHC, as well as an end to corruption, fraud and poor quality of service provisioning in both the public and private sectors.

The transformation of India's health system to become an effective platform for UHC is an evolutionary process that will span several years. The architecture of the existing health system has to be accommodated in some parts and altered in others, as we advance UHC from an aspirational goal to an operational reality. The design and delivery of the UHC system requires the active engagement of multiple stakeholders and calls for constructive contributions from diverse sectors. Central and state governments, civil society, private sector and health professional associations have to deliberate on the blueprint of the UHC system, debate on choices between different models, move from convergence to consensus and collectively commit to the effective implementation of the agreed action plan. While our report provides the basis for initiating a broad societal discussion on the desirability and directions of UHC for India, we are not being prescriptive in our recommendations. Given the diversity and dynamic heterogeneity of the country, we recognise that the real power to change lies with state governments. We therefore call upon our state governments who have the

power, autonomy and flexibility to swiftly initiate, incorporate and implement the composite recommendations detailed in this report and begin the steps towards UHC through approaches that are innovative, effective and accountable in their scope and action.

We recognise the challenges posed by a multifaceted process that has to contend with the carryover effects of the past and complexities of the present even as it creates a mould for the future. However, the need to create an efficient and equitable health system is so urgent that the task cannot be deferred any longer. We must rise to this challenge and use the next decade to usher in UHC, which the Indian people deserve, desire and demand.

THE VISION FOR UNIVERSAL HEALTH COVERAGE

Universal Health Coverage: An Overview

Universal Health Coverage (UHC) as it is conceptualised today, ensures promotive, preventive, diagnostic, curative and rehabilitative health services without financial hardship.^{1,2} UHC is one mechanism of ensuring balanced development, where the economic growth of a nation is accompanied by an increase in the health and well being of all persons. The terms 'universal health coverage', 'universal health care', 'universal health access' and 'universal health protection' are sometimes used interchangeably, but also often used to distinctively demarcate the nature of services provided as well as the range of health determinants addressed under the rubric of universality. Since the World Health Assembly adopted the term 'Universal Health Coverage' in 2005, this report consequently uses that term, but defines it in a manner that encompasses a wider range of services and determinants while emphasising access and equity as the cardinal tenets of such a system.

Globally, the agenda of UHC is currently taking centre stage in health policy. Governments as well as civil society, in developed and developing countries, are engaged in active debates over how best to achieve it.³ The concept of UHC, however, has a long history. Article 25.1 of the 1948 Universal Declaration of Human Rights states, "Everyone has the right to a standard of living adequate for the health and wellbeing of himself and of his family, including food, clothing, housing and medical care and necessary social services."⁴ In 1966, member states of the International Covenant on Economic, Social and Cultural Rights recognised "the right of everyone to the enjoyment of the highest attainable standard of physical and mental health."⁵ The 1978 Alma-Ata declaration stands out as a landmark in the modern history of public health by promoting the vision of "health for all."⁶

State-led implementation of UHC dates back even further. With the 1883 Health Insurance Bill, Germany became the first country to make nationwide health insurance mandatory. The Bill laid the foundations for Germany's generous social health insurance scheme, which covers 88% of its population today.⁷ Great Britain followed Germany in 1911 with the enactment of the National Insurance Act and the National Health Service (NHS) in 1948, which caters to all legal residents of Great Britain with supplementation from private insurance providers.⁸ Today, most high income countries (HICs) have some system of UHC, with the glaring exception of the United States, where over 45 million people have no health coverage.^{8,9}

Public demand, economic feasibility and political leadership have combined to encourage many low and middle-income countries (LMICs) to adopt UHC as a realistic goal. "Other countries like Kenya are in the process of introducing nation-wide social insurance schemes that widen population access to comprehensive health care services",⁹ joining the ranks of Brazil,¹⁰ Thailand,

Sri Lanka, and Taiwan,¹¹ countries with two to three decades of experience on the path to UHC.⁹ Clearly India is not alone in its move towards UHC, and has much to learn from the experiences of other nations (refer to Annexure I, which profiles 16 international cases of UHC).

1. Current Scenario: A Global Movement towards UHC

According to the International Labour Organisation, nearly 50 countries have attained universal or near universal coverage.¹² Conspicuous gaps still exist, however, particularly in Asia, Africa and the Middle East.¹²

Escalating health care costs, inadequate public spending, and weak health care delivery systems in low and middle income countries have been barriers to UHC in the past. Today there is greater international recognition of the need for health systems to adopt sustainable financing mechanisms that permit population-wide coverage and the efficient delivery of a wide range of health services.¹³ The 2005 World Health Assembly (WHA) urged member states to pursue UHC, ensuring equitable distribution of quality health care infrastructure and human resources, to protect individuals seeking care against catastrophic healthcare expenditure and possible impoverishment.¹⁴ It also highlighted the importance of taking advantage, where appropriate, of opportunities that exist for collaboration between public and private providers and health-financing organizations, under strong overall government stewardship.

The 2010 World Health Report builds upon the 2005 WHA recommendations and aims at assisting countries in quickly moving towards Universal Health Coverage.¹⁵ The report highlights three basic requirements of UHC: raising sufficient resources for health, reducing financial risks and barriers to care, and increasing efficient use of resources.¹⁵ To generate adequate funds,

the Report spurs high-income countries to "honour their commitments" to international aid and suggests that low-income countries "increase the efficiency of revenue collection, reprioritize government budgets, [and introduce] innovative financing" to increase domestically available funds.^{15,16} To develop a system of financing that makes health care accessible to all, the Report makes three recommendations. First, the very poor "will need to be subsidized from pooled funds, generally government revenues." Second, contributions to the fund pool "need to be compulsory, otherwise the rich and healthy will opt out and there will be insufficient funding to cover the needs of the poor and sick." Third, "pools that protect the health needs of a small number of people are not viable [because]...a few episodes of expensive illness will wipe them out."¹⁵ Finally, to achieve efficiency, the Report recommends alternatives to fee-for-service financing, such as capitation at the primary-care level or case-based payments at the hospital level, and new approaches to purchasing services, such as strategic purchasing.

However governments ultimately go about funding and structuring UHC, the World Health Report assumes they have a fundamental responsibility to ensure that all citizens have equitable access to cost-effective and efficient health care. The Report's very existence signals the increased worldwide recognition of the importance of UHC, supported by growing political commitment which adds impetus to India's aspiration to attain UHC in the near future.

2. The Indian Perspective: Contextualising UHC

India has made considerable progress in public health since independence. Recent reforms and innovations under the National Rural Health Mission have resulted in many States reporting significant improvements in key health indicators like institutional deliveries out-patient cases, full

immunization, availability of diagnostic and family welfare services and disease control programmes, to name a few.¹⁶ However, the country's health system continues to face many challenges, with several planned health goals failing to keep pace with rapid economic growth.¹⁷ Despite considerable declines in child malnutrition rates over the past few decades,¹⁸ India continues to have the highest number of malnourished children in the world today.¹⁹ In addition, while the maternal mortality rate has declined over the past 30 years from 460 to 212 per 100,000 live births, it still remains high relative to the targets set by the 11th Five Year Plan.²⁰

According to several analysts, the onus for the sluggish progress on key health indicators and outcomes lies, to a great extent, on the country's health system, which has been plagued with decades of inadequacy in financing, governance and management.^{21,22} Although several forms of health financing exist in India, most of the country's health expenditure is supported by private spending, primarily Out of Pocket (OOP), with public funds constituting an insufficient amount. Despite several government initiatives in social protection, such as the Employees' State Insurance Scheme and the Central Government Health Scheme, only about one fourth of the population is covered by some form of health insurance.¹² Though several efforts, such as the National Rural Health Mission, the Janani Suraksha Yojana, and the Rashtriya Swasthya Bima Yojana, have been made in the past few years to provide equitable health care to Indians, these programs by themselves cannot accomplish UHC.²³ The lack of an efficient and accountable public health sector has led to the burgeoning of a highly variable private sector which, while providing a major share of the country's health services, has also driven up catastrophic health expenditure and pushed millions of Indians into poverty. India's unregulated private sector and

deficient public sector, which suffers from management shortfalls, human resource shortages, and poor accountability, has resulted in a health system that is unable, at present, to cater to the needs of the entire population.^{21,22}

This situation, however, is not uniform across India: some states, such as Tamil Nadu and Kerala, have model health systems, while others, in particular the "Empowered Action Group" states (EAG) of Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Odisha, Rajasthan, Uttarakhand and Uttar Pradesh, are not performing relatively as well.²² The differences are stark. For instance, for a girl born in rural Madhya Pradesh, the risk of dying before age 1 is around 6 times higher than that for a girl born in rural Tamil Nadu,²² There is an 18 year difference in life expectancy between Madhya Pradesh (56 years) and Kerala (74 years).²⁴ These disparities suggest that active steps towards addressing the social determinants of health can begin to reverse the chronic underdevelopment that characterises the poor health performance of EAG states.

Universal Health Coverage in India must have a flexible architecture to deal with the country's regional diversity and the differences in health care needs of rural and urban areas. There are considerable gaps between rural and urban areas with respect to disease morbidity and mortality. While the combined problems of undernutrition and inappropriate nutrition account for almost equal population proportions in rural (48%) as well as urban areas (49%), undernutrition is a dominant problem in the former while overweight/obesity accounts for half the burden of 'malnutrition' in the latter.²⁵ Urban areas have 4 times more health workers per 10,000 population than rural areas, and 42% of health workers identifying themselves as 'allopathic doctors' in rural areas have no medical training relative to 15% in urban areas.²⁶

Compounding these disparities is an urban bias in health financing. For example, almost 30% of public health expenditure (both from the centre and states) is allocated to urban allopathic services while rural centres receive less than 12%.²⁴ Any UHC system in India must be able to deal with the different conditions and contexts of rural and urban areas, respectively.

3. Definition

The High Level Expert Group on Universal Health Coverage in India, after great deliberation, has identified the following as a working definition of UHC:

Ensuring equitable access for all Indian citizens, resident in any part of the country, regardless of income level, social status, gender, caste or religion, **to affordable, accountable, appropriate health services of assured quality** (promotive, preventive, curative and rehabilitative) as well as public health services addressing the wider determinants of health delivered to individuals and populations, **with the government being the guarantor and enabler**, although not necessarily the only provider, of health and related services.

4. Principles

While discussing the principles of adopting and achieving UHC, it is imperative to consider the right to health as the key underlying theme. Right to health will enable health professionals to devise equitable policies and programmes that strengthen systems and place UHC high on national and international public policy agendas. In General Comment 14, the UN Committee on Economic, Social and Cultural Rights interprets the right to the highest attainable standard of health as encompassing an obligation by governments to provide medical care, access to safe drinking water, adequate sanitation, education,

health related information, and other underlying determinants of health.²⁷ It includes the right to be free from discrimination and involuntary medical treatment, and has special concern for disadvantaged populations, like those living in poverty. Thus, it builds a strong foundation for UHC.

Taking a rights based approach to UHC would require India to ensure recognition of the right to health²⁸ in national law, set standards, establish institutional arrangements for the active and informed participation of stakeholders in policy making and implementation, ensure transparency, equity, equality, non discrimination and respect for cultural differences.²

Following from the above, Universal Health Coverage in India should be based on the following core principles:

i) Universality

The system for UHC must be genuinely universal in its scope, covering all socio-economic classes and sections of the Indian population including the marginalised and hard-to-reach. Given that much of the population, including the middle class, currently lacks access to quality affordable health care, universality is an urgent social necessity. Achieving universality will entail cross-subsidisation, social solidarity, and effective public voice for all individuals seeking healthcare. The ambit of universal health coverage will include not only the poor, but also includes those that relatively better off, so that they have an interest in building and benefiting from an efficient and equitable health system. Universality also implies that no one, including marginalised, hard-to-reach, mobile or traditionally discriminated groups would be excluded, while acknowledging that the relationship

between health, income and social class not a threshold relationship but a continuous one that requires social protection across the board.

ii) Equity

The envisaged UHC system must have the following dimensions of equity:

Equity in access to services and benefits: The same set of health services, of comparable quality should be made available to all persons with similar health needs, irrespective of socio-economic status, ability to pay, social or personal background, on the basis of the principle of 'horizontal equity' (equal resources for equal needs). There are marked disparities in exposure and vulnerability to diseases and access to health services, with the poorest and most disadvantaged being most affected. The latter include urban and rural poor, women, children, and the traditionally marginalised and excluded like Adivasis (Scheduled Tribes, ST), Dalits (Scheduled Castes, SC) as well as ethnic and religious minorities. UHC will reduce such stratification by increasing reach, removing barriers, and including supportive services. Urban-rural and geographic inequities need to be overcome to the maximum extent possible, first by ensuring more equitable spread of health care facilities and services, and second, by offering effective and timely transport services, especially for remote and underserved areas.

Equity ensured by special measures to ensure coverage of sections with special needs: In any UHC system, basic provisions must be supplemented with special provisions for sections of the population with additional health demands. For example, Adivasi populations will have unique health care needs and specific health-seeking contexts, which must be accommodated

in a UHC framework. Additional programmes or measures will be needed to ensure 'vertical equity' (more resources for additional needs).

iii) Empowerment

Health is often influenced by social circumstances, individual behaviours and protection offered by the state. The democratisation of healthcare through UHC should enable individuals, groups and communities to improved access to healthcare services and empower them to make better health choices. Empowerment could take various forms and can be at multiple levels, e.g., behaviour change to avoid risk, training of community health workers, community monitoring of health services, and demand generation for attention to local health concerns.

iv) Comprehensiveness of care

A UHC scheme should offer comprehensive promotive, preventive, curative and rehabilitative care at primary, secondary and tertiary levels that covers the broadest range of health conditions possible. Health care providers must be competent, and infrastructure, equipment, essential medicines, laboratory investigations, medical supplies and patient transport must be sufficiently and equitably available. Even though some types of tertiary treatment may not be included in the initial scheme, attempts will need to be made in the medium term to include the maximum range of medically necessary services.

v) Non-exclusion and non-discrimination

Universality implies that no person should be excluded from services or benefits on grounds of current or preexisting illnesses and health conditions, (e.g., congenital disorders, HIV/AIDS), or because they require a special category of health service, (e.g., maternity care, care for

occupational illness or injury, mental health care). No person may be excluded or discriminated against in the provision of services or benefits under the scheme on grounds of occupation, age, class, caste, gender, religion, language, region, sexual orientation or other social or personal background.

vi) Financial Protection

Equity in financing: A large proportion of the Indian population contributes substantially to the economy but receives incomes that are at or near, subsistence levels. This fact must be recognized while deciding on contributions by various social sections. The scheme must be designed in a manner that no person should be excluded from services or benefits of the scheme due to his/her financial status/ability to pay. In other words, the scheme should be designed, funded and operated in a manner such that no person who needs essential or emergency health care is denied that service because of inability to make a personal payment.

Another principle of financial protection is cashless service: there should be no payment at the point of provision for any services under the scheme.

vii) Quality and rationality of care

Quality and rationality of care under the scheme will have to be ensured through regulation of all providers and their expected adherence to specified infrastructure, human power and process standards. Health services provided under the scheme should be delivered according to standard treatment guidelines, and be periodically audited. Along with quality of medical care, non-medical aspects of care and expectations of users should also be addressed, (e.g., staff behaviour, hospital cleanliness, etc.).

viii) Protection of patients' rights, appropriate care, patient choice

All services made available under UHC will have to be delivered in accordance with universally accepted standards for patient and user rights, including the right to information, the right to emergency medical care, the right to confidentiality and privacy, the right to informed consent, the right to second opinion, the right to choose between treatment options, including right to refuse treatment.

ix) Portability and continuity of care

The benefits and continuity of coverage under UHC should be available to any person or family moving across the country. Migrant workers, those changing place of residence across states, districts or cities, beneficiaries of any health insurance programme, and those who change employers or become unemployed should be assured continuity of care. Seamless care during referral from one agency to another, including patient transport, will have to be ensured.

x) Pivotal role of public financing, substantial contribution of tax based funds, single payer system

Global experience demonstrates that UHC has not been possible to achieve through individual, voluntary, or small group insurance. UHC has generally been achieved on the basis of tax-based public financing, combined with some components of social health insurance in certain countries. In the Indian context, a substantial increase in tax-based public financing is required to finance UHC, given the relatively small proportion of the population employed in the formal sector.

xi) Consolidated and strengthened public health provisioning as a key component of UHC

Public services for the provision of health care

should be consolidated and significantly expanded, along with regulation and involvement of private providers. Under-utilised public facilities such as Employees' State Insurance Scheme (ESIS) hospitals, or currently segregated facilities associated with public agencies like the Railways could be appropriately linked with the UHC system, expanding the range of public providers available under UHC. Provision of promotive and preventive services will need to occur through an expansion of outreach of primary health care in rural areas and the introduction of primary health services especially in urban areas. With increased financial resources and a significant expansion of public provision, audit mechanisms are required to ensure transparency and quality of care according to defined standards.

xii) Accountability, transparency and participation

The UHC-system including its authorities and various levels of providers, must be accountable to individual users, the general public, and community representatives. General information concerning the functioning of the system should be available in the public domain, and all specific information relating to public and non-public providers should be accessible under RTI provisions. Appropriate complaint and grievance redressal mechanisms should be operationalised to enable any person aggrieved under the system to seek redressal.

UHC should empower both public authorities and multi-stakeholder civilian bodies, allowing for participatory regulation. Participatory bodies (analogous to various levels of Health Councils in Brazil) should include representatives of relevant stakeholders including public health officials, public and non-public health care providers, elected representatives, civil society organisations, trade unions, consumer and health rights groups, and organisations / associations of health care employees. This regulation should be

combined with participatory or community based monitoring and periodic reviews of the system to ensure its accountability, effectiveness and responsiveness.

xiii) Supplementary Operational Tenets

In conjunction with the core principles outlined above, the following operational tenets ought to guide the development of a UHC system for India:

- * A continuously evolving framework that makes use of structured growth trajectories to respond to increasing utilization of health services and gradually incorporates additional services that may not have been feasible at the initial stage of a UHC system.
- * The sharing of finances between national, state and local governments with appropriate degree of flexibility for state specific models.

5. Envisioning the Future: Seeking Stability and Health Protection in the Midst of Multiple Transitions

UHC has to be grounded not only in the above principles, but also in the truths of today and the trajectories of tomorrow. The India of today is characterised by dynamism, change and flux in every domain, with transitions underway that have ramifications at the individual, community, regional, and national levels.

Demographic transition is at the core of this change, and refers to a shift from high to low mortality and fertility rates. This process is characterised by changes in population growth rates and age structure.²⁹ While most of the developed world is experiencing declining population growth rates and an ageing population base, most developing countries are still grappling with high fertility rates. India is in a period of transition as birth and death rates

decrease and the average age of the population consistently increases.²⁹ In the near future, India will continue to have a large reproductively active population and the current boom, despite decreasing birth rates, will likely last for several more decades because of the sheer size of the population.³⁰

At the same time, India's ageing population is also expected to increase substantially in absolute terms.³⁰ Thus, while striving to promote and protect the health of a young, productive population, the health system must also care for a substantial ageing population as well.

India's demographic transition is accompanied by epidemiological and nutritional transitions as well. As mortality declines and life expectancy increases, diseases related to an extended lifespan also increase in prevalence, resulting in a shift in the country from being affected predominantly by infectious diseases and under-nutrition to chronic and degenerative diseases.³¹ This shift is, in part, the result of the 'nutrition transition',³² brought about by the forces of globalisation, urbanisation, economic growth and technological change. It is characterised by increased processed food consumption and decreased physical activity.³² In addition to unhealthy eating and sedentary habits, other life-style related determinants of chronic disease including tobacco consumption, alcohol abuse and stressful living remain a concern, while increasing automobile use and the lack of road safety contribute to an increase in the number of injuries and untimely deaths. While India is witnessing an increase in chronic disease related morbidity and mortality, it still hasn't overcome the health challenges posed by infectious disease and under-nutrition. India is currently engaged in battling this dual burden of disease simultaneously, which developed countries have had to deal with only sequentially.

Transitions are being seen on several other fronts as well. Over the past few decades, India has experienced a swiftly accelerating technology revolution with tremendous implications for healthcare in the future. On the one hand, the accompanying lifestyle changes have the potential to increase the risk of chronic disease³² and hasten the epidemiological transition. On the other hand, technological innovation may introduce new health services and improved surveillance systems. Managerial transitions are evident both in the growing number of public private partnerships (PPPs) and in the induction of managerial competencies in national health programmes such as the National Rural Health Mission (NRHM). Normative and regulatory frameworks for PPPs are still evolving and the planning process for UHC offers a good opportunity to define their scope and governance. India is also in political transition. From decades of single-party dominance, the country has now shifted to an era of coalition governments, during which the need for consensus on strategic health initiatives is paramount. Moreover, revitalised village Panchayats and increased participation of women in healthcare access and delivery have been critical in reshaping India's health priorities and policy plans. Given the federal nature of India's polity and the constitutional division of responsibilities, consensus building is not only needed within coalition governments but also between Central and State governments, which now represent a wide spectrum of political viewpoints.

These transitions are bound to change India's future healthcare needs, which ought to influence the way healthcare is delivered in India. In conceptualising a UHC system, a focus on India's future will be crucial to ensure the implemented system is able to exist in, make the best of and respond to the country's changing demographic, health, political and economic scenario.

6. Health Beyond Health Care: Addressing the Broader Determinants of Health

The call for universal health coverage has always been part of a broader movement for health equity and social change.³³⁻³⁶ The 2008 Report of the Commission on Social Determinants of Health (CSDH),³⁷ marks a watershed in the global movement for health equity. The Commission's Report defines Social Determinants of Health (SDH) as "the conditions in which people are born, grow, live, work and age, including the health system" and states boldly that we should aim to close unjust and avoidable health inequities in a generation, or between 30 to 40 years. In naming the health system as a SDH, the report encourages member states to ensure that health care is available, accessible (without barriers related to discrimination, reach, affordability, and information), acceptable, and high quality. The Report advocates a right to health framework; identifies the health system itself as one of the social determinants of health and proposes a continuum of care across four pillars: health, nutrition, education and environment.

Social Determinants of Health (SDH) form the starting point of reform for universal health coverage in India. SDH are recognized in the very definition of universal health coverage, and are directly declared in the guarantee of the Indian Constitution of the right to health.³⁸ An expressed commitment has been made to ensure that income level, social status, gender, caste, religion, urban/rural or geographic residency and social or personal background do not affect access to range and quality of health services for the entire population. Recognizing that the wide health inequities presently evident in India represent an erosion of the promise of social justice enshrined in our constitution, the framework of UHC should reflect an implicit appreciation of the social determinants of health. Through UHC, our

societal commitment to social justice must be invoked to respect, protect and fulfil the right to health of the Indian people.

The UHC approach should draw upon the social determinants perspective, first recognized in the Bhole report (1946)³⁹ at the cusp of Indian independence, and several reports there after.^{40,41} Issues consistently highlighted in all three of the above reports include nutrition, access to safe drinking water, education, poverty, and marginalisation. Other key determinants that need urgent and sustained attention are infrastructure, sanitation, transport, communication, and the education and empowerment of women. Given the diversity of health determinants, cross-sectoral cooperation will be necessary to achieve India's considerable health goals. Policy formulation and programme implementation must go beyond the health sector to include the social and political sectors (ranging from education to marginalisation), the economic sector (related to poverty, as well as trade, food and agriculture), and various sectors related to occupation and the environment (related to water, sanitation, as well as working conditions).

7. Gender as a Determinant of Health

While gender figures prominently among the social determinants of health, it requires particular emphasis and attention because gender discrimination and insensitivity, if left unaddressed, will threaten the very framework and guiding principles of UHC. Oppressively hierarchical and patriarchal family norms allow women very little decision-making power even in personal matters related to health, and limited access to education, jobs, and social mobility make women especially susceptible to illness. At the same time, general societal neglect, which often starts with the family and continues to the health care provider, reduces access to health services for mothers, girls, as well as other vulnerable genders. Gender equity, particularly regarding maternal and child health, has

not been able to capture the attention of policy makers in India. Child marriage and inadequate access to and control over use of family planning, contraceptives, and abortion services are directly attributable to the low status of women and girls in society. Indian women and girls continue to be unnecessarily affected by gender-based violence and inequities in healthcare access and use.⁴² Unless UHC makes a conscious effort to remove social barriers to health care across genders, throughout the life-cycle, and creates suitable mechanisms to increase their access to the full range of health services, the goal of universal coverage will not be attained.

8. Positive Externalities of Health and Universal Health Coverage

Improvements in the health of the Indian population will likely yield a range of social and economic benefits, including increased productivity, improved performance in competitive sports, greater social solidarity and inter-sectoral convergence, and gains in human security overall. By protecting health, Universal Health Coverage can promote such positive externalities.

By strengthening primary health care in rural and urban areas, UHC can over time reduce or delay the occurrence of many diseases and also decrease the referral load of secondary and tertiary care for complications that arise from delayed detection or absence of early care. Thus the economic benefits of UHC, which would establish a robust system of primary health care in both rural and urban settings, are likely to extend to the reduction of expensive tertiary care costs, which are likely to spiral higher otherwise. A UHC policy which prioritizes primary health care would also require an expansion of the health workforce, especially at the levels of frontline and midlevel health workers, sanitary workers, transportation workers, community health workers, nurses, clinical assistants, laboratory technicians and paramedics. This greater demand

for human resources will create employment for the many young people who will seek jobs in increasing numbers in the upcoming years of India's demographic transition. By enrolling and employing more women in many of these positions, UHC can also facilitate gender empowerment.

9. Charting India's Path to Universal Health Coverage - Areas of Convergence and Consensus

Given the complex disease burdens, economic challenges and geographic diversity of the country, it must be recognized that there is no single path to achieve UHC in India. While ensuring our population equitable access to health services and protecting the poor and vulnerable against catastrophic health care costs, our nation needs to determine and maintain an appropriate balance between extending coverage to more people, offering more services, and covering more of the cost of care.

In charting her course to universal health coverage, India will encounter technical, managerial and political barriers. Even as the country establishes a vision for UHC and develops the mechanisms for financing and effectively implementing it, the initiative will require adequate and timely political momentum and relevant buy-in from political actors at both the state and central levels. It is important for India to push for UHC at a time when policy makers are receptive to healthcare as a responsibility of the state.⁴³ Several initiatives, ranging from major national programmes to state pilot projects, show an increasing commitment towards a strengthened public health sector. Noteworthy among these is the National Rural Health Mission (NRHM), which was launched in 2005 to strengthen the public health-care system. This scheme brought with it an influx of government

funds aimed at increasing the outlays for public health from 0.9% of gross domestic product in 2005 to 2-3% by 2012.

The NRHM aims to revitalise the public sector in health by increasing funding, integrating vertical health and family welfare programmes, employing female Accredited Social Health Activists (ASHAs) in every village, decentralising health planning, involving the community in health services, strengthening rural hospitals, providing untied funds to health facilities, and mainstreaming traditional systems of medicine into the public health system. The NRHM covers the entire country, with special focus on 18 states that have relatively poorer infrastructure and health indicators. The NRHM and the recently proposed National Urban Health Mission (NUHM) are crucial steps to ensuring universal access and health equity in the country. Other noteworthy efforts that also speak to ensuring equity and affordability of health coverage include the Jan Aushadhi programme, a public-private partnership that aims to set up pharmacies in every district to sell affordable, high-quality generic drugs and surgical products, and the Janani Suraksha Yojana, which was launched in 2005 and uses financial incentives to encourage women to deliver in government health facilities or accredited private facilities. A conditional cash transfer scheme, the Janani Suraksha Yojana had an estimated 9.5 million female beneficiaries in 2010. In 2007 the Ministry of Labour and Employment established the Rashtriya Swasthya Bima Yojna (RSBY) scheme, which provides insurance coverage for inpatient treatment to families below the poverty line.

10. Conclusion

Constitutionally, the Indian state is committed to improving the state of public health of the population (Directive principles section 47), and several Supreme Court judgements in India have established the Right to Health as an extension of

the fundamental Right to Life. The Government of India is signatory to various international conventions that obligate it to ensure the Right to Health.^a

Within this broader context, the report of the WHO Commission on Social Determinants of Health (2008) has specifically emphasised the need for developing systems for universal access to healthcare as the core direction for health system change.^b

Further, considering the current lack of access to quality, rational and affordable health care for the majority of the Indian population - the rural and urban poor and unorganised sector workers, as well as organised sector workers and sections of middle class - organising and operationalising Universal Health Coverage in India is an urgent necessity. Such a system would offer particular advantages to the poor by improving their access to health care, protecting them from financial impoverishment, and ensuring that the rich pay a higher proportion of their incomes to support health care provision, while in turn benefitting from a health system which has assured outreach and predictable quality.

Parallel bodies of cross-national epidemiological and economic evidence demonstrate that health care systems with universal coverage address economic inequality by re-distributing resources from the rich to the poor. Such systems tend to generate funding from public sources, charge no or very low fees for public services, offer a comprehensive set of services (with a clear role for primary level care in helping patients navigate the use of referral services), and regulate the private sector (including commercial providers and insurers and, in low-income contexts, informal providers) to protect equity gains. Additional strategies are also likely to be necessary to fully address the particular barriers to accessing care that disadvantaged and marginalised groups face. The effective functioning of such a UHC system would be an important step towards fulfilling the peoples' right to health in India. This fundamental right that can be eventually achieved only by strengthening health services and addressing the social determinants of health, including food security and nutrition, water supply, sanitation and living conditions.

a The Constitution of India places obligations on the Government to ensure protection and fulfillment of right to health for all, without any discrimination, as a Fundamental Right under Articles 14, 15 and 21 (rights to life, equality and non-discrimination), and also urges the State, under the Directive Principles of State Policy, to eliminate inequalities in status, facilities and opportunities (Article 38); to strive to provide to everyone certain vital public health conditions such as health of workers, men, women and children (Article 39); right to work, education and public assistance in certain cases (Article 41); just and humane conditions of work and maternity relief (Article 42); raised level of nutrition and the standard of living and improvement of public health (Article 47); and protect and improve environment (Article 48A). The Union of India has signed various international treaties, agreements and declarations specifically undertaking to provide right to health including but not limited to: Universal Declaration of Human Rights (UDHR): Article 25 (1); International Covenant on Economic, Social and Cultural Rights (ICESCR): Article 12; Convention on the Rights of the Child (CRC): Article 24; Convention on the Elimination of All Forms of Discrimination against Women (CEDAW): Article 12; UN Convention on Rights of persons with disabilities (UNCPRD): Article 25; Declaration of Alma Ata (1978); Principles for the Protection of Persons with Mental Illness and the Improvement of Mental Health Care (1991); Declaration on the Elimination of Violence against Women (1993), Programme for Action of the International Conference on Population and Development, Cairo (1994); Platform of Action for the Fourth World Women's Conference, Beijing (1995) and the Millennium Development Goals (2000); Declaration of Commitment on HIV/AIDS, 'Global Crisis-Global Action' (2001), WTO Doha Declaration on TRIPS Agreement & Public Health (2001), International Health Regulations, 58th World Health Assembly (2005); and several other declarations and conventions on health. It is necessary to give effect to these international treaties and declarations under Article 253 of the Constitution of India. (Excerpted from Draft National Health Bill, Ministry of Health and Family Welfare, 2009)

b The Commission recommends that: 9.1 National governments, with civil society and donors, build health-care services on the principle of universal coverage of quality services, focusing on Primary Health Care 9.2 National governments ensure public sector leadership in health-care systems financing, focusing on tax-/insurance-based funding, ensuring universal coverage of health care regardless of ability to pay, and minimizing out-of-pocket health spending 9.3 National governments and donors increase investment in medical and health personnel, balancing health-worker density in rural and urban areas 9.4 International agencies, donors and national governments address the health human resources brain-drain, focusing on investment in increased health human resources and training, and bilateral agreements to regulate gains and losses.³⁶

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CHAPTER 1 HEALTH FINANCING AND FINANCIAL PROTECTION

1. Introduction

India and other countries with relatively low per capita incomes can aspire to provide Universal Health Coverage (UHC) to their populations provided health financing arrangements are properly organized and managed. If not, health care costs can rise rapidly and make it very difficult to sustain UHC. It could even end up further exacerbating existing inequalities in access to health care.

Reforms of India's health financing and financial protection systems are critical for establishing UHC. In thinking of a new architecture, however, it is important to keep in mind that:

- a) rising incomes and improved standards of living have been accompanied world over by increasing health care needs;
- b) while advances in technology and medicine have improved health and enhanced life expectancy, costs of medical care have escalated sharply. Consequently, even in a high income country like the United States, cost escalations have put even basic healthcare out the reach of several segments of the population, especially where carefully thought through financing arrangements have not been put in place; and
- c) there doesn't appear to be a 'successful model' and universal method of financing and financial protection that assures guaranteed UHC in any country. Most nations are still trying to evolve a workable solution to financing and organising UHC.¹ There are, however, certain common features of countries that have done well with respect to ensuring UHC. These include: (i) a predominant role for public financing; (ii) related to this, coverage is compulsory (where linked to contribution) or automatic

(where based on certain characteristics such as residence or citizenship); and (iii) universal entitlement without exclusion. In other words, UHC requires both (a) compulsion (no opting out) and (b) subsidization (enabling coverage for those too poor or too sick to pay for their own coverage). Finally, it is desirable to have large and diverse risk pools (that minimize fragmentation, and promote equity by not having, for example, separate pools for the poor) in order to provide UHC at a lower cost than would be the case if a country were to achieve it with lots of small, fragmented pools.

What we are proposing for India is somewhat unique - a hybrid that draws on the best lessons from other countries - both developed and developing.

While drawing on lessons from other developing countries, we should not forget that India's per capita income (around Purchasing Power Parity Dollars [PPP\$] 3,250 in 2009) remains relatively low compared to that of China (PPP\$6,890), Thailand (PPP\$7,640), South Africa (PPP\$10,050), Brazil (PPP\$10,200) and Mexico (PPP\$14,100) - countries that report better health outcomes than India. In other words, India cannot quickly match China, Thailand or Brazil in terms of per capita overall or public spending on health not only because of lower incomes and the consequently lower capacity to mobilize financial resources, but also because of the limitations of the health system to absorb additional financial resources effectively and efficiently without bringing about significant reforms of the health system.²

Moreover, we should be conscious that India's low levels of income and human development impose several limitations. The problem is particularly severe at a time when the country has adopted a roadmap for fiscal consolidation to

ensure overall macro-economic stability based on the recommendations of the 13th Finance Commission. In other words, we need to recognize the budgetary constraints, be realistic, and plan judiciously so that essential health care is made available to all Indians.

We present a brief analysis of the current state of health financing in Section 2 and list our recommendations in Section 3.

2. A review of health financing in India

Deficiencies in India's health financing system, to a considerable extent, are a cause of and an aggravating factor in the challenges of health inequity and impoverishment, inadequate availability, poor reach, unequal access, poor quality and costly health-care services. Several well-known deficiencies characterise India's system of health financing and financial protection.

One, it would appear at first glance that India spends an adequate amount on health care. In 2009, India's total health expenditure as a percentage of the GDP was 4.2% - comparable to that of Sri Lanka (4%), Thailand (4.3%) and China (4.6%). The picture, however, changes dramatically when we examine levels of per capita health expenditures. At PPP\$132 per capita, India's health expenditure is far less than that of Sri Lanka (PPP\$193), China (PPP\$309), and around a third of that of Thailand (PPP\$345).³

Two, India's public spending on health as a proportion of the GDP - estimated at around 1.2% of the GDP in 2009 - is among the lowest in the world. The corresponding percentage is 1.8 in Sri Lanka, 2.3 in China and 3.3 in Thailand. The extremely low levels of public spending become even more evident when we examine per capita public spending on health. In 2009, the per capita government spending on health in India (PPP\$43)

was significantly lower than in Sri Lanka (PPP\$87), China (PPP\$155) and Thailand (PPP\$261).^a

The proportion of public spending on health by India is significantly low, not because India is poorer than these other countries, but principally due to the very low per cent of public spending that Indian governments devote to health - typically in a range of 3-4% - amongst the lowest of any country in the world. This reflects the very low priority that, historically, governments in India have accorded to the health sector.

Table 1 reveals that in 2009, total public spending in India was substantially higher as a share of GDP than in the other countries (33.6% as compared to about 22-24% in the others). So the government(s) of India had much greater capacity to spend, relative to GDP, than the other countries. But government spending on health as a share of GDP was much lower in India than these other countries. This was due to the dramatically lower allocation priority that Indian governments devoted to health.

Table 1. Low Priority in Public Spending on Health - India and Comparator Countries, 2009

	Total public spending as % GDP (fiscal capacity)	Public spending on health as % of total public spending	Public spending on health as % of GDP
(1)	(2)	(3)	(4)
India	33.6	4.1	1.4
Sri Lanka	24.5	7.3	1.8
China	22.3	10.3	2.3
Thailand	23.3	14.0	3.3

Source: WHO database, 2009²

Table 2 demonstrates what public spending on health as a per cent of GDP would have been with India's fiscal constraint held constant, but with each of the other country's allocation priorities.

This demonstrates that public spending on health as a per cent of GDP is low in India because the state and central governments have chosen so, not because of fiscal constraints.

Table 2. Public Spending on Health - Actual and With Comparator Countries' Priorities

	Total public spending as % GDP, India 2009	Public spending on health as % of total public spending	What public spending on health as % of GDP would have been, given India's fiscal capacity but the other coun- tries' public resource alloca- tion priorities
(1)	(2)	(3)	(4)
India	33.6	4.1	1.4
Sri Lanka	33.6	7.3	2.5
China	33.6	10.3	3.5
Thailand	33.6	14.0	4.7

Source: WHO database, 2009²

a. All data relating to 2009 are from World Health Organization database.

Three, a consequence of the low public spending on health is the extremely high burden of private out-of-pocket expenditures. In 2009, private expenditure in India accounted for 67% of the total expenditure on health - comparatively higher than in Thailand (24%), China (50%) and Sri Lanka (56%).²

Two key features of private out-of-pocket spending are important to note:

- * Out-patient treatment, and not hospital care, accounts for 74% of private out-of-pocket expenditures.⁴
- * Medicines account for 72% of the total private out-of-pocket expenditure.⁴ Largely contributing to the sharp increase in the costs of medical care has been the steep rise in the prices of drugs, which more than tripled between 1993-94 and 2006-07.

Four, there are wide variations in public health expenditure across states. In 2008-09, for instance, public expenditure on health was Rs. 498 in Kerala and Rs. 411 in Tamil Nadu as against Rs. 229 in Madhya Pradesh and Rs. 163 in Bihar. These differences in public spending explain, to a large extent, the differentials in the reach and capacity of the health infrastructure as well as in health outputs and outcomes across the states.

Five, state governments, primarily responsible for the funding and delivery of health services, bear close to two-thirds (64%) of the total government health expenditure. The Centre accounts for the remaining third. Though the Centre's financial contribution is relatively small, its influence is substantial. For instance, the mechanisms used via both the National rural health Mission and the Rashtriya Swasthya Bima Yojana (RSBY) strongly motivate increased contributions to health from State governments.

Six, states with low public expenditure on health typically find themselves fiscally constrained by two factors. The Centre's distribution of revenues across the states does not offset the fiscal disabilities of the poorer states. Further, there is less fiscal space for development spending in the poorer states, which incur a large share of obligatory expenditures (that include salaries, wages, pensions and interest payments).

Seven, many state governments do not accord high priority to health. Analyses of public expenditures show that: (i) levels of financial allocations by state governments to health are extremely low; and (ii) with the exception of Gujarat and Uttar Pradesh - and to a limited extent Bihar, the proportion of government development expenditures allocated to health in all other Indian states declined between 2001-02 and 2007-08.

Eight, financial protection against medical expenditures is far from universal. Expenditure on social insurance accounted for 1.13% of total health spending in 2004-05. According to the National Family Health Survey 2005-06, only 10% of households in India had at least one member covered by medical insurance.⁴ India's medical insurance sector remains weak and fragmented even though there is a plethora of medical insurance schemes operated by the Central and state governments, public and private insurance companies and several community-based organisations. The benefits of traditional insurance coverage through Employees' State Insurance Scheme (ESIS) and the Central Government Health Scheme (CGHS) accrue only to a privileged few and mostly to those working in the organised sector. Despite the rapid expansion following the launch of Rashtriya Swasthya Bima Yojana (RSBY) and other state-sponsored insurance schemes over the past few years, coverage remains low with financial protection available only for hospitalization, and not for out-patient care.

3. Recommendations

As stated earlier, we envisage a Universal Health Coverage system that entitles every citizen guaranteed access to an essential National Health Package of primary, secondary and tertiary health care services (covering both in-patient and out-patient care that is available free-of-cost) provided by public sector facilities as well as contracted-in private providers.

For such a UHC system, we have identified three principal objectives of the reforms in health financing and financial protection:

- * ensure an adequacy of financial resources for the provision of universal access to essential health care;
- * provide financial protection and health security against impoverishment to the entire population of the country; and
- * put in place financing mechanisms that are consistent in the long-run with both the improved wellbeing of the population as well as containment of health care cost inflation.

We believe that even within the financial resources available to India, it is indeed possible to devise an effective architecture of health financing and financial protection that can offer UHC to each and every Indian. Our key recommendations follow.

Recommendation 1: Government (Central government and states combined) should increase public expenditures on health from the current level of 1.2% of GDP to at least 2.5% by the end of the 12th plan, and to at least 3% of GDP by 2022.

Investing in health has both an intrinsic importance and an instrumental significance. Unless a person is healthy, he or she cannot enjoy the many opportunities and good things of life. At the same time, poor health conditions such as malnutrition and iron-deficiency anaemia directly impact labour productivity in the short-run.^b In the longer-run, in inter-generational issues such as low-birth weight have been associated with a number of poor health conditions that are particularly characteristic of the Indian population.^c Also, India needs to prioritize and invest in health, especially if it wants to capitalize on the potential contribution of its large proportion (close to 40%)⁴ of its children and youth.

Enhancing public expenditures on health is likely to have a direct impact on poverty reduction, if this increase leads to a reduction in private out-of-pocket expenditures. Financial metrics show that there is a significant imbalance in private spending versus public spending and in fact private spending is almost three times the

^b Results of Weinberger (2004),⁵ for instance, indicate that "productivity, measured in wages, is indeed affected by insufficient iron intake, and that wages would on average be 5 to 17.3% higher if households achieved recommended intake levels. The results demonstrate that enhancing micronutrient intake will contribute significantly to overall economic growth and development".

^c According to Boo and Harding (2006),⁶ for instance: "Many studies have provided evidence for the hypothesis that size at birth is related to the risk of developing disease in later life. In particular, links are well established between reduced birth-weight and increased risk of coronary heart disease, diabetes, hypertension and stroke in adulthood. These relationships are modified by patterns of postnatal growth. The most widely accepted mechanisms thought to underlie these relationships are those of fetal programming by nutritional stimuli or excess fetal glucocorticoid exposure. It is suggested that the fetus makes physiological adaptations in response to changes in its environment to prepare itself for postnatal life. These changes may include epigenetic modification of gene expression".

amount of public spending. Our proposed increase in spending on health will greatly alter the proportion of public and private spending on health and, hopefully, correct the imbalance that exists.

Whereas the total per capita health care expenditure incurred by India is reasonable (around 4.5% of GDP), it ranks very low in the proportion that is financed through public expenditure. This imbalance needs to be corrected urgently. Financing the proposed UHC system will require public expenditures on health to be stepped up from around 1.2% of GDP today to at least 2.5% by 2017 and to 3% of GDP by 2022.

Increasing public spending on health, in our view, is essential for a number of reasons:

- a) Health care provision has a large number of public and merit good characteristics that justifies the use of public resources to finance it.
- b) The financing for the provisioning of the proposed NHP (that offers essential services only) requires the level of public expenditures to increase to 2.5- 3% of GDP.
- c) Prepayment and pooling provide a number of financial protection benefits. International experience has shown that this is best done through increased government expenditure rather than through the use of voluntary insurance arrangements.⁷ Prepayment from compulsory sources, (i.e., some form of taxation), and the pooling of these revenues for the purpose of purchasing healthcare services on behalf of the entire population is the cornerstone of the proposed UHC programme. Such an arrangement will provide a number of

financial protection benefits. Both international experience and important concepts^d in health economics demonstrate that voluntary mechanisms of paying for health care cannot be a basis for a universal system. This makes it critical for the government to directly expend resources and invest specifically in the provision of primary health care and on a carefully designed health care system - and not merely include access to health care as a part of overall cash- transfer programmes.

- d) Prepaid funding that is pooled on behalf of a large population is essential for ensuring that the system is able to redistribute resources and thus services to those in greatest need, given that the risk of incurring high health expenditures is often quite unpredictable at the start of any budgetary period. And as noted above, in both theory and evidence - no country that can be said to have attained universal coverage relies predominantly on voluntary funding sources - demonstrates that both compulsion (to avoid "opting out" as a result of the adverse selection phenomenon) and subsidization (to ensure that those too poor or too sick to contribute) are essential for universal coverage. Hence, increased government expenditure on health is essential to ensure a leading role for compulsory pooling as the means to progress towards universal coverage.

Spent wisely, enhancing public expenditures on health is likely to have a direct impact on poverty reduction as it should reduce the extremely high current burden of private out-of-pocket expenditures. Out-of-pocket health care expenditure incurred by citizens at the

^d The phenomenon known as adverse selection is a particular type of market failure common to health insurance. Effective risk protection requires that the prepaid pool includes a diverse mix of health risks. Left to purely individual choice, however, healthier individuals will tend not to prepay, while sicker individuals will join (assuming that they can afford it). This leaves the prepaid pool with a much costlier population than the average in the population, and as a result is not financially stable.

point of care is an important source of financial catastrophe not merely for low-income households but also for those with higher incomes as well. Table 3 shows the indicative changes in the levels and shares of public and private expenditures that are likely to follow from the recommended increase in public spending on health.

Table 3. Projected Levels and Share of Public and Private Health Expenditures: 2011-2022

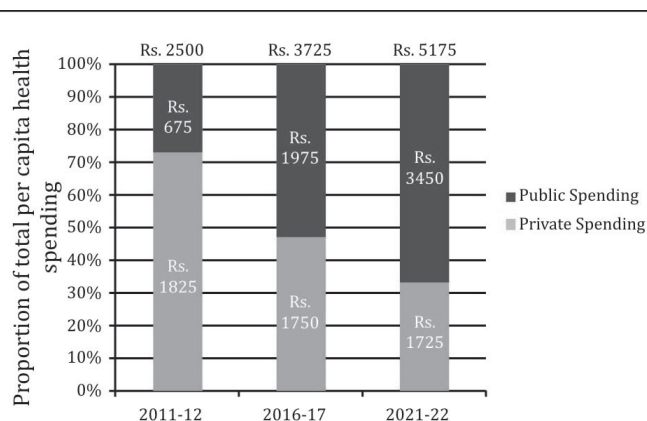
	2011-12	2016-17	2021-22
(1)	(2)	(3)	(4)
Total Health Expenditure as % of GDP*	4.5	4.5	4.5
Total public expenditure on health as % of GDP	1.2	2.5	3.0
Total private expenditure on health as % of GDP	3.3	2.1	1.5
Composition of Total Health Expenditure			
Private spending as % of total health expenditure	67	47	33
Public spending as % of total health expenditure	33	53	67
Per Capita Total Health Expenditure (Rs. 2009-10 prices)@	2,500	3,725	5,175
Per capita public spending	675	1,975	3,450
Per capita private spending	1,825	1,750	1,725

* Assuming that the total health expenditure in India (public and private together) will remain at 4.5% of GDP

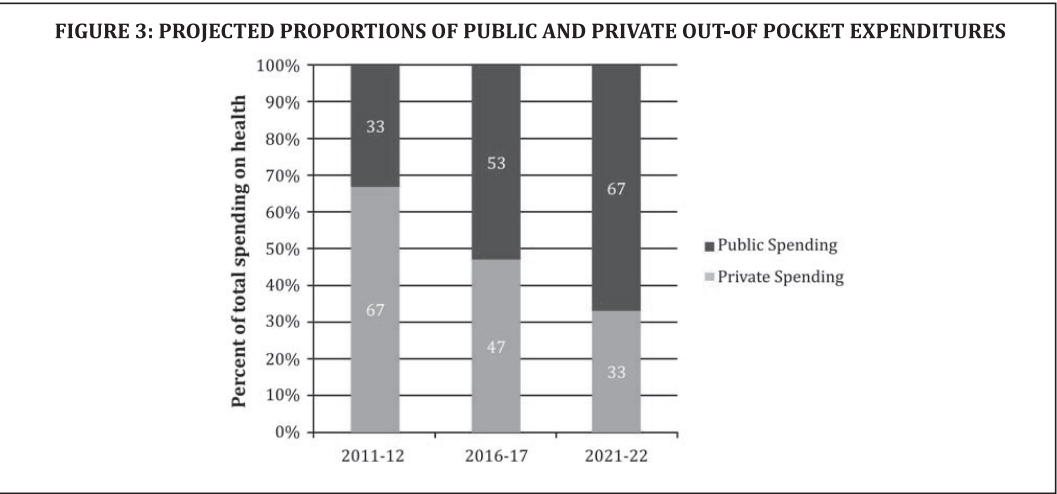
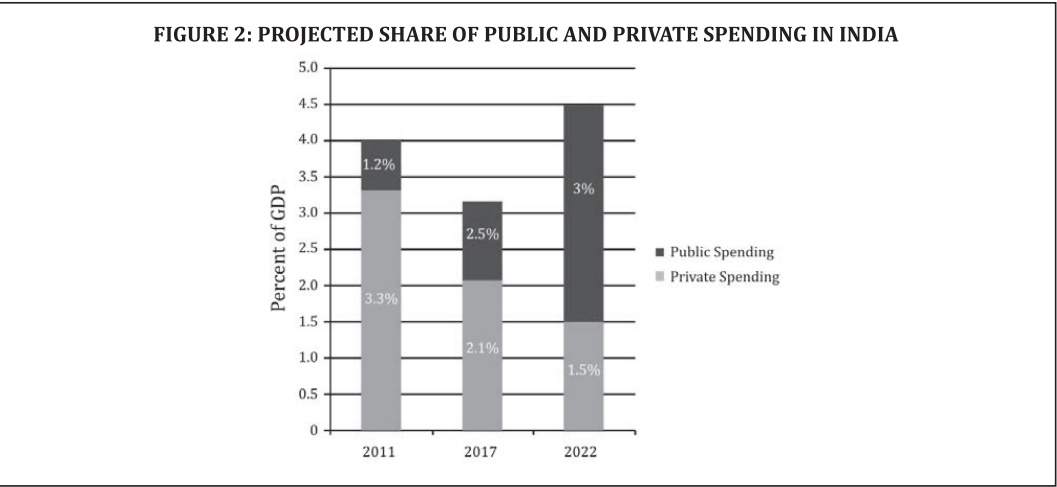
@ Assuming a real growth rate of GDP of 8% and projected population figures provided by the Registrar General of India.

Even if we assume that the combined public and private spending on health remains at the current level of around 4.5% of GDP, this will result in a fivefold increase in real per capita health expenditures by the government (from around Rs. 650-700 in 2011-12 to Rs. 3,400-3,500 by 2021-22). There will also be a corresponding decline in real private out-of-pocket expenditures from around Rs. 1,800-1,850 in 2011-12 to Rs. 1,700-1,750 by 2021-22 (Figure 1).

FIGURE 1: PROJECTED REAL PER CAPITA HEALTH SPENDING IN INDIA AT CURRENT PRICES (2009-2010)



Such a planned expansion in public spending on health, if spent judiciously, could change significantly the patterns of public and private spending on health in India (Figure 2).



Increased public expenditures, in our estimate, could potentially lead to a sharp decline in the proportion of private out-of-pocket spending on health - from an estimated 67% in 2011-12 to around 33% by 2022 (Figure 3) if the increased public spending is implemented in a way that substitutes for much of current private spending.

The resulting impact of increased public spending on human poverty - in terms of transforming quality, improving access to health care and reducing sharply the burden of private out-of-pocket expenditures - is likely to be sizeable and significant.

Recommendation 2: Ensure availability of free essential medicines by increasing public spending on drug procurement.

Availability of most essential drugs in India is not a serious concern. India is also a global leader in the production and supply of generic medicines at affordable prices. However, low public spending on drugs and the consequent non-availability of free medicines in government health care facilities are major factors discouraging people from accessing public sector health facilities. Addressing this deficiency by ensuring adequate supplies of free essential drugs is vital to the success of the proposed UHC system. We estimate that an increase in the public procurement of medicines from around 0.1% to 0.5% of GDP would ensure universal access to essential drugs, substantially reduce the burden of private out-of-pocket expenditures and provide much-needed financial risk protection for households. Increased spending on drugs needs to be combined with a pooled public procurement system to ensure adequate supplies and rational prescription of quality generic drugs by the public health system. Distribution and availability of quality medicines across the country could be ensured by contracting-in of private chemists.

Recommendation 3: Use general taxation as the principal source of health care financing - complemented by additional mandatory deductions for health care from salaried individuals and tax payers, either as a proportion of taxable income or as a proportion of salary.

For a lower & middle-income country like India, with millions of self-employed and under-employed people working predominantly in the unorganised sector, general taxation is the most viable option for mobilizing resources to achieve the target of increasing public spending on health and creating mechanisms for financial protection for all. The conditions necessary for other methods of financing, such as payroll or social security contributions to generate sufficient revenues on their own (large formal sector employment, significant payroll or social security contribution and strong tax collections) are not present in India, and will be slow to emerge over the coming decade. Given the significant social benefits from health care, it would be appropriate to finance it through general taxation.

Special efforts should be made to increase revenues through tax administration reform and, in particular, improved information system for taxes at both central and state levels. The tax ratio in India at a little over 15 per cent of GDP is lower than the average for countries with less than USD 1000 (18%) and substantially lower than the average for middle income countries (22% for countries with per capita income between USD 1000 and USD 15000). The enactment of a Direct Taxes Code (DTC) and the introduction of Goods and Services Tax (GST) could improve the revenue productivity of the tax system. Another important area for improving the tax productivity is to review all tax incentives and undertake measures to reduce arrears in taxes.

While improving the tax-to-GDP ratio is necessary, it is equally important to increase the share of overall public spending devoted to health. As noted, India devotes among the lowest proportion of total public spending to health - at or below 4.4% of total government spending between 1999 and 2009 according to WHO data, and in 2009. Only 9 countries (out of 191) devoted a smaller share of government spending to health than did India.

Moreover, looking into the future, given that (i) both the organised sector base and the taxpayer base are likely to grow; (ii) the efficiency of tax collections is improving; and (iii) the goal is to offer cashless health care to all sections of the society, it would be appropriate to complement general taxation with a specific surcharge on salaries or taxable income to pay for UHC. This will also obviate the need to levy user charges on the 'rich' at the point-of-care since they would have contributed to it through a pay roll or taxable income surcharge.⁶

This combines equity considerations with a feasible way of increasing the size of the prepaid pool, so that the final revenue mix would contain discretionary transfers from general budget revenues and also possibly earmarked funds for UHC coming from the payroll tax or surcharge.

Recommendation 4: Do not levy sector-specific taxes for financing.

Revenues from specific sources could be potentially earmarked to finance health care. These include, for instance, sector-specific taxes such as a yearly charge of 0.05% on the banks' balance sheets as in United Kingdom, a mineral resources rent tax as in Australia, a special VAT levy in Ghana, tobacco and alcohol taxes, or heavy taxes on petroleum products.

However, in our view, these options may not be appropriate for India for the following reasons:

- a) None of these options is likely to meet substantially the financial requirements of Universal Health Coverage.
- b) The practice of earmarking financial resources distorts the overall fiscal prioritisation.
- c) Given that most public revenues are fungible, earmarking from a specific tax may not actually add to the health budget if the increased funds from the earmark are offset by reductions from discretionary revenues.
- d) Though earmarking is not desirable, higher taxes on tobacco and alcohol have the public health benefit of reducing consumption of these harmful products, while adding to the general revenue pool. However, dependence upon revenue mobilisation from such sin and sumptuary taxes is fraught with perverse incentives. Securing more resources for health sector would, for instance, require increased consumption of alcohol and tobacco products both of which are undesirable.

We, therefore, recommend that additional resources for increasing public investments in health (and other social services) should be generated by enhancing the overall tax-to-GDP ratio by widening the tax base, improving the efficiency of tax collections, doing away with unnecessary tax incentives, and exploring possibilities of reallocating funds to health.

Recommendation 5: Do not levy fees of any kind for use of health care services under the UHC.^{e,f}

We recommend that user fees of all forms be dropped as a source of government revenue for health.⁸ This view is strongly endorsed by Jeffrey Sachs and others, including the authors of the Report of the Millennium Development Goals project who contend that ending user fees for basic health care in developing countries can guarantee a ‘quick win’.⁹ Recent global experience points to several drawbacks of user fees:

- a) Imposition of user fees in many low and middle income countries has increased inequalities in access to healthcare.¹⁰
- b) Modest levels of fees have led to sharply negative impacts on the usage of health services even from those that need them. For example, a full course of antibiotics may not be taken in order to save money, leading to avoidable illnesses and long-term drug resistance build-up.¹¹ User fees also deter consumption of medical care, without necessarily distinguishing between excessive and unnecessary medical care.
- c) User fees have not proven to be an effective source of resource mobilization. The administrative costs of collecting user fees tend to be high relative to the revenues generated, especially when a significant share of users receive exemption due to poverty.¹²
- d) There are practical challenges of means-testing and errors of inclusion and exclusion associated with identifying the economically weaker sections of society.
- e) Given that people in India already pay a substantial amount out-of-pocket, whether to private providers or in the form of informal payments in public facilities, a differential fees model which charges different fees to people in different economic levels in a society was considered as an approach for leveraging user fees as a financing mechanism and improving the fairness and transparency by which people contribute. However, it would be very difficult to provide equitable services to all economic sections of the society through a differential fee arrangement
- f) Limiting corruption and administrative costs associated with receiving payments at the point of care, makes it difficult to implement a program based on differential fees. That money may be charged from some people opens the room for rent-seeking (illegal under-the-table payments) at the point-of-care from the poor.
- g) As a practical and political issue, increasing official user fees, when they are so low and yet impose financial barriers to access, would be politically and practically difficult to justify. The benefits of such an effort are unlikely to be worth the (financial, administrative and political) costs.

^e Indian incomes are so low and so skewed that a large proportion of the population finds even routine health care expenditure ‘catastrophic’ (defined by the WHO as more than 40% of net disposable income after meeting other essential needs).^{7,8} It is not so much the absolute availability of financial resources itself, but the need to find money at the point-of-care that most often has catastrophic consequences.

^f One of the HLEG members differed with this recommendation, because he was of the considered view that persons who can afford to pay should be charged for tertiary care services.

^g This would include charges under the Rogi Kalyan Samiti scheme, voluntary donations directly made to hospitals and those levied for the use of improved facilities such as room and board.

- h) User fees can sometimes be employed as a means of limiting excessive consumption of unnecessary healthcare but there are other approaches such as effective triaging, providing preventive care etc. that are more effective in controlling this issue.
- i) The implication of mandatory deductions to pay for health care from tax payers and salaried employees, over and above the general income taxes (which would be pooled along with the other tax resources) is that the non-poor will end up paying for these services in any case but will be insulated from the need to pay at the point-of care.
- j) Out-of-pocket payment at the point of care is the most important reason why healthcare expenses turn catastrophic for all health-care users.^{7,8} As a result, user fees that tend to have an out-of-pocket character are not desirable even from even those that can afford to pay them.
- a) health indicators are poor in low per capita income states implying that health expenditure needs in low income states are much larger than in states with higher per capita incomes; and
- b) actual expenditures on health care in low income states are substantially lower than in high income states.

It has been the practice by the central government to augment the financial resources of state governments through the modality of the National Rural Health Mission and RSBY. The fundamental rationales for the central transfers are to (i) ensure that all states devote sufficient resources to ensure the NHP for their entire population; and (ii) reduce inequalities in access and financial protection arising from the fact that poorer states have lower levels of government health spending than do richer states.

There is a strong case for augmenting specific purpose transfers from the Centre to states and designing an appropriate transfer scheme to reduce the disparity in the levels of public spending on health across states. The specific purpose transfer scheme by augmenting health spending should ensure that a basic package of health care services is available to every citizen in every state across the country. Moreover, ensuring basic health care services to the population, like poverty alleviation or universalising elementary education, has nation-wide externalities, and is also consistent with principles of equity. Therefore, although implementation of the provision of basic health services has to be done at sub-national (state) levels, a substantial proportion of financing of these services can and should come from the Central government. In other words, the Central government should (as in the case of Sarva Shiksha Abhiyan) provide

Therefore overall, user fees would not be desirable for the proposed vision of the UHC programme.

Recommendation 6: Introduce specific purpose transfers to equalize the levels of per capita public spending on health across different states as a way to offset the general impediments to resource mobilization faced by many states and to ensure that all citizens have an entitlement to the same level of essential health care.

Improvements in health status depend critically upon augmenting public spending on health generally, and substantially in low income states. This is because analyses of public health expenditures and health outcomes reveal that:

adequate funding for provision of basic primary and secondary health care services. The extent of Central and state contributions should depend on the perceived degree of nation-wide externality versus state-wide externality.

It is, however, important while designing such a transfer scheme to ensure that states do not substitute Central transfers for their own contribution to health and continue to assign priority to health even as they receive Central funds. It would be necessary to ensure that states not only continue to contribute as much as they do now, but also increase these proportions consistently over the years. In other words, the transfers received from the Central government along with the

matching contribution by the states should constitute additional public spending on health - and should not be used to substitute spending from own resources by the states.

With states sharing two-thirds of the overall public spending in the country, this would be a necessary condition for reaching the target level of public spending on health of 3% of GDP across the country by 2022. If sharing of public spending by the States and the Centre continue in the ratio of 2:1, expenditure by the States and the Centre in per capita terms (in 2009- 10 prices) and as a share of GDP are likely to be as follows (see Table 4):

Table 4. Projected Share of Centre-State Health Expenditures: 2010-2022

	2011-12	2016-17	2021-22
(1)	(2)	(3)	(4)
As % share of GDP			
Total Public expenditure on health	1.2	2.4	3.0
- Of which share of Centre (1/3)	0.4	0.7	0.9
- Of which share of States (2/3)	0.8	1.7	2.1
As % share of total public spending	4.1 (2009)	6.9-7.1	8.3-8.9
Total per Capita public expenditure on health (Rs. In 2009-10 prices)	675	1,975	3,450
- Of which share of Centre (1/3) (Rs.)	225	658	1,150
- Of which share of States (2/3) (Rs.)	450	1,317	2,300

Source: HLEG Secretariat

An equalization scheme for transfer of funds from the Centre to the states should be equitable, should ensure full utilization of the funds allocated, and should result in additional spending and not substitution of spending from states' own revenues. This is all the more important because, as noted earlier, the existing pattern of resource allocation by India's State and Central governments, collectively result in one of the lowest

priorities given to health of any country in the world.

Box 1 presents an illustrative transfer scheme that is consistent with the overall level of public spending envisaged for the country and the cost-sharing ratio of 2:1 between the states and the Centre.

Box 1: An illustrative transfer scheme

1. Classify states into two categories:

Category A:

Non-high focus states as classified under the National Rural Health Mission (list of states in Table 3)

Category B:

High focus states as classified under the National Rural Health Mission (list of states in Table 3)

2. Estimate the incremental expenditures required for providing the basic entitlement package (of selected primary, secondary and tertiary health care services) to every citizen.
3. Preliminary estimates by the Public Health Foundation of India for 2020 suggest that the cost of providing the entitlement package (at 2008-09 prices) will be around: Rs. 1,500 per capita for general category states; and Rs. 2,000 per capita in special category states.
4. Cost sharing formula:

Category A states:
The Centre shall meet 60% of the incremental expenditures required for ensuring the basic entitlement package.

Category B states:
The Centre shall meet 90% of the incremental expenditures required for ensuring the basic entitlement package.
5. To be eligible to receive Central funding:
 - * states with health expenditures, as percentage of their GSDP, less than the all-state average (separately for general category and special category states) will have to incrementally increase it to the average level;
 - * states with more than average proportions should continue to maintain these proportions. Additionally, all states will have to increase their health spending by 1% of GSDP by 2020.

Table 5. Illustrative Specific Transfer Schemes Across Different Categories of Indian States

States	Per capita public spending health 2019-0** (Rs)	Required per capita normative expenditure (Rs.)	Additional per capita expenditure required to meet normative expenditure	Share of State (%)	Share of Centre (%)	Per capita States expenditure required for meeting the gap from the norm (Rs. per capita)	Per Capita Centre expenditure required for meeting the gap from the norm (Rs. per capita)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GENERAL CATEGORY STATES (as classified under the National Rural Health Mission)							
Bihar	356	1,500	1,144	10	90	114	1,029
Uttar Pradesh	450	1,500	1,050	10	90	105	945
Madhya Pradesh	352	1,500	1,148	10	90	115	1,033
Assam	482	1,500	1,018	10	90	102	916
Jharkhand	468	1,500	1,032	10	90	103	929
Rajasthan	563	1,500	937	10	90	94	844
Odisha	590	1,500	910	10	90	91	819
Chattisgarh	656	1,500	844	10	90	84	760
West Bengal	522	1,500	978	40	60	391	587
Andhra	822	1,500	678	40	60	271	407
Karnataka	795	1,500	705	40	60	282	423
Kerala	1,061	1,500	439	40	60	176	264
Tamil Nadu	1,063	1,500	437	40	60	175	262
Punjab	953	1,500	547	40	60	219	328
Gujarat	1,104	1,500	396	40	60	158	238
Maharashtra	1,355	1,500	145	40	60	58	87
Haryana	1,226	1,500	274	40	60	110	165
SPECIAL CATEGORY STATES (as classified under the National Rural Health Mission)							
Arunachal Pradesh	3,563	2,000	0	10	90	0	0
Goa	3,148	2,000	0	40	60	0	0
Himachal Pradesh	1,845	2,000	155	10	90	15	139
J&K	1,160	2,000	840	10	90	84	756
Manipur	571	2,000	1,429	10	90	143	1,286
Meghalaya	979	2,000	1,021	10	90	102	919
Mizoram	4,500	2,000	0	10	90	0	0
Nagaland	N.A.	2,000	N.A.	10	90	N.A.	N.A.
Sikkim	3,049	2,000	0	10	90	0	0
Tripura	1,108	2,000	892	10	90	89	803
Uttarakhand	2,292	2,000	0	10	90	0	0
A & N Islands	N.A.	2,000	N.A.	40	60	N.A.	N.A.
Chandigarh	N.A.	2,000	N.A.	40	60	N.A.	N.A.
Delhi	2,855	2,000	0	40	60	0	0
Pondicherry	2,549	2,000	0	40	60	0	0

** Assuming that until 2020, Gross State Domestic Product (GSDP) will grow at average real compound growth rate in the period 2004-05 to 2009-2010 and states will continue to spend the same share of GSDP on health in 2020.

Table 5 shows the State wise distribution of funds for different states using the formula for transfers outlined in Box 1.

Recommendation 7: Accept flexible and differential norms for allocating finances so that states can respond better to the physical, sociocultural and other differentials and diversities across districts.

A major factor accounting for the low efficiency of public spending has been the practice of the Central government to develop and enforce uniform national guidelines for similar transfers for health across all states. Such a practice fails to take into account India's diversity and contextual differences. It also fails to properly incentivize state governments to draw up their own health plans in keeping with the needs of communities. We, therefore, recommend that the Central government should adopt a fiscal transfer mechanism that allows for flexible and differential financing from the Central government to the states. This will also allow for Central transfers to better meet the diverse requirements of different states, and enable states to develop health plans that are consistent with the health care needs and requirements of their populations.

Recommendation 8: Expenditures on primary health care, including general health information and promotion, curative services at the primary level, screening for risk factors at the population level and cost effective treatment, targeted towards specific risk factors, should account for at least 70% of all health care expenditures.

We envisage a major role for primary health care in the UHC system. There are therefore a number of reasons for recommending specific earmarking of resources for primary health care:

- a) The coverage of essential primary care services for maternal and child health, vision, oral health and hearing continues to remain inadequate.
- b) The infectious disease burden continues to be very high in several parts of the country. Early identification and treatment of these diseases coupled with prevention at the community level are the only ways to reduce this burden.
- c) The widespread burden of malnutrition including easily treatable conditions such as iron deficiency and anaemia can only be dealt with at the primary care level.
- d) The surge in chronic illnesses, along with unipolar depression, cardio-vascular disease and diabetes are rapidly becoming dominant burdens of disease.
- e) An ageing population will require home-based or community-based long-term care.

We, therefore, recommend earmarking at least 70% of public expenditures, both in the short-term and over the medium term, for preventive, promotive and primary health care. This is absolutely essential - especially if we want to offer the UHC system with modest levels of allocations of government resources and, as a nation, reap the full benefits of UHC.

Recommendation 9: Do not use insurance companies or any other independent agents to purchase health care services on behalf of the government.

Having recommended that (i) general taxation and other deductions from the non-poor would be pooled to provide UHC; and that (ii) private voluntary contributions and out-of-pocket expenditures or user charges should not be the means to finance UHC, this recommendation deals with how pooled funds can be used to provide and, if necessary, purchase health care. This is perhaps the most important determinant

of long-term health outcomes and has several long-term and short-term cost implications for the country.

Indian states have experimented with several ways of providing and purchasing health care. In the context of delivering UHC, we have examined three options:

- a) **Direct provision:** All the resources mobilised for the UHC system are transferred to the relevant Ministries and Departments of Health for the direct provision of all services.
- b) **Direct provision plus contracted-in services:** All the resources mobilised for the UHC system are transferred to the relevant Ministries and Departments of Health which in turn offer services through a judicious mix of direct provision and purchase of services from the private sector.
- c) **Purchase by an independent agency:** All the resources mobilised for the UHC system are transferred to an independent agency (such as an insurance company); or a government department (such as the Ministry of Labour); or a specially constituted Trust, with its own management structure, which can then purchase health care services from either the Ministries and Departments of Health or the private sector.

We have made the case for complementing the direct provision of health services by the government with the purchase of additional services from contracted-in private providers by the government. This, we have argued, is more practical and desirable than relying exclusively on direct provision of health services by the public sector.

Concerns are often expressed about the capacity of the Ministries and Departments of

Health to either directly provide health care services or purchase them from the private sector. The use of third parties such as insurance companies to purchase health care services from both the government and the private sector and to allow insured-customers to freely choose providers from whom to seek services, therefore, offers an alternative model. This is demonstrated by the rapid spread of insurance schemes such as the Rajiv Aarogya Sri Community Health Insurance Scheme or the Rashtriya Swasthya Bima Yojana (RSBY) across several states. However, in formulating our recommendations, we have kept the following design principles in mind:

- a) **Universal and easy access:** There should be universal and easy access to high quality curative services combined with a full roll out of highly cost-effective preventive and promotive interventions at the primary care level.
- b) **Adequate supply:** There should be an adequate supply of secondary and tertiary care services of sufficient quality to meet the needs of the population under the UHC system.
- c) **Well integrated care:** The secondary and tertiary care that is provided should be well integrated with primary care to ensure careful management of the long-term wellbeing of the patient.
- d) **Cost containment:** Secondary and tertiary care costs should be kept tightly under control so that they do not crowd out the rest of government health spending, especially given the importance of investing in primary care.

The use of insurance companies to expend government resources is an unusual model and there are very few examples of this globally. The key benefit of insurance as a mechanism to pool

risks is not operative in this case since the use of tax based financing, coupled with a mandatory surcharge on taxable income, already effectively ends up pooling the contributions from the entire country with the richest and potentially the healthiest cohorts contributing the largest amounts. Without the risk pooling role, the principal tasks performed by the insurance companies are as follows:

- a) Contracting-in of private and government hospitals.
 - b) Control of costs, through carefully designed fraud control and, where necessary, pre-approval mechanisms.
 - c) Enrolment of customers, issuance of insurance cards to them and ensuring provision of services to them at the network hospitals.
 - d) Management of customer complaints and tracking of the cost and the quality of services that are provided by network hospitals.
- The experience of RSBY has been that insurance companies, particularly those in the private sector, have performed these roles well and have gradually been able to address several of the lacunae regarding enrolment, utilisation levels and fraud control.
- However, in our view, even though the use of insurance companies to purchase health care services does offer the possibility of addressing several of the capacity constraints of the Ministries and Departments of Health in the short-run, a continuance and expansion of this approach would, in the medium-term, lead to very suboptimal outcomes for the country. Our concerns arise due to serious design flaws:
- a) The independent purchaser (in the case of most of these schemes, the insurance company) does not have any accountability for wellness outcomes of the overall population or at the individual level both in the case of infectious and chronic diseases. This accountability continues to rest with the Ministries and Departments of Health, which often have no role in the design of these schemes.
 - b) There is a serious danger that the overall health system will become excessively focused on curative services especially as utilisation levels creep upwards and the supply of secondary and tertiary care facilities respond to the availability of money with insured customers. Since there will be no attempt to control the disease burden at the primary level, this could lead to rapid upward revisions in the underlying insurance premiums to the point of entirely consuming or even exceeding the total health budget of the country.^h
 - c) Health care is a long-term service that needs to track and be responsive to very long-term outcomes, sometimes intergenerational. A standard insurance type purchasing mechanism which relies entirely on the customer to make all the health care decisions, is not well suited to do this.
 - d) There are strong linkages between curative, preventive, promotive strategies and systematic behaviour change efforts to reduce, for example, tobacco use and salt consumption and promote improved breast feeding practices. Here, while insurance

^h The HLEG's discussions with insurance companies participating in RSBY suggest that this is already starting to happen in states such as Kerala where utilisation levels are rapidly moving upwards.

- companies could be persuaded to invest in some behaviour change communication messages (since there are no immediate benefits to the insurer of these strategies), in practice, the insurer tends to reflect the gradual increases in costs which are the consequence of dysfunctional behaviours in the form of increased premiums.
- e) Chronic illnesses need long-term home or community based care and not necessarily at specific facilities. Traditional insurance type mechanisms (as opposed to Managed Care) are not well suited to purchasing and managing this type of care. They tend to produce excessive hospitalisation.ⁱ
 - f) Purchasing of health care services would need to be done at the district level on account of the wide variations in the health care status of individuals and associated causal factors. Insurance schemes that run on a state-wide basis do not take into account these differences and do not allow the district level health systems manager a sufficient degree of flexibility in managing budgets to respond to specific needs at the district level.
 - g) Insurance companies, given the short-term nature of the contracts that are necessary to exploit the benefits of competition for contracts, would have limited interest in investing in preventive promotive services. Even where they do, they would focus on those aspects that reduce costs of care and not necessarily on those that improve the conditions of health and well-being.^j
 - h) Moreover, we regard the underlying fee-for-service approach behind these models as a very important design flaw of this approach. It becomes necessary, therefore, to either explore a completely different approach towards the use of insurance companies and independent agents - more in the Managed Care Framework, where they take on explicit population level health outcome responsibilities or invest further in the capacity of the Ministries and Departments of Health to directly provide and purchase services from contracted-in

ⁱ For example, Bachman et al (2008)¹³ evaluate "a managed care model developed for use by community-based providers to improve health care outcomes for low-income Latinos with disabilities and chronic illnesses. Through this model, Medicaid enrollees with special health care needs were identified and received enhanced primary care, on-site mental health and addiction services, care coordination, and support services based on their levels of need. The goal of the demonstration was to determine whether capitation would be a catalyst to transform typical primary care delivery processes to provide enhanced, culturally competent care to patients with complex health care and psychosocial needs. Despite a significant investment in out-patient services, the intervention was cost effective due to a dramatic decline in in-patient care for a few enrollees. For most enrollees, care was slightly more expensive due to enhanced out-patient medical and mental health care. Enrolees expressed high satisfaction with the intervention".

^j On this issue, Professor Anne Mills, in a discussion with the HLEG pointed, out that: "While one may expect the insurance industry to wish to control costs (since cost inflation would make insurance increasingly unaffordable), their record in doing this across the world is very poor, partly because the industry simply passes on the consequences to households, e.g., in co-payments, deductibles, etc."

private providers wherever necessary.^k We favour the latter option.

Recommendation 10: Purchases of all health care services under the UHC system should be undertaken either directly by the Central and state governments through their Departments of Health or by quasi-governmental autonomous agencies established for the purpose.

We recommend that the central and state governments (Departments of Health or specific purpose quasi-governmental autonomous agencies with requisite professional competencies created by them) should become the sole purchasers of all health care services for UHC delivered in their respective jurisdictions using pooled funds from general taxation and other contributions. Provisioning of health services at primary, secondary and tertiary levels should be integrated to ensure equitable and efficient procurement and allocations. We believe that it is possible to substantially reform the manner in which Ministries and Departments operate so that they can become effective purchasers of health care services. District-specific assessment of health care needs and provider availability, communicated by the Director of District Health Services, should provide the basis for state level purchase of services. The example of the Tamil Nadu Medical Services Corporation, which has functioned as an efficient agency of the State in Tamil Nadu, could serve as a possible model.

Given the high levels of variation in the nature of the disease burden, we envisage, over time, a system where the responsibility for decision making is transferred to the level of the district within a state - with perhaps a few districts coming together to form a viable unit where the size of an individual district is suboptimal. Government should use, at the level of such a unit, (i) a combination of departmental and independent purchasing agents and (ii) contracting-in high quality care, such that users have an adequate degree of choice and national portability through the NHEC. State governments should transfer funds to the district and allow the District Health System managers to allocate the funds between public provision and purchase of services on a competing basis from contracted in private providers, while tracking outcomes at the district level and holding these managers accountable for these outcomes. We recognize the limited capacity within government and envisage that, to begin with, purchases may need to be centralized at the state level. However, over time, it is possible to foresee a system where the district health system managers may eventually be able to purchase and enhance quality of care by using a variety of methods and also keep costs as well under control.

State governments should consider experimenting with arrangements where the state and district purchase care from an integrated network of combined primary, secondary and tertiary care providers. These provider networks should be regulated by the government so that they meet the rules and requirements for delivering cost effective, accountable and quality health care. Such an

^k Hsiao (2007)¹⁴ expresses the view that market based competition between health insurers does not improve outcomes (gives United States as the most celebrated example of its failure amongst OECD countries) but such competition for the provision of health care itself "may hold the potential for more efficient and high quality care" and strongly argues against the use of health insurance to purchase any kind of health services on four grounds: (a) risk selection and selective rejection of claims by insurers. Mandatory enrolment and technology based cashless policies issued under RSBY in India seem to have taken care of this issue - however it remains to be seen how are the premiums that need to be sustainably charged to make these schemes viable for insurers. He suggests that both United States and Chile have however ended up in this situation owing to their reliance on insurance companies as purchasers of health care; (b) high transactions costs implied by the use of insurance companies relative to other direct and indirect methods of purchase of health care by the government. He cites numbers as high as 31% for the United States which uses private insurance to purchase health care versus only 16% for Canada which relies on a single payer social insurance system; (c) very high health care cost inflation that in his view is the inevitable consequence of the use of insurance style purchasing - he argues that while on average growth rate in health care spending across developed nations exceeds average GDP growth rate by 2.08%, he shows that in countries such as the United States and Germany which rely on insurance companies this rate is far higher than in Canada and United Kingdom which rely on Single Payer models.; and (d) no incentives for investment in preventive promotive health care strategies.

integrated provider entity should receive funds to achieve negotiated predetermined health outcomes for the population being covered. This entity would bear financial risks and rewards and be required to deliver on health care Health Financing and Financial Protection 114 High Level Expert Group Report on Universal Health Coverage for India and wellness objectives. Ideally, the strengthened District Hospital should be the leader of this provider network.

Recommendation 11: All government funded insurance schemes should, over time, be integrated with the UHC system. All health insurance cards should, in due course, be replaced by National Health Entitlement Cards. The technical and other capacities developed by the Ministry of Labour for the RSBY should be leveraged as the core of UHC operations - and transferred to the Ministry of Health and Family Welfare.

Smoothly transforming the RSBY over time into a universal system of health entitlements and building on its existing capacity and architecture to issue citizens with a National Health Entitlement Card with a minimum amount of disruption, would in our view be the best way forward to satisfy the social objectives of both NRHM and RSBY. A high level of capacity has been developed within the Ministry of Labour for the management of the RSBY. This capacity should be utilized for the roll out of the UHC system even if the functions performed by the insurance companies will now be performed by the Ministries and Departments of Health.

Moreover, effective triaging and management of patients can ensure quick treatment times. Traditional insurance schemes, including those being funded by the government (such as RSBY and the Rajiv Aarogyasri Healthcare Insurance Scheme) are entirely focused on hospital networks rather than primary care services. The

advantages of such a network design for consumers are a large supply of hospitals in the network and short waiting times for hospital admissions. However, since there is virtually no focus on primary level curative, preventive, and promotive services and on long-term wellness outcomes, these traditional insurance schemes often lead to inferior health outcomes and high health care cost inflation.

We wish to clarify at this stage that though the proposed UHC system shares a number of features with what is traditionally understood to be health insurance, there are a few critical differences that are a deliberate part of the design. These, in our view, are essential for realizing better health care access and cost outcomes. It can be seen from Table 6 that:

- a) the system of Universal Health Coverage has all the characteristics of traditional health insurance on the risk pooling dimension along with financial protection;
- b) the UHC system underscores the importance of an extensive and high quality primary care network and believes that this will then reduce considerably the need for secondary and tertiary facilities. The traditional insurance schemes, including those being funded by the government (RSBY and the Rajiv Aarogyasri Healthcare Insurance Scheme) are entirely focussed on hospital networks. The differences are in terms of provider network design;
- c) the advantages of such a traditional insurance network design for consumers are a large supply of hospitals in the network and short waiting times for hospital admissions. However, since there is virtually no focus on primary level curative, preventive, and promotive services and on long-term wellness outcomes, these traditional insurance schemes most often lead to inferior health outcomes and high health care cost inflation;

Table 6. Features of Selective Existing Insurance Schemes and The Proposed UHC System

	Voluntary Health Insurance	RSBY ¹⁶	Rajiv Arogyasri ¹⁷	The proposed UHC system
(1)	(2)	(3)	(4)	(5)
Risk Pooling	Yes	Yes	Yes	Yes
Risk Pooling Vehicle	Insurance Company	Government	Government	Government
Purchase of Healthcare	Insurance Company	Insurance Company	Insurance Company	Government
Cashless	Yes	Yes	Yes	Yes
Hospital Network	Very Large number of hospitals	Very Large number of hospitals	Very Large number of hospitals	Limited number of hospitals based on assessed need
Financial Protection	Limited to insured amount	Limited to Rs. 30,000 per year, per family upon hospitalisation only	Limited to Rs. 100,000 per year, per family upon hospitalisation only	No financial Limits. Covers all essential healthcare needs at all levels both in and out of the hospital
Primary Care Network	Limited to OPD at hospitals	Limited to OPD at hospitals	None	Extensive
Likelihood of waiting periods for non-emergency hospital admissions	Low	Low	Low	High
Integrated Care	No	No	No	Yes
Focus on Prevention and Wellness	No	No	No	Yes
Dominant Payment model to health provider	Fee for service ¹⁸	Fee for service	Fee for service	Capitation ¹⁹
Regulation of Quality	Largely focussed on financial fraud prevention	Largely focussed on financial fraud prevention	Largely focussed on financial fraud prevention	Much more detailed input and outcomes based regulation
Private Sector Engagement	Yes	Yes	Yes	Yes
Primary Care	Extremely Limited	Extremely Limited	No	Yes. Unlimited
Secondary Care	Within Financial Limits	Within Financial Limits	No	Yes. National Health Package. No Financial Limits
Tertiary Care	Within Financial Limits	No	Within Financial Limits	Yes. National Health Package. No Financial Limits
Gatekeeping Function ²⁰	Third Party Administrator ²¹	Third Party Administrator	Third Party Administrator	Primary care provider

- d) the focus here, is on reducing disease burden faced by communities and to identify and treat illnesses early in their cycle. This is why we emphasise investing in primary care networks and holding providers responsible for wellness outcomes at the population level. This design requires relatively fewer secondary and tertiary care hospitals. A potential consequence of this, however, could be that those customers who choose to by-pass their primary care physician and go directly to hospitals may encounter queues and waiting times. The

expectation is that such queues would only be for elective and non-emergency surgeries and would act to persuade customers to return to their primary care physician as the first point of contact.

Table 6 presents a comparative picture of some of the features of selective existing insurance schemes and the proposed the UHC system.

The transition to the UHC system resulting from the above recommendations is captured in Table 7.

Table 7. Transition in Health Financing and Insurance to Universal Coverage

	2011	2017	2020
(1)	(2)	(3)	(4)
Tax financing	Relatively low	Increasing	Relatively high
Private financing	Relatively high	Decreasing	Relatively low
Employer/employee contribution	Relatively low	Increasing	Relatively high
Coverage	Mostly rich and targeted poor	Expanded coverage to include poor and other targeted communities	Universal
User fees	Prevalent	Eliminated	Eliminated
Central Government insurance schemes	Large numbers catering to different groups; little communality	Reduced in numbers; merged with the UHC system	None - and integrated fully with the UHC system (including CGHS, ESIS and other schemes for the railways and other public sector institutions)
State government insurance schemes	Option open subject to state government financing	Option open to top up Central Government's UHC-National Health Package (NHP) funding subject to state government financing	Option open to top up Central Government's UHC-NHP funding subject to state government financing
Private (including community based) insurance schemes	Large variety with option to individuals to top up government coverage	Large variety with option to individuals to top up government coverage	Large variety with option to individuals to top up government coverage

Two final comments: One, clear cut guidelines as well as adequate checks and balances should be developed for both public provision as well as the effective contracting-in for the provision health care at all levels. Two, a common IT-enabled information gathering, monitoring and networking system is critical for the effective implementation of the UHC system. Both these are discussed in the chapter on Management and Institutional Reforms.

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CHAPTER 2 ACCESS TO MEDICINES, VACCINES AND TECHNOLOGY

1. The Role of Medicines in Achieving Universal Health Coverage

Medicines are a major component of modern health systems today and have helped significantly reduce the burden of deaths and disease the world over. Despite the availability of adequate knowledge, technology and skills to innovate and develop new drugs, the global community faces tremendous challenges in prioritizing and delivering essential medicines to vulnerable populations who are in urgent need of them, while limiting the consumption of non-essential and expensive medicines by those who do not need them.

The past six decades of health and drug policies in India reflect this trend and highlight these challenges. The 20 year period between 1950s and early 1970s witnessed high drug prices and the dominance of transnational drug companies. This eventually gave way to a self-sufficient era post-1970s. However, since the initiation of market friendly economic reforms, drug prices have risen significantly. India's drug market structure is presently vulnerable to control by multinational companies who are beginning take over the dynamic domestic generic drug industry

Due to under-investment in public health and under-funding of drug procurement, many Indians are experiencing an impoverishment and are driven to debt and asset loss. Targeted approaches have not yielded results and have even led to distortion of the health system. Access to health care and to drugs must be therefore based on the principles of universalism, equity, efficiency and quality. The primary objective of any strategy in providing universal access to medicines is to remove financial risks and make prepayment a prerequisite. This must be complemented by cross-subsidising those who cannot afford medicines (poor and non-poor alike).¹

Governments need to commit a higher level of spending on drugs to reduce inter-state and inter-district disparities in drug spending which become barriers to access and affordability. Advancing the cause of Universal Health Coverage is predicated on the assumption that efficient use of resources will be achieved. Unnecessary spending on non-essential medicines has to be reduced and irrational use eliminated. Improving overall governance and accountability of medicine supply system is absolutely essential to make medicines available to one and all.

2. Situational Analysis

a) Barriers to Access to Medicines, Vaccines and Technology

India's drug policies over the years have created an environment of duality. The country not only produces enough drugs to meet domestic consumption, but as one of the largest exporters of generic and branded drugs, is also known as the 'global pharmacy of the south'. India exports life-saving drugs countries and also supplies quality drugs to developing to the rich nations at affordable prices. Despite this seemingly commendable performance, millions of Indian households do not have access to drugs.² This results from both financial (lack of the necessary purchasing power) and physical (lack of public health facilities) barriers.

Evidence from large sample surveys of households over the last 25 years suggests that the impediments of medicines have become steeper. During the mid 1980s, approximately a third of the drugs prescribed during hospitalisation were supplied for free. This declined sharply to only about 9 % by 2004. Free drug supply for outpatient care has fallen from 18 % to about 5 % over the same period (see Table 1).

Table 1. Trends in Access to Medicines in India - 1986-87 To 2004

Period	Free Medicines	Partly Free	On Payment	Not Received	Total (in %)
(1)	(2)	(3)	(4)	(5)	(6)
In-patient					
1986-87	31.20	15.00	40.95	12.85	100
1995-96	12.29	13.15	67.75	6.80	100
2004	8.99	16.38	71.79	2.84	100
Out-patient					
1986-87	17.98	4.36	65.55	12.11	100
1995-96	7.21	2.71	79.32	10.76	100
2004	5.34	3.38	65.27	26.01	100

Source: Health data extracted from National Sample Survey Rounds 60, 52, and 42.³⁻⁵

During the same period, the number of episodes in which an ailing population et (OOP), has risen dramatically from 41 % to close to 72 %. As far as out-patient care the proportion of drugs fully purchased decreased from as high as 80% in the

to 65 % in 2004. Table 1 shows that since have started becoming unaffordable since, by 2004, in over one-fourth of out-patients episodes, patients did not receive medicines because they could not afford them.

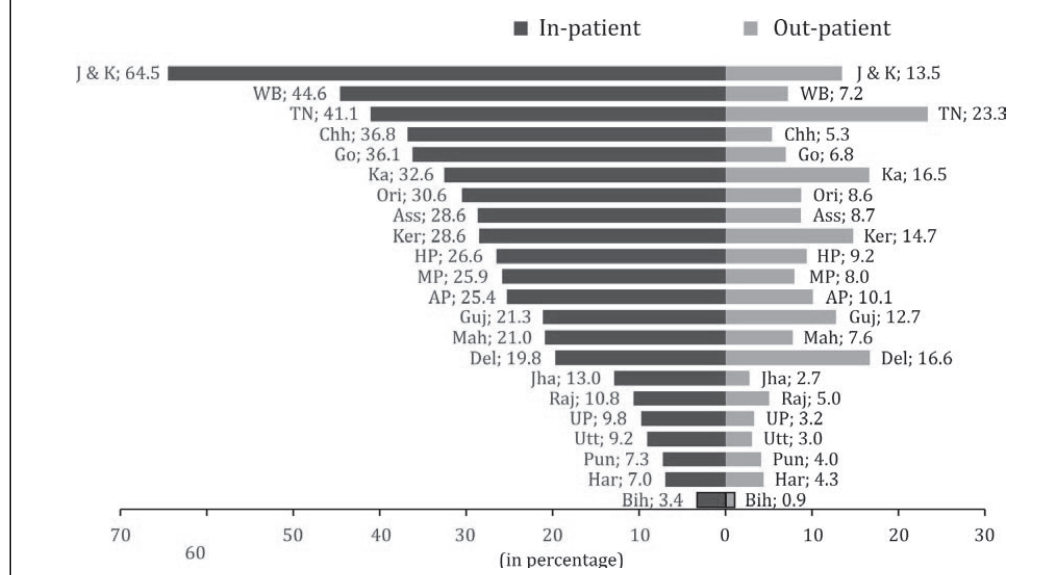
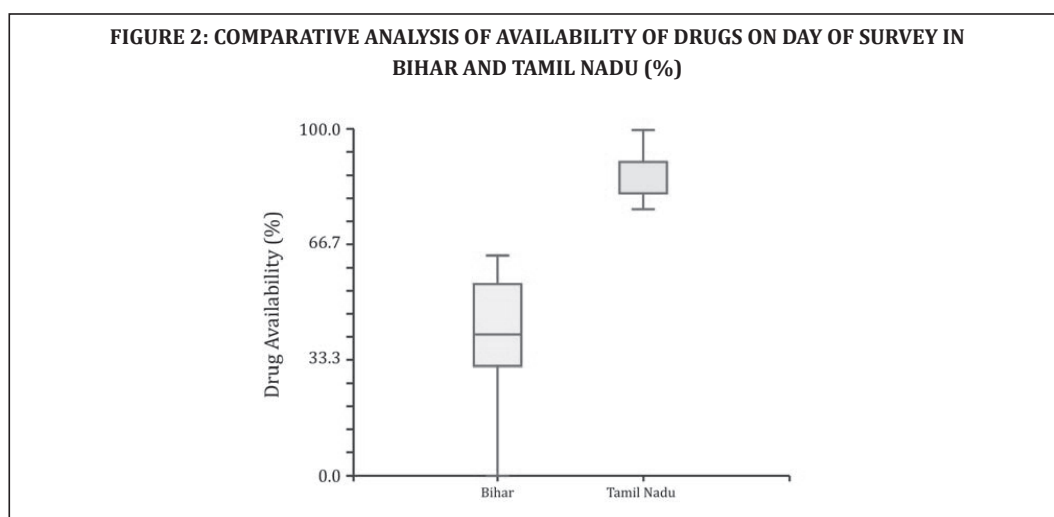
FIGURE 1: STATE-WISE BREAK-UP OF FREE/PARTLY FREE MEDICINES FROM PUBLIC HEALTH FACILITIES DURING 2004

Figure 1 shows how heavily the Indian population is dependent on private chemists. The availability of free or partially free drugs in out-patient care is extremely low. This highlights the limited protection offered by the government and the preponderance of private players in drug prescription and dispensing. State-wise evidence from Figure 1 shows that people in some of the southern states appear to have relatively better access to medicines than in the other states. The success of the Tamil Nadu Medical Services Corporation (TNMSC) model is clearly reflected in the proportion of people able to obtain medicines free/partly free from public health facilities. The Tamil Nadu figure is close to 25% in the case of Tamil Nadu, followed by Karnataka, Kerala and Delhi. The lower percentage share in other states indicates higher reliance on private chemists.

Published literature on drug availability and drug stock-outs in India is limited.⁶⁻⁸ Cameron et al. [2008] show that the median availability of critical drugs in the public health system was about 30% in Chennai, 10% in Haryana, 12.5%

in Karnataka, 3.3% in Maharashtra (12 districts) and 0% in West Bengal.⁸ In Rajasthan, Lalvani et al. [2003] point out that the Essential Drug List (EDL) was inadequately implemented, resulting in the availability of essential drugs only to the extent of about 45%.⁶ However, when EDL was expanded to include health facility lists, drug availability improved to about 76%. Further, their study also revealed that public facilities recorded out-of-stock drugs much more often (about 17% of the days) than the non-governmental health facilities (roughly 3% of the days).

A recent study of Tamil Nadu and Bihar by Selvaraj et al. (2010) shows that the mean availability of the basket of EDL drugs for Bihar on the day of the survey was about 43% as against roughly 88% for Tamil Nadu.⁹ As far as drug stock-outs were concerned, Bihar's health facilities registered an average of 42% stock-outs, with a mean duration of 105 days, in the previous 6 months of the survey period. On the other hand, the proportion of drug stock-outs for Tamil Nadu stands at around 17%, with an average duration of about 50 days (Figure 2).



Box 1: Acute Shortages & Chronic Stock-outs: A Study in Contrast (2010)

- * The average availability of a basket of essential drugs in Bihar was 43% as against 88% in Tamil Nadu;
- * Bihar's health facilities registered an average of 42% stock-outs of drugs with a mean duration of 105 days;
- * The proportion of stock-outs for Tamil Nadu stands around 17%, with an average duration of 50 days

Within each state, moreover, there are wide variations between districts, especially in the health facilities of Bihar. In terms of availability of drugs, the variation ranged from 0% for the district of Darbhanga to 63.64% for Vaishali. Similarly the period of drug stock-outs ranged from 100% for Darbhanga and Muzzafarpur to 22.73% for Nalanda. In Tamil Nadu, medicine availability ranged from as high as 100% at Nammakal to the lowest recorded at 77% at Nagapattinam and Tuticorin, which is far above the average of Bihar.

India has traditionally been self-sufficient in vaccine production and is also an exporter of certain vaccines. Despite this, immunisation coverage in the country has been extremely limited. Evidence from the last two decades, drawn largely from National Family Health Surveys (NFHS 1-3), shows only a marginal increase in or stagnant coverage rates of immunisation. The Expanded Program of Immunisation (EPI) covers BCG, Polio, DPT, and measles. Full immunisation coverage, in children aged 12-23 months, stood at 44% in 2005-06 as against 42% in 1998-99. While eight economically advanced states reported a decline in immunisation coverage rates, a few backward states have reported marginally improved immunisation coverage rates during this period.¹⁰ However, the recent

shortages of vaccines in India created by the shutdown of vaccine producing Public Sector Units (PSUs) have raised doubts about maintaining self-sufficiency in vaccine production, especially for Universal Immunisation Program (UIP) vaccines.¹¹

b) Factors Affecting Access to Medicines

Since access to essential medicines is a critical component of an effective health system, it is imperative that good quality and safe medicines remain accessible, available and affordable to the beneficiaries. However, many countries and regions face several barriers in expanding access to medicines. These include: 1) unreliable medicine supply systems; 2) poor quality of medicines; 3) irrational prescription, dispensing and use; 4) unaffordable drug pricing; 5) unfair health financing mechanisms; 6) inadequate funding for research in neglected diseases and finally; 7) a stringent product patent regime.¹²

i. Inefficient and Iniquitous Financing Mechanisms

An efficient financing mechanism in the health sector is predicated on the three principles of prepayment, risk-pooling and cross-subsidisation. Out-of-pocket (OOP) payment is the most inefficient way of financing, as all 3 principles are absent; while a tax-based financing mechanism relies on these 3 principles. India's underfunded public health system has, over the years, pushed households to rely largely on OOP spending as a mechanism of paying for health care. Currently, in India the ratio of private to public spending is nearly 4:1, with over 71% of all OOP expenditure of households accounted for by drugs alone.¹³ Meanwhile, the current efforts of the Government (both Central and State governments) veer towards providing publicly-funded health insurance coverage to vulnerable populations for hospitalisation care.

It is argued that social health insurance could help provide financial risk protection to the population. The underlying focus of such health insurance schemes (the Central government sponsored Rashtriya Bhima Suraksha Yojana, Rajiv Aarogyasri in Andhra Pradesh, Vajpayee Aarogyasri in Karnataka and the Kalaigarnar scheme in Tamil Nadu) is hospitalisation coverage, which is intended to mitigate the problems of unpredictable low-frequency high-cost treatments. Available evidence, however, clearly points to the need for addressing OOP spending on out-patient care, especially on purchase of drugs by households. This arises from drip-by-drip household spending on drugs, which are a result of high-frequency low-cost treatment. None of the current health insurance schemes

cover out-patient expenses.¹⁴

Under-funding has not only resulted in acute shortages and chronic drug stock-outs in the public health system, but also significant financial vulnerability for both the poor and non-poor. As a result of this, poor populations are pulled even deeper into poverty (poverty-deepening), while a large number of above-poverty line households are subsequently pulled below the poverty line every year.¹⁵⁻¹⁷ In addition, a large section of society ends up making catastrophic payments for health care, leading to depletion of savings, sale of assets, and incurrence of debts from usurious moneylenders.

Table 2. Trends in Statewise Government Drug Expenditure in India

State Name	Statewise Government Drug Expenditure in India					
	2001-02			2010-11		
	Overall (Lakh)	Per Capita (Rs.)	Drug Exp. as % of HE	Overall (Lakh)	Per Capita (Rs.)	Drug Exp. as % of HE
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Assam	1530	5.7	4.7	8635	28.5	5
Bihar	2203	2.6	3.1	13350	13.8	7
Gujarat	2693	5.3	3.7	15431	26.4	7.6
Haryana	3096	14.7	9.8	6090	24.2	5.5
Kerala	12420	38.9	17	24861	72.3	12.5
Maharashtra	20305	20.8	11.3	20882	18.7	5.2
Madhya Pradesh	7921	13.0	11.8	12213	17.1	9.3
Punjab	916	3.7	1.4	1545	5.6	1
Rajasthan	9045	15.9	9.3	3854	5.7	1.5
Uttar Pradesh	7104	4.2	5.2	31481	15.9	5.3
Jharkhand	NA	NA	NA	2716	8.7	3.4
West Bengal	5798	7.2	4.3	21403	24.1	6.8
Andhra Pradesh	12704	16.6	9.6	23458	27.9	10
Karnataka	7783	14.7	7.9	14831	25.1	6.3
Tamil Nadu	18097	28.9	15.3	43657	65.0	12.2
Himachal Pradesh	NA	NA	NA	1122	16.6	1.9
Jammu & Kashmir	NA	NA	NA	4550	39.2	4.3
Central Government	72649	7	12.2	253368	21	15
All India	188903	18	9.6	503,447	43	13

Source: HLEG Secretariat, based on state-wise Budget Documents and Demands for Grants

Note: HE - Denotes Health Expenditure

Public spending on drugs is extremely low, with huge variation between states and across districts within a state. As evident in Table 2, data from 2010-2011 indicates that about 10-12% of the health spending in the states of Tamil Nadu and Kerala goes towards procuring drugs as against the 2-3% spent on drugs by states like Jharkhand, Punjab and Rajasthan. While there has been a significant improvement in drug procurement in the state of Bihar during this period as a result of increased allocation of NRHM funds, the financial allocation for drug purchase by the government and level of drug allocation and procurement were extremely low in earlier years. Despite a recent steep rise, states like Bihar are still spending a very little (Rs. 8 per capita) on drugs.

Skewed priorities in drug spending by governments are a stark reality in several states. At the one end of the spectrum are states like Rajasthan and Odisha, which are reported to have spent over 90% of resources on tertiary care medicines, followed by states such as Gujarat, West Bengal and Punjab who have allocated over 70% of their drug expenditure on tertiary care drugs.⁹ At the other end of the list are states like Chattisgarh, Tamil Nadu, Jharkhand and Karnataka, where over half of all drug spending has gone into primary and secondary care.

ii. High Drug Prices

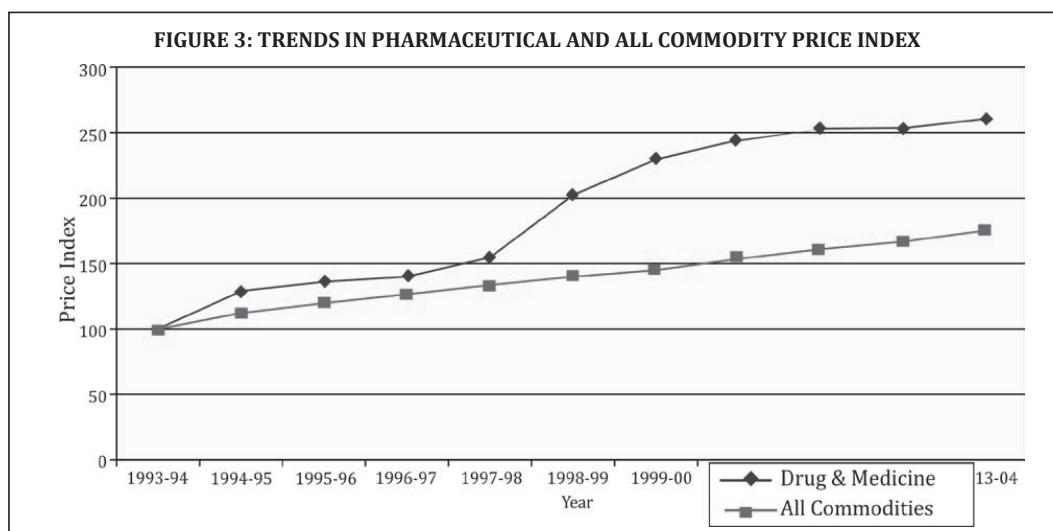
Drug prices play a significant role in the access to medicines, health service provision and financing particularly in low income countries dominated by the private sector and with weak to absent social health insurance systems. From a position of high drug prices in the pre-1970s era in India, rapidly growing domestic drug companies aided by effective drug policies are now capable of indigenously producing both bulk drugs and formulations, to a large extent. This has resulted in a situation in the country, where

relatively speaking, drug prices are presently among the lowest in the world. However, policy changes in the 1990s reduced the coverage of drug price control from about 90% of the market in late 1970s to about 10% of the market in 1995.

Taking advantage of lax regulations on drug pricing, the pharmaceutical industry has been able to reap high margins through complex price setting activities. It has been observed that the price of a therapeutically similar drug could vary around 1000% between the most expensive and the cheapest brands.¹⁸ Further, the variation between the market and procurement price of similar drugs could range anywhere between 100% to 5000%.¹⁹

Studies in the past few years have clearly demonstrated the effectiveness of price control. Sengupta et al. (2008) reported a nearly 40% increase in all drug prices between the period of 1996 and 2006.¹⁸ During the same period, the price of controlled drugs rose only by 0.02% while the price of EDL drugs (Essential Drug List) rose by 15%. In contrast, the price of drugs that were neither under price control nor under the EDL grew by 137%. The price decontrol policies of the 1990s have contributed to an enormous price increase during the last 15 years.

Drug prices have shot up phenomenally, as shown in Figure 3 and have widened *vis-à-vis* general price trends during 1993-94 to 2003-04. The current practice of drug price control is based on cost-plus pricing. This can be an effective mechanism if the government is able to obtain cost data accurately. However, it is nearly impossible to get accurate cost data from companies, as it is not mandatory for them to provide such data. In the absence of precise cost data, pharmaceutical companies tend to project a higher base cost in the initial period, in addition to higher margins charged by manufacturers, wholesalers, stockists and retailers.



Source: HLEG Secretariat, Aggregated data from Respective Monthly Bulletin of Reserve Bank of India, Mumbai

When the list of medicines under price control is limited and close substitutes are not price controlled, companies find ingenious ways to circumvent price control. GlaxoSmithKline (GSK), for instance, markets Actified; a drug used for cold and cough in India. While GlaxoSmithKline uses the active pharmaceutical ingredient pseudoephedrine in its global product Active, in India it uses Phenylpropanolamine (PPA). PPA enhances the risk of cerebro-vascular accidents and has been banned in several countries, while pseudoephedrine is under price control in India.¹⁸

iii. Unreliable and Inefficient Procurement and Distribution Systems

While adequate allocation of funds is important, the concomitant presence of a reliable and efficient public procurement and distribution system is equally vital for avoiding shortages and drug stock-outs. In India, several different procurement mechanisms can be clearly identified:

i) pooled procurement at the state level as in Tamil Nadu and Kerala, ii) decentralised procurement as in Chattisgarh; and iii) a combination of the two, as in Bihar. The procurement model of the Tamil Nadu Medical Services Corporation (TNMSC) has stood the test of time over the last 15 years, and has been hailed as the most efficient, reliable, transparent and replicable model (see Box 2). Neighbouring Kerala has adopted that model recently, while other states such as Bihar, M.P. and Odisha are in the process of replicating it.

An efficient procurement system is characterised by pooled (centralised) purchasing of drugs at each state level and one at the central level. Currently the central government has four procurement agencies procuring drugs, vaccine and diagnostics. Several state governments procure drugs at district level with a rate contract. Given the fragmented nature of such purchases, price quotes are non-competitive, resulting in less

value for money. Monopsony purchase can result in competitive buying practices as demonstrated in the Tamil Nadu and Kerala models.

It is often noted that states which do not follow the EDL in their procurement process create a scenario where physicians prescribe and dispense irrational drugs in the public health system, thereby compromising cost-effectiveness. During 2008-09, out of 239 drugs procured by the state of Bihar, only 82 drugs (34.89%) were found

to be on the state EDL list (both in-patient and out-patient).⁹ These accounted for approximately 71% of the state drug budget. Expenditure on procuring rate contract drugs, which are on EDL, was approximately 43% of the state's drug budget; while on the other hand, the rest of the funds (57%) are spent on non-rate contract drugs. Substantial amounts of funds are not efficiently utilised, due to the system of decentralised procurement and distribution of drugs.⁹

Box 2. Key Characteristics of Reliable & Efficient Medicine Supply Systems

- * At least 15% allocation of public funding for health to drugs;
- * State must procure all EDL medicines;
- * Separate AYUSH, EDL and centralised procurement at state level;
- * Prescription & Dispensing in accordance with Standard Treatment Guidelines (STG);
- * A two-bid open transparent tendering process;
- * Quality generic drugs ensured;
- * Warehouses at every district level;
- * An autonomous procurement agency for drugs, vaccines & diagnostics;
- * An empanelled laboratory for drug quality testing;
- * Enactment of Transparency in Tender Act;
- * Prompt payments.

Forecasting and procurement planning is critical to the cycle of drug procurement. Currently, several states do not have a forecasting or a planning mechanism for drug procurement. Evidence suggests that in Bihar, over a period of three years from 2005-08, the list of the drugs acquired in Bihar which were not on the EDL list or on rate contract, varied considerably. The number of drugs that were procured in 2007-08 was 369, as compared to 91 and 89 in previous two years.⁹ All these factors invariably have an adverse effect on competition, price, quality, and the timely availability of drugs to frontline healthcare providers in the public health system.

The lack of overall governance and efficient administrative systems for the procurement and distribution of medicines is partly responsible for shortages and drug stock-outs. This can be

improved through initiatives enhancing transparency and accountability of the system. The Tamil Nadu Medical Services Corporation (TNMSC) follows the Tamil Nadu Transparency in Tenders Act (43), 1998 and the Tamil Nadu Transparency in Tenders Rules, 2000. The Act and its Rules have clear and illustrative provisions for methods of tendering, publicity requirements, technical specifications, commercial conditions, evaluation criteria, place and time for receipt of tenders, minimum time for submission of bids, opening of bids, extension of tender validity, determination of the lowest evaluated price, preparation of the evaluation report and award of tenders. Such a system of transparency is absent in most Indian states.

iv. Widespread use of Irrational Medicines

India has the dubious distinction of having its

pharmaceutical market flooded with about 90,000 formulation packs and brands.¹⁹ The market is awash with irrational, non-essential and hazardous drugs. Of the top 10 products which accounted for 10% of the medicines sold in the market, two belong to the category of irrational vitamin combinations and cough syrup while the other is a liver drug of unproven efficacy. Ten of the top 25 products sold in India in 1999 belonged to one of these categories: blood tonic, cough expectorant, non-drug formulations, analgesics, nutrients, liver drug, etc. which are either hazardous, non-essential or irrational.¹⁹ According to estimates available from DCGI (2007), about 46 banned Fixed Dose Combination (FDC) drugs continue to be marketed despite the ban.²⁰

About 1067 FDCs are freely marketed with the state drug controllers' approval, but without the concurrence of the DCGI. The drug licensing approval for marketing is the prerogative of the DCGI, while state drug controllers are required to only approve manufacturing and selling license of drugs in the state. Drug makers conveniently circumvent this process by approaching state drug controllers for obtaining marketing approval licenses. Almost all the major medicine producers

are engaged in producing irrational medicines. To further illustrate this point, during 2004, over 100 new combination drugs (FDCs) were introduced in the market, capturing a market share of Rs. 130 crore (Table 3).

A large number of these medicines are in segment pertaining to cardiac care. Table 4 profiles the changing pattern of drug consumption, which does not reflect the disease profile of our country. In addition, there has been a rapid increase in the range of lifestyle drug categories such as cardiovascular drugs, hormones, anti-diabetic drugs and nutraceuticals in the last few years. As an example, although 'alimentary & metabolism' drugs accounted for one-fourth of the market in the therapeutic drug category in 2006, the major segments within that category in 2006 were: i) anti-diabetic therapy, ii) vitamins and mineral supplements, iii) antacids and anti-flatulents, which accounted for 4.4%, 6.5% and 4.8%, respectively. Part of this increasing market share of such drugs also reflects the growing disease burden, especially diabetes. As far as systemic anti-infectives are concerned, this category accounts for one-fifth of the Indian pharmaceutical market.

Table 3. New Introductions Involving Combination Therapies, 2004

New Combinations	Category	Launch Date	No. of Brands	Value in Crores
(1)	(2)	(3)	(4)	(5)
Aspirin + Clopidogrel	Cardiac	2002	23	40.9
Glimepiride + Metformin	Diabetic	2002	24	29.1
Pantoprazole + Domperidone	Gastro-Intestinal	2002	13	17.7
Pioglitaz + Glimepiride	Diabetic	2002	18	7.2
Pipracillin + Tazobactam	Antibiotic	2002	5	5.4
Valdecocix + Tizanidine	Pain/Analgesic	2003	8	3.1
Peridopril + Lindapamide	Cardiac	2002	2	2.8
Amlodipine + Atenolol	Cardiac	2003	6	2.1
Mosapride + Pantoprazole	Gastro-Intestinal	2004	1	21
Losartan + Atenolol	Cardiac	2003	4	1.3
Grand Total			104	130.60

Source: Intercontinental Market Services (IMS), 2005

Antibiotics and anti-bacterial formulations account for nearly 18% of the pharmaceutical market, clearly demonstrating the huge supply-driven demand created by pharmaceutical companies. Recent controversies related to high levels of antibiotic drug resistance in India are a clear reflection of this induced demand. Almost one tenth of the current market caters to the demand

for cardiovascular therapies. Apart from a rising disease burden, this may also, in part, reflect a supply-induced demand: for instance, the industry spent over 25% of its annual sales turnover on sales promotion alone as against a paltry 7% on Research and Development expenditure during 2008-09.

Table 4. Indian Therapeutic Market

Therapeutic Category	Market Share of Value in Percentage		
	May-04	May-05	May-06
(1)	(2)	(3)	(4)
Alimentary & Metabolism	24.6	24.8	25.0
Systemic Anti-Infectives	20.3	20.1	20.5
Cardiovascular System	9.3	9.7	9.8
Respiratory System	10.0	9.5	9.3
Musculo-Skeletal System	7.7	7.6	7.2
Central Nervous System	6.8	6.7	7.0
Dermatologicals	5.4	5.4	5.4
Blood + B. Forming Organs	4.0	4.2	4.1
GU System & Sex Harmones	3.4	3.6	3.6
Others	3.1	2.9	2.7
Sensory Organs	1.8	1.7	1.8
Parasitology	1.4	1.4	1.4
Systemic Hormones	1.4	1.5	1.4
Hospital Solutions	0.4	0.5	0.5
Antineoplast + Immunomodul	0.3	0.4	0.4
Diagnostic Agents	0.1	0.1	0.1
Indian Pharmaceutical Market	100	100	100

Source: IMS, 2007

The large scale promotion and publicity of these non-essential drugs by tilt pharmaceutical industry has resulted in physicians and pharmacists in both private and public health facilities being incentivised to prescribe and dispense drugs that are irrational. Irrational practices in the prescriptions and dispensing of drugs continues to be ramp ant in the country, and is largely observed through the number of injections and antibiotics prescribed, prescriptions by brand names rather than generic names, polypharmacy, and related practices. Standard Treatment Guidelines (STGs) are rarely followed and adhered to.

v. Lack of Regulation of Drugs and Diagnostics

Poor enforcement and multiple interpretations of the Drugs and Cosmetics Act of 1940 have made regulation in the health sector an unviable proposition.²¹ An effective drug regulatory system has significant bearing on the prices, quality and availability of drugs.

The Central Drugs Standard Control Organisation (CDSCO) of India is vested with the task of approving new drugs and clinical trials, laying down standards, import control, overall coordination of state drug control authorities. State drug

control authorities, on the other hand, are responsible for regulating the manufacture, sale and distribution of drugs.

Poor drug regulation results in the production and sale of spurious and substandard drugs. The overall quality of drugs is affected as, over time, any medicine could turn out to be inefficacious or unsafe. The recent deaths of pregnant women in Jodhpur due to contaminated IV fluids have brought this issue to the forefront again. Drug quality has especially become an issue in recent years with allegations, of ineffective and substandard drug production, levelled against small-scale drug manufacturers.

Since 2005, drug manufacturers in India have been mandated to abide by and comply with Good Manufacturing Practice (GMP) regulations, concordant with global standards, to produce quality drugs. A 2009 government survey of drugs reveals that 0.3% of all sample drugs were found to be spurious, while 6-7% of drugs in the country were found to be sub-standard in quality.²²

Despite growing awareness and compliance with GMP regulations, the quality of Indian drugs has been questioned time and again. According to Gulhati (2011), there are different terms and definitions which create confusion regarding nomenclature, such as fake/substandard/spurious and counterfeit drugs.²³ For example, in the United States of America, counterfeit drugs include even genuine, foreign medicines/brands that are not approved by the United States Food and Drug Administration (FDA). According to the Drugs and Cosmetics Act (Section 17B), the term 'spurious' drugs is not only limited to fake medicines but also includes products that use unauthorised names or are produced by unrecognised manufacturers. As Gulhati (2011) illustrates: "a strip of 10 good quality genuine paracetamol tablets will be deemed to be 'spurious', by the FDA, if that product uses the name

'Crocin' without permission from the trade mark holder GSK."²³ Indian quality labels, therefore, must follow rational and well-enforced Indian criteria.

vi. Stringent Product Patent Regime

India's changeover from process to product patent regime since 2005, has been viewed as a barrier which limits access to new medicines. This is expected to provide monopoly rights to drug makers in certain therapeutic categories, such as, oncology, AIDS/HIV, and mental conditions. In view of these changes in patent climate, market structure is likely to gradually undergo changes with immediate impact on prices of new medicines. For instance, it was with the arrival of Indian generic pharmaceutical companies on the global scene in 2001, that the prices of ARVs began to decline sharply - from US \$ 10,439 in late 1990s to about US \$ 350 per annum per patient for first-line AIDS treatment in 2005.²⁴ Currently, the drug is quoted at less than US \$ 70 per patient. This scenario clearly demonstrates the importance of empowering Indian generic drug makers with process patent and the forces of competition that it unleashed. Patented medicines, without close substitutes, are unaffordable for large sections of society, in India as well as in several developing countries where drug purchase occurs without social health insurance coverage. For instance, the price of pegylated interferon alfa-2a, a drug used in the treatment of Hepatitis C, costs about Rs. 18,200 (US \$ 390) per 180mg Pre-Filled Syringe (PFS). The annual cost of such treatment could run into a mind-boggling amount, placing it clearly out of reach of many middle class patients.²⁴

Developing economies were able to exercise their right in getting safeguards and flexibilities under the Trade-Related Intellectual Property Rights (TRIPS) regime to protect national public health. Nations can utilise safeguards such as compulsory licensing, parallel imports, etc. to

protect their citizens from national health emergencies. In addition, it is also argued that countries can implement national price control policies as a means to arrest drug prices from spiralling high.

Notwithstanding these flexibilities and country experiences (of Brazil and Thailand) in using TRIPS safeguards, India is yet to make use of these TRIPS provisions to its advantage. Despite the fact that several households face tremendous public health challenges and financial vulnerabilities, not a single compulsory license has been issued to date. Alarming, the country now faces the challenge of TRIPS plus provisions which will 'evergreen' patents for a longer than 20 years duration. Under a data exclusivity clause that is negotiated under the India- European Union (EU) and India-Japan bilateral agreement, India has been called upon to provide data exclusivity to transnational drug conglomerates, which would then enjoy the benefit of extended monopoly rights. The country is also being advised to soften clause 3(d) clause of the amended Indian Patent Act of 2005 which limits the scope of patentability criteria, so as to permit frivolous patents or allow minor improvements of known pharmaceutical products.

vii. Insufficient Research & Development Focus

Under-funding of public health research institutions, alongside a general lack of focus on priority diseases by private sector, hinders current drug research efforts in the country. The other major area where India could have taken a lead, like China, is in adequately utilising its indigenous traditional medicine base. India had so far failed to take advantage of this huge traditional knowledge base. Weak institutional frameworks and poor regulation of clinical research and trials endanger the safety of research subjects. A plethora of new medical technologies and devices are introduced and utilised without any clear guidelines and policies. This arises from the lack

of capacity for technology assessment and evidence-based decision-making. Many of these drug and device technologies are introduced without due assessment of cost-effectiveness, safety and efficacy. For examples, new vaccines which vie for inclusion in the Expanded Programme of Immunization (EPI) must satisfy the criteria of national relevance, cost-effectiveness and safety, without which they would be wasteful, unaffordable or harmful."

3. Recommendations and Way Forward

The availability of most essential drugs in India is not a serious concern; it is rather that access to drugs in the public health system has been poor, despite the country being a global leader in supplying quality generic medicines at affordable prices. Overall Under-funding of the governmental health system, along with paltry allocation of government resources to procure drugs, has resulted in poor access to drugs in the public health system. In addition, poor governance and accountability have also compromised the system. By directly improving health outcomes and providing financial risk protection to the population, expanding access to medicines is the key driver in achieving universal access to health care. To meet this important goal, government policies and strategies must be grounded in the principles of universality, equity, efficiency and quality. This is clearly feasible and implementable, and the results can be demonstrated rapidly and scaled up within a short span of 1-2 years, with minimum resources and maximum benefits.

Recommendation 1: Increase Public Spending on Drug Procurement to 0.5% of the GDP and provide free essential medicines to all.

Currently the public health system in India spends about Rs. 6000 crores (0.1% of GDP) for procuring drugs. An additional four fold rise in medicine purchase by the public health system is

required at Rs. 24,000 crores (0.4% of GDP). This works out to about Rs. 30,000 crores (0.5% of GDP), roughly half a percent of GDP. This resource is adequate to supply essential medicines free to everyone, distributed through public and private channels. This is expected to result in substantial reduction in Out of Pocket (OOP) expenditure and thereby provide much-needed financial risk protection to households. This measure is

likely to result in a supply of quality generic drugs. Their rational use, through a pooled public procurement for supply through the public health system as well as through private chemists contracted into the UHC system, will achieve substantial gains in drug access. The inter-state and inter-district disparities in the availability of drugs must be minimised, through planned allocation of funds in an equitable manner.

Recommendation 2: Enforce price regulation and apply price control on all formulations in the Essential Drug List.

India's current drug price control mechanism is inadequate in its coverage and does not serve its purpose to a large extent. The current practice of using monopoly and market dominance measures needs to be replaced with the criteria of 'essentiality,' which is expected to have maximum spill-over effect on the entire therapeutic category. This is also likely to prevent the present trend of circumventing price controls through non-standard combinations and at the same time would discourage producers moving away from controlled to non-controlled drugs. Direct price control should be applied to formulations rather than on basic drugs. This is likely to minimise intra-industry distortion in transaction and reduce as well as prevent a substantial rise in drug prices.

Recommendation 3: Ensure drug and vaccine security by strengthening the public sector and protecting the capacity of Indian private sector companies to produce low cost drugs and vaccines needed for the country.^a

It is ironic that despite India supplying quality generic drugs around the world, the country has concerns about sufficient domestic drug supply and vaccine security. With the increasing acquisition of Indian companies by transnational drug corporations, there is a pressing need to rethink our country's drug strategy. Even when multinational drug firms are not acquiring Indian owned drug manufacturing companies, effective control on policies and pricing may be gained through 'strategic alliance' agreements. Various options are proposed below for the government's consideration:

- a) In order to reduce our vulnerability to restructuring and its serious implications, we suggest that the government strengthen Public Sector Units (PSUs), which have drug manufacturing capability. This is possible through infusion of capital into existing but 'sick' PSUs such as, Indian Drugs and Pharmaceuticals Ltd. (IDPL), Hindustan Antibiotics Limited (HAL), and state owned enterprises, in addition to providing them with autonomous status.
- b) The use of PSUs will offer an opportunity to produce drug volumes for use in primary and secondary care facilities as well as help in 'benchmarking' drug costs. The existence of PSUs would also provide an opportunity to utilise the provision of Compulsory Licensing under TRIPS.

a. This recommendation did not have unanimity within the H LEG. One member was of the view that reviving public sector capacity for pharmaceutical production, without examining the reasons for failure of previous public sector drug manufacturing units, would not be an appropriate use of resources.

- c) In addition, we also need to urgently revisit India's FDI regulations to amend the present rules of an automatic route of 100% share of foreign players in the Indian industry to less than 49%, so as to retain predominance of Indian pharmaceutical companies and preserve our self-sufficiency in drug production. Another option is to move the drug industry from an automatic route to the Foreign Investment Promotion Board (FIPB) route, which would ensure that all proposals of foreign mergers and acquisitions of Indian drug companies are scrutinised thoroughly. Alternatively, a provision for separation of 'financial' ownership from 'legal' ownership may be enforced, analogous to the Reserve Bank of India (RBI) rules, which limit the voting rights of the foreign investor.
- d) The domestic drug manufacturing industry should transition from the current scenario of import dependency to self-sufficiency with respect to ingredients. The Active Pharmaceutical Ingredients (APIs) industry has placed the drug-making (formulation) sector in jeopardy in recent years. India, which was to a large extent self-sufficient in API manufacturing until the 1990s, has found itself in an awkward position in recent times with several disruptions and cost-escalation of largely Chinese import. There is a need to incentivise domestic production of APIs in the private sector, while at the same time actively engage drug PSUs to manufacture quality and cost-effective APIs.
- e) There is also a need to engage medium and small-scale drug industries in the production of quality generic medicines for UHC by helping them to transit to Good Manufacturing Practice (GMP)- compliant status, by providing financial and non-financial assistance.
- f) Vaccine security is equally vital, given the large disruption the country experienced in vaccine supply recently. We suggest that existing public sector vaccine-manufacturing units be strengthened with additional infusion of capital and the provision of autonomous status, and new vaccine parks be set up immediately. Indian private sector units manufacturing vaccines must be safeguarded against external interference with their mandate to prioritise Indian needs, as in the case of drugs.

Recommendation 4: Strengthen institutional mechanisms for procurement and distribution of allopathic and AYUSH drugs.

Various mechanisms have been considered for ensuring delivery of drugs to the public:

- a) **A Centralised Procurement and Decentralised Distribution Model:** This system is based on the TNMSC model for centralised procurement to achieve economies of scale and the use of monopsony purchasing methods for procuring drugs, vaccines and medical devices at substantially marked down prices. It is recommended that state and central governments establish a centralised procurement mechanism for procuring drugs, vaccines and medical devices. They should follow an open, transparent two-bid tendering system. Such drugs should be procured based on the Essential Drug List (EDL), which are generic in nature and rational in content.
- b) In order to facilitate and streamline drugs and vaccine storage and distribution logistics, it is proposed that at least one warehouse be built in each district to ensure ease of availability of drugs and vaccines to all front-line providers, preventing stock-outs or wastage of drugs.

- c) The government may contract-in private chemists, at least one at every block level and four to five at district headquarters. Drug supply to such stores would be linked to centralised procurement at state level to ensure uniform drug quality and cost minimisation by removing intermediaries. This is expected to not only significantly reduce costs but also enforce much-needed rational prescription and dispensing methods.
- d) AYUSH medicines should be brought under the National Essential Drugs List (NEDL). Thereby, procurement will move towards purchase of only NEDL drugs which should include identified and approved chemical, biological and traditional Indian medicines or AYUSH medicines. This will also ensure that AYUSH drugs are available at PHCs, where presently many AYUSH doctors are handicapped by the lack of AYUSH drug supplies.
- e) For provision of diagnostic services, government diagnostic centres should be strengthened at the block and district levels. Private diagnostic facilities may also be contracted into the system.
- b) Efforts will need to be backed by education and behaviour change among doctors, towards the adoption of rational prescribing and dispensing procedures for drugs, possibly through the advocacy of National and State Health Promotion Crusts (see chapter on Management and institutional Reforms).
- c) Standard Treatment Guidelines should be implemented in the NHP system, and should include only rational formulations.
- d) Unethical or aggressive marketing practices by drug and devices manufacturers and sales persons as well as incentives offered to doctors to promote prescriptions should be banned and penalised.

Recommendation 6: Strengthen Central and State regulatory agencies to effectively perform quality and price control functions.

Recommendation 5: Promote rational use of drugs through prescriber, patient and public education.

- a) There is a clear need to phase out hazardous, nonessential and irrational medicines and irrational 'Fixed Dose Drug Combinations' from the market. Recent reports on 'super-bug' nosocomial infections indicative of anti-microbial drug resistance in India, clearly point to the need to end the irrational drug prescription and dispensing practices.
- b) Global practices in drug regulation involve a variety of functions and mechanisms that range from food control, drug quality and safety, pharmaceutical price regulation and medical devices and equipment standardisation. The problem in India is that while only some of these functions are undertaken by the Central Drugs and Standard Control Organisation (CDSCO), there are multiple additional authorities and departments that fail to coordinate among themselves for efficient and effective functioning. For

instance, the Department of Pharmaceuticals under the Ministry of Chemicals and Fertilisers is responsible for drug price control while the Essential Drug List is prepared by the Ministry of Health and Family Welfare. Therefore, there is a need to integrate the role of drug price control into the CDSCO. In addition, the CDSCO should responsibility for collecting, tabulating and disseminating data on drug production, category-wise sales, company level information on drugs and undertake the responsibility of carrying out prescription audits. Currently, various Ministries rely on private data on drug consumption (which is both expensively priced and whose methodology is not very robust) to formulate drug price policies. To make the policy-exercise more credible, the Health Ministry must be empowered to take necessary action in this direction.

- c) Adding new drugs and vaccines to the government drug procurement system must be based on scientific evidence, with due regard to safety, efficacy and cost. We propose an institute akin to the National Institute for Health and Clinical Excellence (NICE) in the United Kingdom to critically evaluate the evidence needed to guide decisions on inclusion of new drugs and vaccines into the public health system.

Recommendation 7: Protect the safeguards provided by the Indian patents law and the TRIPS Agreement against the country's ability to produce essential drugs.

- a) India's current amended patent law includes several key safeguards such as restriction on the patenting of insignificant or minor improvements of known medicines (under section 3[d]); this provision needs to be protected from any dilution.

- b) Secondly, Compulsory Licenses (CL) should be issued to companies, as necessary, to make available at affordable prices all essential drugs relevant to India's disease profile. This provision, under India's own Patents Act and Trade-related aspects of Intellectual Property Rights (TRIPS) as clarified by the Doha Declaration, allows countries to use such licenses in public interest and can be invoked in the interest of public health security.
- c) Finally, the 'data exclusivity clause' must be removed from any Free Trade Agreement that India enters into, since such a clause extends patent life through 'evergreening' and adversely affects drug access and affordability.

Recommendation 8: Transfer the Department of Pharmaceuticals to the Ministry of Health.

The manufacture of drugs is under the purview of the Department of Pharmaceuticals, which is presently a part of the Ministry of Chemicals and Fertilisers. This department is also responsible for drug price control. Since the Ministry of Health is not only responsible for ensuring the quality, safety and efficacy of drugs but is also accountable for the unhindered availability of all essential drugs in the UHC system, public interest would be best served by transferring the Department of Pharmaceuticals to the Ministry of Health. This would help to better align drug production and pricing policies to prioritised national health needs.

4. Financial Implications and Timeline

India's presently underfunded health system not only requires a significant scale up of public spending on healthcare including drugs, but also needs to efficiently utilise available resources (as well as additional investments) in a manner that

achieves better health outcomes and reduces OOP spending on health, especially on drugs. While increased investments are critical, reorganisation of government spending strategies would achieve significant savings to both the administration and

to the society at large. Table 5 provides a clear pathway to achieve universal access to medicines under different scenarios and the associated cost savings achievable by rationalizing prescription and dispensing patterns.

Table 5. Scaling Up To Achieve Universal Access to Medicines

Overall Drug Consumption	Present Market Pattern (Non- EDL+EDL) Current Scenario (Rs. Crores)	Retail Market Price Converted to Procurement Price (EDL) Scenario I (Rs. Crores)	EDL Substituted for Non-EDL in Open Market Scenario 2 (Rs. Crores)
(1)	(2)	(3)	(4)
Essential Drugs	20,000	4,000 - 5,000	4,000 - 5,000
Non-Essential Medicines	36,000	36,000	8,000 - 15,000
Govt Procured Drugs	6,000	6,000	6,000
Total Market	62,000	46,000 - 47,000	18,000 - 26,000

Source: Figures obtained from IMS and government budgetary documents for private market and government procurement data respectively. The estimates are based on various assumptions and scenarios. Selvaraj and Hasan (2011)"

Note: The figures above are indicative and should not be considered final. This is because the assumptions and scenarios are based on situation when non-EDL drugs in the open market are substituted by EDL drugs, assuming that physicians prescribe by the EDL and abide by Standard Treatment Guidelines. In such a scenario, the upper bound would be on the higher side while the lower bound appears feasible. Price inflation is not considered here due to the fact that government procurement data based on TNMSC show that price change has been extremely insignificant in the past, in that system.

a) The Current Scenario

The current pattern of drug consumption in the country reveals several disturbing trends which carry significant implications for the government, private sector providers and individual consumers. Estimates from IMS data reveal that nearly Rs. 56,000 crores worth of medicines consumed in the domestic open market, were sold through roughly 600,000 private chemists in March 2011. On the other hand, governments at central and state levels continued to procure drugs at the rate of Rs. 6,000 crores during the same period, a number which is about one-tenth the price rate supplied by retail chemists. The ratio of essential (EDL) and non-essential (Non-EDL) drugs in the retail market is 2:3. Non-essential medicines consist of irrational combinations, superfluous and useless drugs, in addition to drugs that are prescribed and dispensed without any adherence to Standard Treatment Guidelines. Table 6 presents and details current and future implications for drug security and consumption in the country.

i. Scenario One

In scenario one, we demonstrate how cost savings could be achieved, if essential drugs that are sold in the retail market could be bought by the government at procurement prices (for instance, TNMSC prices). This yields a total savings of Rs. 15,000 to Rs. 16,000 crores to the nation. The significant difference between retail market and procurement price is due to exorbitant margins charged by drug manufacturers, in addition to a number of intermediaries including stockists, wholesalers and retailers. However, this is based on the assumption that all essential drugs would be bought by the government for its facilities. Presently, however, private players dominate the market, especially in medicine purchase for out-patient facilities. Therefore, in order to achieve these outcomes, there is a tremendous need to shore up the public procurement and distribution system, in addition to higher allocation of public funds for drugs.

ii. Scenario Two In scenario two, while the cost savings through bulk procurement prices are factored into estimations, an attempt is also made to substitute essential medicines for non-essential drugs through Standard Treatment Guidelines (STG). The cost savings here are likely to be enormous, to the tune of Rs. 36,000 to Rs. 44,000 crores, simply by phasing out irrational drugs to a large extent from the market. On the whole, by moving to an efficient procurement policy complemented by rationalizing the drug market, system inefficiencies can be brought down from Rs. 62,000 crores to an amount ranging from Rs. 18,000 to Rs. 26,000 crores. This yields a substantial saving of Rs. 36,000 to Rs. 44,000 crores to the nation, which amounts to about 05 to 0.6 % of the GDR

5. Expected Outcomes

We believe that our recommendations could tremendously improve and enhance physical and financial access to medicines in the country in a short span of time. Overall governance and accountability of both public and private players involved in drug procurement, distribution, financial allocation, and drug quality requirements should improve. This is likely to be reflected in regular availability of all essential medicines and elimination of drug stock-outs. Other key outcomes as a result of these recommendations will include:

- a) Scaling up public spending on health and allocating at least 15% of that funding for drugs is expected to dramatically reduce OOP spending for households. The adverse ratio of Government to Households on drug spending -which is presently at 1:10- is likely to be reversed or at least substantially reduced.
- b) Significant reduction in impoverishment and catastrophic spending due to OOP expenditure on drugs.
- c) A centralised drug procurement and decentralised distribution mechanism would produce much needed economies of scale through monopsony purchasing, significantly reducing drug prices and creating better value for money. This system can be further strengthened by allowing the purchase of only generic drugs from the essential drug list. Since physicians in the public health facilities would be required to prescribe only EDL drugs and follow STGs, rational prescription and dispensing would increase.
- d) Bringing all essential medicines under price control would have a beneficial effect on open market drug prices, resulting in large savings to households.
- e) Strengthening drug control institutions and staffing drug control authorities with a skilled workforce will reduce the production and sale of spurious and sub-standard drugs and increase the confidence of the Indian public in drug quality.

Table 6. Critical Pathways to Achieve Universal Access to Medicines

Drug insecurity (Current Scenario)	Partial Drug Security (Scenario 1)	Complete Drug Security (Scenario 2)
(1)	(2)	(3)
Current Landscape & Its Implications:	Significant Scale-up & Its Implications:	An ideal but achievable scenario & its implications:
1. Gross Under-investment & significant inter-state & inter- district disparities of public expenditure on drugs with enormous burden on households-ratio of government: household current spending on drugs is 1:10;	1. Scaling up public spending on drugs with considerable reduction in household spending- government: household ratio to 1:1;	1. Reversal of current ratio of government :household expenditure to 2:1, with financial burden moving to government;
2. Partial EDL, Generic & Rational use of drugs in public health facilities;	2. Government health facilities to substantially procure EDL drugs with focus on generic and rational drug use;	2. Centralised public procurement & public distribution system of medicines;
3. Largely fragmented public procurement & distribution system;	3. Strengthened Public procurement & distribution system;	3. Centralised public procurement and private drug distribution (prescriptions based on contracted-in General Practitioner from private sector);
4. High drug price due to liberalisation of drug price control;	4. All essential drugs under price control;	4. Price control for essential drugs while non-essential drugs are price monitored;
5. Rampant use of irrational medicines and non-essential drugs in the private health care system;	5. Considerable reduction in irrational medicine use & substantial weeding of irrational medicines.	5. Minimise use of irrational medicines in both public & private medical facilities;
Key Outcomes:	Expected Outcomes:	Potential Outcomes:
a. High Impoverishment & catastrophic payments of households;	a. Large decline in impoverishment & catastrophic payments to households;	a. Insignificant share of OOP on drugs leading to very low impoverishment & catastrophic spending of households;
b. Acute shortages & chronic stockouts of drugs in public health facilities;	b. Public facilities provide uninterrupted drug supply;	b. Drug shortages & stock-outs eliminated;
c. Wastage of resources to the tune of 0.4 to 0.6% of GDP;	c. Significant savings to the exchequer and large reduction in wastage of resources to households to the tune of 0.2 to 0.4% of GDP;	c. Savings to the tune of 0.5 - 0.6% of GDP to the exchequer;
d. Poor prescription & dispensing practices leading to inefficiency and safety concerns;	d. Prescription & Dispensing practices in public health facilities improve;	d. Prescription & dispensing of drugs through EDL and STGs, both in public & private facilities;
e. Lack of governance and poor accountability mechanism.	e. Governance & accountability enhanced.	e. Good governance & high accountability ensured.
Timeline: Current Scenario	Timeline: 1-2 years	Timeline: 5-7 years

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CHAPTER 3. HUMAN RESOURCES FOR HEALTH

Introduction:

Effective, Accountable and Efficient Human Resources for Health for Enabling Universal Health Coverage

India's mandate for Universal Health Coverage (UHC) depends, to a great extent, on adequate and effective Human Resources for Health (HRH) providing care at primary, secondary and tertiary levels in both the public and private sectors. States are presently struggling with the complexities of escalating human resource costs, additional demands on the available health work force, compounded by chronic HRH shortages, uneven distribution and skill-mix imbalances. India's health system is among the country's highest employers and absorbs almost two-thirds of the health budget for allocations in deployment, education, training, etc. Reform of HRH will therefore be the keystone of Universal Health Coverage reform in the country.

During the past eleven Five-Year plans, India has substantially upgraded and increased her health facilities. The country presently has 1,47,069 Sub-Health Centres (SHCs), 23,673 Primary Health Centres (PHCs), 4,535 Community Health Centres (CHCs)¹ and 12,760 hospitals² in the Government sector. The evidence on the actual functionality of these facilities, however, is mixed. As per the District Level Household and Facility Survey -III (DLHS 2007-2008), 62% of PHCs are conducting less than 10 deliveries in a month, 10% of CHCs do not provide 24x7 normal delivery services, 34% of CHCs do not have operation theatre facilities, only 19% of CHCs offer caesarean section deliveries, only 9% of CHCs have blood storage facilities³ and of the 4,535 CHCs, 754 only are functional as per IPHS norms.¹

The private health sector has grown exponentially in the country. From initially providing 8% of healthcare facilities in 1949, the private sector now accounts for 93% of the hospitals and 85% of doctors in India.⁴

The situation of HRH in India is evolving, but remains inadequate, as evidenced by recent health sector outcomes. Over 20% of deliveries are outside health facilities in 485 districts. Over 15% of children in 358 districts receive only partial immunisation. The recent initiatives of the National Rural Health Mission (NRHM) contributed to the 17% decline in the Maternal Mortality Ratio (MMR) from 254 in 2004-2006 to 212 in 2007-2009. The decline was most significant (18%) in the eight Empowered Action Group (EAG) states and Assam. India's Infant Mortality Rate (IMR) has declined from 57 in 2006 to 50 in 2009 per 1000 livebirths.⁵ This still falls short of the National Population Policy (2000) and NRHM goals of <30 per 1000 live births (by 2010) and the Eleventh Five Year Plan goal of 28 per 1000 live births (by 2012).

Globally, India accounts for half of the current leprosy cases (1.3 lakhs) and 21% of Tuberculosis (TB) cases (19 lakhs).⁶ While mortality from communicable diseases has declined, there has been no decline in incidence. The new sputum positive case detection rates for Tuberculosis (TB) are less than 60% in 243 districts, the Annual Parasite Index (API) for malaria continues to be above 1.9 in 142 districts, and the prevalence rate for leprosy is more than 1% in 53 districts.⁷

Non-communicable diseases are on the rise particularly, coronary heart disease and diabetes.¹ Deficiencies in HRH, both in numbers and skills, are major contributors to the suboptimal performance of the health systems in these areas. They need to be addressed with urgency if UHC is to become a reality, not only in design but also in delivery.

1. Existing HRH norms and HRH availability in the country

a) A brief historical review of Human Resources for Health in India

The development and deployment of HRH in India over the last six decades has been steered by various Government-commissioned expert committees. Notable amongst these are the Health Survey and Development Committee headed by Sir Joseph Bhore (1946), the Health Survey and Planning Committee led by Mudaliar (1961), the Chadha Committee (1963), the Kartar Singh Committee (1974), the Shrivastav Committee (1975), the Medical Education and Review Committee led by Mehta (1983), the Bajaj Committee (1986), the Mukherjee Committee (1995), the National Commission on Macroeconomics and Health (2005), and the Planning Commission Task Force on Planning for HRH (2007).

The Bajaj Committee for health manpower planning and development presented the first ever assessment of HRH availability in India.⁸ It recognized that health systems and human resources development were isolated from each other across ministries. The Committee made projections for rural HRH requirements for the millennium along with recommendations for building human resource capacity in educational institutions. In order to ensure quality in health services, the Bajaj Committee recommended a competency-based curriculum, refresher and bridge courses, in-service trainings, career structures for all categories and uniform pay scales across the country. The Bajaj committee also recommended cadre-wide coordinated planning for HRH production and the establishment of a University of Health Sciences in each state during the Eighth plan, as advocated earlier by the Medical Education and Review Committee in 1983.

The High Level Expert Group (HLEG) on Universal Health Coverage acknowledges and endorses the comprehensive and critical recommendations made by these earlier expert bodies. While central and state leadership in health ministries may not have always adopted or implemented the recommendations of these expert committees, their suggested rationale and norms continue to be the basis for HRH planning and formulation of standards.

b) Evolution of HRH Norms in India

Physical infrastructure and HRH norms based on population were envisaged as early as 1946 by the Bhore Committee. Since then, various expert committees have set targets for HRH, many of which are yet to be achieved. These include the norm of one nurse per 500 population, one pharmacist per 2000 population (Bhore Committee 1946); one laboratory technician per 30,000 population and one health inspector per 20,000 population (Chadha Committee 1963); one male and female health worker each for 3,000 - 3,500 population at the grassroots, i.e., within a distance of less than 5 kilometres (Kartar Committee 1974).

The Bajaj Committee (1986) suggested that the assessment of HRH requirements be based on multiple parameters including population ratio, inter-professional ratio and manpower mix.⁶ More recently, in 2007 and again in 2010, the Government of India formulated the Indian Public Health Standards (IPHS) and streamlined the requirements of physical infrastructure based on population and HRH requirements for health facilities ranging from the grassroots level SHCs, primary care level PHCs, first referral level CHCs, as well as hospitals with bed strengths of 31-50, 51-100, 101-200, 201-300 and 301-500 beds, respectively. The IPHS (2010) norms are for HRH as well as for equipment, drugs and service delivery. The physical infrastructure targets are one SHC for a population of 5,000, one

PHC for a population of 30,000, and one CHC for a population of 1,20,000. This includes one SHC per 3,000 population, one PHC per 20,000 population and one CHC per 80,000 population for hilly / tribal and remote areas.⁹

c) Global HRH norms and HRH in India

The World Health Organisation (WHO) Joint learning Initiative (JLI) report on HRH (2004) estimated the health worker density of physicians, nurses, midwives, dentists and pharmacists.¹⁰ While no global norms currently exist for HRH density, the JLI has established a threshold of 25 health workers (doctors, nurses and midwives) per 10,000 population, with a WHO endorsed lower threshold of 23 workers per 10,000.¹¹ As per the most recent figures reported in the World Health Statistics Report (2011), the density of doctors in India is 6 for a population of 10,000 and that of nurses and midwives is 13 per 10,000, which represents 19 health workers for a population of 10,000.¹⁰ India finds itself ranked 52 of the 57 countries facing an HRH crisis.¹²

Based on cumulative data from comparative time periods (2001-2005), the NCMH reported in 2005 that India had a doctor: population ratio of 0.5 per 1,000 persons in comparison to 0.3 in Thailand, 0.4 in Sri Lanka, 1.6 in China, 5.4 in the United Kingdom, 5.5 in the United States of America and 5.9 in Cuba. The ratio of 2.19 nurses and midwives per doctor ranks India lower than Sri Lanka (3.94) and Thailand (5.07).¹³ This makes it necessary for India to simultaneously augment the number of doctors and improve the nurse/midwife ratio to doctor in the coming years.

These HRH shortfalls have resulted in skewing the distribution of all cadres of health workers, such that vulnerable populations in rural, tribal and hilly areas continue to be extremely underserved. For example, in 2006, only 26% of doctors resided in rural areas, serving 72% of India's population.¹³ Another study has found that the

urban density of doctors is nearly four times that in rural areas, and that of nurses is three times higher than rural areas.¹⁴

d) Meeting norms through HRH production

India has the largest number of medical colleges in the world, with an annual production of over 30,000 doctors and 18,000 specialists. However, India's average annual output is 100 graduates per medical college in comparison to 110 in North America, 125 in Central Europe, 149 in Western Europe, 220 in Eastern Europe. China, with 18E1 colleges, produces 1,75,000 doctors annually with an average of 930 graduates per college.¹⁵ China's increased number could be attributed to a higher rate of admissions per medical college.

During the recent past, admission capacities in India have increased considerably for dentists, AYUSH doctors (Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homeopathy), and pharmacists. The number of dentists registered from 2004 to 2009 have increased from 55,000 to over 1,04,000 in a short span of four years.²¹ In addition, approximately 30,000 AYUSH doctors, 54,000 nurses, 15,000 Auxiliary Nurse Midwife (ANM) and 36,000 pharmacists (diploma holders) are produced annually.² Existing AYUSH institutions will likely sustain a decadal increase of AYUSH doctors by over 25%.

Our review of registration data from professional councils indicates the availability of one doctor per population of 1,953, with a nurse / ANM availability of 1.5 per doctor. We are still far from the WHO norms of one doctor per 1,000 population and 3 nurses / ANMs per doctor. It is imperative that the admission capacities of these critical cadres are also increased by establishing additional educational institutions in the states with weak HR capacity and high HRH requirements. In addition to HRH availability, it is important to emphasise appropriate education and

training for skill up-gradation as recommended by the Commission on the Education of Health Professionals for the 21st Century.¹⁵

2. Existing systemic deficits in the HRH system

a) Lack of data

In India, there is no comprehensive information available on HRH for health facilities across public and private sectors. Data available with professional councils for doctors, dentists, nurses and pharmacists are cumulative and do not exclude attrition (from death, retirement, migration, etc.), as there is no periodic renewal of registration. Annual publications such as Rural Health Statistic Bulletins (RHS) and National Health Profile (NHP) from the Ministry of Health & Family Welfare include data of selective categories and exclude hospital and medical college-related information. The decadal Census (2001) of India has collected extensive data on the occupation of individuals but these are unvalidated (i.e. based only on self-report).¹⁵

The weak knowledge base on HRH in Government and private sectors has been a matter of grave concern, for it impedes any rationalised HRH planning and health system strengthening. The present HRH situation in India is also characterised by a lack of HR Development Policies¹⁶ and HRH Management Information Systems (HRMIS) at national, state, and district levels. Given these barriers, the task of estimating HRH needs of the growing Indian population is a complex one.

b) Skewed production of HRH

The distribution of medical colleges, nursing colleges, nursing and ANM schools, paramedical institutions is uneven across the states with wide disparities in quality of education.¹⁷ Six 'high HRH production' states, (i.e., Andhra Pradesh, Karnataka, Kerala, Maharashtra, Pondicherry

and Tamil Nadu) represent 31% of the Indian population, but have a disproportionately high share of MBBS seats (58%) and nursing colleges (63%) as compared to the eight 'low HRH production' states, (i.e., Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Odisha, Rajasthan, Uttaranchal and Uttar Pradesh), which comprise 46% of India's population, but have far fewer MBBS seats (21%) and nursing colleges (20%).⁴

The uneven distribution of professional colleges and schools has led to severe health system imbalances across the states, both in production capacity and in quality of education and training, eventually leading to poor health care outcomes in districts, a problem that has been highlighted at length by the National Commission on Macroeconomics and Health (NCMH).¹³ In high HRH production states, the share of HRH production by private medical colleges has increased from 33% in the year 1990 to 52% in the year 2006, and presently stands at 57%.^{17,18} A large number of private colleges are run for profit, with serious shortages in faculty, infrastructure and quality of education. The clustering of private colleges around cities further exacerbates the shortage of doctors in rural areas. In low HRH production states, shortages of allopathic doctors are being met through AYUSH doctors, who are at times practicing allopathy without appropriate training or adequate support and infrastructure.

c) Uneven HRH deployment and distribution

India's major limitation has been in the production and distribution of human resources across multiple levels of care. Non-creation of posts at health facilities is pervasive. Over 57% of required posts for specialists have not been created; the figures are 60% for doctor posts, 72% for nurse posts, 71% for laboratory technician posts, 68% for radiographer posts and 52% for male health worker posts.¹ As of March 2010, undue delays in recruitments have resulted in high

vacancies even in available posts at health centres; over 34% for male health workers are not in position, while 38% of radiographer posts, 16% of laboratory technician posts, 31% of specialist posts, 20% of pharmacist posts, 17% of ANM posts, and 10% of doctor posts are vacant.¹ Overall, HRH shortfalls range from 63% for specialists to 10% for allopathic doctors, and 9% for ANMs, respectively.¹

The past few decades have seen the disappearance of certain cadres: village health guides and traditional birth attendants, first instituted in 1986, have now decreased to a point of non-existence. The number of male health workers has also dwindled from 88,344 in the year 1987 to 52,744 in the year 2010.¹

d) Disconnected education and training

Health curricula in the country have not kept pace with the changing dynamics of public health, health policies and demographics. The Auxiliary Nurse Midwife (ANM) and General Nursing & Midwifery (GNM) curricula have only twice been revised in the past 40 years. Education for health professionals is more clinically and technologically driven towards a treatment-oriented curative paradigm rather than population-focused primary and preventive health care. Current medical and nursing graduates in the country, trained in urban environments, are ill-prepared and unmotivated to practice in rural settings. There is an increased drive towards super-specialisation in various medical disciplines, further pushing the onus and focus of care towards tertiary health models rather than essential primary care services. The Task Force on Medical Education, NRHM, and the Independent Commission on Development and Health in India have recommended the revision of curriculum to focus on primary health care and rural orientation.^{20,21}

3. Reprioritizing HR for the visionary shift towards primary health in the country

Beginning with the Bhole Committee report, India's policies have consistently reflected its commitment to the principles of primary health. In the five years since its inception in 2005, the NRHM gave a major boost to strengthening primary care human resources by introducing flexibility and financial provision for the contractual appointments of 10,000 allopathic doctors (including 2,500 specialists), 7,700 AYUSH doctors, 27,000 nurses, 47,000 ANMs and 15,000 paramedical staff.⁶ Recruitments were made at the district level and HRH incentives were introduced for postings in underserved areas. Under the norms proposed by the National Rural Health Mission (NRHM), the provision of ANMs at SHCs has doubled.²² A long felt need of having one Community Health Worker (CHW) at the village level was met with the deployment of over 8 lakh Accredited Social Health Activists (ASHAs), roughly one per 1,000 rural population.²³

These are watershed improvements and set a strong precedent for reform shaped under a primary health paradigm. Yet, the availability of frontline qualified practitioners is still lacking; the nearest government doctor or professional nurse is still relatively far from the home, deployed at the PHC (one for 30,000 population). As a consequence, communities depend on private, informal, and often unqualified practitioners (quacks) for treatment, often resulting in further complications. There is, thus, a clear need for building a mid-level cadre of health care professionals in the country to take primary health services closer to people. The Task Force on Medical Education, NRHM, and the Independent Commission on Development and Health in India have further recommended that at least one medical college be set up per district in each of India's underserved districts.^{20,21}

This requires greater focus on primary health facilities, i.e. SHCs, PHCs and CHCs, and district referral hospitals, with an additional consideration of underserved districts. In our recommendations, state provision of services at these levels is a non-negotiable, while at other levels (sub-district hospitals, medical college hospitals), HRH estimations for production and deployment factored in the involvement of the private (for profit and non-profit) sector.

Investments in primary health care, including increasing density and effectiveness of health workforce at the community level and primary care health facilities could: a) generate positive health that is likely to reduce the need for secondary and tertiary care facilities; b) reduce costs of healthcare; and, above all, c) enhance health equity. Accordingly, the HLEG actively examined multiple HRH options that have the potential to transform health care at the grass-roots.

4. Projecting HRH availability and production commensurate with needs

While developing a blueprint and investment plan for meeting human resource requirements by 2020, the HLEG had to first arrive at robust and reliable baseline figures. This required sourcing Census data along with triangulated and attrition-adjusted human resources data, across cadres, related to education and deployment, down to the district level. Framing health reform in India's larger planning process, the HLEG calculated its projections based on the recommendations through the years 2012-2017 (Twelfth Plan) and 2017-2022 (Thirteenth Plan).

Recommendations were developed based on population norms, (e.g., doctor per 1,000 persons), inter-cadre ratio targets (ratio of nurses and midwives to doctors), and HRH norms at the facility level in order to serve health care needs.

This required careful estimation of India's population density down to the district level, factoring in equity considerations (underserved or vulnerable states and districts were given greater priority), current and future cadre sizes for a variety of health professionals, state-level differentials in HRH architecture (educational institutions, available faculty), as well as the goal of improving both access to health services and access to health sector as a career trajectory for women.

According to the 2011 Census, the present population of India is 1,210 million.²⁴ In order to project India's population from now through 2022, the HLEG considered the 2011 Census figure as the baseline and factored in projections from the National Commission on Population for future years.²⁵ As per these, India's population will reach 1,284 million by 2017 and 1,353 million by 2022.

Determining and estimating HRH needs (current and future) was a challenging task, requiring consideration of various estimation methodologies, sources of data, and often divergent estimates (discussed in Recommendation 3). Cadre figures, wherever available, were sourced from Medical Council of India (MCI),²⁶ Indian Nursing Council (INC) and other professional councils,²⁷⁻²⁹ publications by the Ministry of Health and Family Welfare such as Health Information of India,^{30,31} Medical, Health and Manpower Statistics,³² Rural Health Statistics Bulletins,^{11,19,33,34} Annual Reports,^{35,36} National Health Profile,² and reports of expert committees.⁸ These cumulative figures were adjusted for career span (36 years for doctors, 38 years for nurses, 40 years for ANMs)^a in order to arrive at more realistic baseline figures for available human resources, and further adjusted for attrition from other causes (3%).

^a. The career span was calculated based on an average age at recruitment into Government services and the prescribed age of retirement from these services.

We recognise that in many cases, the availability of HRH is not synonymous with deployment of HRH and therefore the need for both the creation of posts, as well as optimal utilisation of existing HRH, especially AYUSH doctors, dentists, physiotherapists and pharmacists, was also factored into recommendations.

Financial estimates were calculated for strengthening and establishing infrastructure for health professional and worker education based on the reports of the Planning Commission, Task force on Human Resources for Health,¹⁷ Task Force on Development of Strategic Framework for Nursing,³⁸ and others. Estimates were additionally triangulated by consulting guidelines and reports issued by the Ministry of Health and Family Welfare.

The HLEG believes that UHC requires the availability and equitable distribution of a competent, motivated, and empowered health workforce across the country. This will create unprecedented employment opportunities. Based on our projections, the health sector could emerge as the single largest employer in the country, providing employment opportunities for almost 50 lakh people by 2022 (two-thirds of whom will be women). In order to enable states to move towards equitable Universal Health Coverage, we envisage enhanced production capacities and quality with a focus on primary health, integrated service delivery and training at the district level, and improved HRH management.

Major Recommendations

1. Increase production capacities to meet HRH shortages, with a focus on delivering primary health care through frontline HRH in underserved districts

Recommendation 1: Provide one additional Community Health Worker (CHW) at the village level and one urban CHW low-income urban populations, for primary health care.

In order to ensure adequate provision of health care in communities, it is recommended that one additional CHW be provided at the village level (1 per 500 population) and in underserved urban areas for low-income populations (1 per 1,000 population).

- * The new CHW may be a male or female, belonging to the same village/area.
- * The broad scope of work for the CHWs would include maternal and child health including Home-Based New Born Care (HBNC), family planning, adolescent and reproductive health. Existing CHWs should be trained in newborn care and child care by 2014. The control of communicable and non-communicable diseases may be assigned to the second CHW with specific job responsibilities that include basic health promotion and prevention activities around the control of malaria, filaria, TB, HIV, leprosy and other infectious diseases, safe water and sanitation. The CHW will also be involved in health education for non-communicable and chronic diseases such as hypertension, diabetes, heart diseases, strokes, cancers and mental health. The second CHW should undergo induction training for a period of about 3-4 weeks followed through add-on courses and on-the-job mentoring.³⁹
- * CHWs should be de facto members of the (village or urban-equivalent) Health and Sanitation Committee, which will be involved in monitoring of CHW and disburse a monthly fixed payment of Rs. 1500 to each CHW.
- * CHWs should be paid half of their package as a fixed compensation and the rest as performance-linked compensation.
- * Supervision of CHWs will be by Health Workers (male / female) of the respective SHCs and Nurse Practitioners in urban areas. The performance based monthly

compensation of Rs. 1500 should be through ANMs in rural areas and their corresponding equivalent in urban areas.

- * * CHWs should be offered performance-based admissions to ANM schools, nursing schools, Bachelor of Rural Health Care courses (see Recommendation 2) and certificate courses for skill up-gradation at District Health Knowledge Institutes (see Recommendation 9).

Rationale

The importance of primary care accessible from the home is an important factor in the HLEG's recommendations. The additional CHW proposed will expand the scope of health promotion on key primary health issues and emerging local health problems. The CHW will be able to represent community voices and will help create essential linkages to the health system. Finally, opportunities to transition into the health system should be open to CHWs.

Expected Outcome

The estimated availability of roughly 19 lakh CHWs by 2022 will pave the way for health care accessibility and thereby shift the focus of health care delivery from secondary and tertiary sectors to the primary sector over the next two decades.

Recommendation 2: Each Sub-Health Centre (SHC), covering 3,000 to 5,000 population, should have a mid-level professional Rural Health Care Practitioner; two ANMs and a Male Health Worker. In urban settings, trained and qualified Nurse Practitioners are recommended in lieu of Rural Health Care Practitioners.

- a) As an immediate measure, the HLEG recommends 3-6 month bridge courses for mid-level rural professional practice offered to ANMs, nurses, AYUSH doctors and dentists, as many of these professionals (with the exception of nurses) are available in surplus in several states, including Bihar, Madhya Pradesh, Rajasthan, Uttarakhand and Uttar Pradesh.
- b) The HLEG endorses a 'Bachelor of Rural Health Care' (BRHC) course with a 3-year curriculum which should have an intensive component covering primary and preventive health care. The BRHC course should be offered at District Health Knowledge Institutes and the BRHC degree linked to State Health Sciences Universities (see Recommendations 9 and 12).
- c) The BRHC should have the following components:
 - * The course should focus on an essential skills package to ensure a high quality of competence in preventive, promotive and rehabilitative services required for rural populations with pedagogy focussed on primary health care.
 - * BRHC students should be taught in local settings where they live and work. The BRHC course should not be a mini-MBBS course, but rather become a unique training programme aimed at the basic health care needs of its target population.
 - * BRHC faculty should be drawn both from existing teaching institutions and India's pool of retired teachers, also drawing non-physician specialists from the fields of public health and the social sciences.
 - * The BRHC course is a professional education programme and should be steered by national and state level Boards to ensure quality and effective implementation of the curriculum.

* It should be mandated through legislation that a graduate of the BRHC programme is licensed to serve only in specific notified areas in the government health system. A similar Act implemented by the state of Assam for such mid-level health workers could be a potential model.

* Service parameters and career pathways should be developed for BRHC graduates. The Government should take steps towards establishing suitable salary and service conditions for BRHC practitioners. The option for career progression to the public health service, after 10 years of service, may be offered.

Rationale

The rapid expansion of HRH on a massive scale will take multiple Five-Year Plans. Planning must include some provision of interim solutions to address HRH gaps that could supplement and/or replace long term HRH expansion. In addition, India requires a renewed emphasis on primary and secondary health care, with greater levels of expertise closer to the grassroots. International evidence suggests that adequately trained and supported mid-level practitioners may successfully provide health care, in particular to marginalised communities.^{41,42}

Recent research in Chhattisgarh suggests that mid-level practitioners such as Rural Medical Assistants have the requisite levels of competence to deliver primary health care, can prescribe rationally, and may serve as a competent alternative to physicians in primary health care settings.⁴³ This warrants serious consideration of such a cadre as an interim measure until production of doctors is increased, at which point, the continued production of such a cadre may be revisited.

Expected Outcome

It is expected that full coverage of BRHCs at the sub centre will be achieved by 2030. In order to support the production of this cadre, the HLEG recommends the phased production of 172 BRHC colleges in Phase A (by the year 2015), 163 BRHC colleges in Phase B (by the year 2017), and 213 BRHC colleges in Phase C (by the year 2022), such that by the end of this period, a BRHC college exists in all districts with populations of over 5 lakh. These colleges will be co-located with or closely aligned to District Health Knowledge Institutes (See Recommendation 9), which will also be produced with the same phasing. This would enable positioning of rural health practitioners at 1.14 lakh SHCs by the year 2022 and facilitate outreach to underserved rural populations. Similarly, Nurse Practitioners would be positioned to serve vulnerable urban populations and supervise urban CHWs.

Recommendation 3: Increase HRH density to achieve WHO norms of at least 23 health workers (doctors, nurses, and midwives) per 10,000 population as well as 3 nurses/ANMs per doctor (allopathic).

Rationale

In 2004, the Joint Learning Initiative advocated an availability of 25 health workers (including midwives, nurses, and doctors) per 10,000 population.¹⁰ A more recent figure from the World Health Organisation's Global Atlas of the Health Workforce established a minimum HRH norm of 23 workers per 10,000 population.¹² As per the WHO report, the density of doctors in India is presently 6 per 10,000 and that of nurses and midwives is 13 per 10,000, representing a combined density of just 19 health workers per 10,000 population.¹²

The WHO report figures are derived from cumulative numbers listed by the health professional councils. They do not exclude losses due to attrition (death, retirement, migration), and are not revised periodically. Other sources of data are similarly problematic. For example, annual publications such as Rural Health Statistics Bulletins and National Health Profiles of the Ministry of Health & Family Welfare include data of certain cadres and exclude hospital and medical college-related information. The decadal Census of India has collected a large amount of representative data on occupation of individuals, but these are based on self-report and difficult to validate. In the HLEG's survey of the data, varying estimates emerged, based on different data sources (see Table 1 for illustrative example of variations in doctor cadre size).

Based on yearly admission data in colleges and schools, and the annual registrations of doctors, nurses and ANMs indicated by their respective councils, we estimate an adjusted HRH density of 12.9 health workers per 10,000, comprising 5.1 doctors, 5.4 nurses and 2.4 ANMs per 10,000

people. This estimate, stated in Table 1, while the most recent, is at variance with other figures. Given the differences in sources of data and estimation methodologies (see Table 1), any one estimate is likely to be contested by a section of HRH researchers. The councils' registration and admissions data were considered most appropriate for current and future estimates for a number of reasons. Firstly, this would enable comparability across these three critical HRH cadres. Secondly, apart from direct adjustments related to retirement, the HLEG secretariat additionally adjusted council figures for cumulative attrition of 3 % (due to deaths, emigration from sector, etc.). As a result, the HLEG's adjusted figure for the number of doctors for the equivalent period is 28% lower than the MCI's cumulative number reported in the 2010 NHP (see Table 1 for illustrative comparison of HLEG estimates to other methodologies). Finally, registration and admissions data of various councils enables us to project of availability of these categories for any specific year, thereby enabling prospective projections and planning to meet the HRH provision.

Table 1. Sources, Estimation Methods, and Resulting Doctor Densities

Authors	Sources/Estimation Method	Year	Doctor Density
(1)	(2)	(3)	(4)
Anand & Fan (2010) ^{16*}	Numerator: Self-report of employment and educational attainment Denominator: Census 2001	2001	2.6 doctors per 10,000 1 doctor per 3,800 1 doctor per 1,320 urban 1 doctor per 15,800 rural
National Commission on Macroeconomics and Health ¹³	Numerator: Cumulative State Medical Council Data through September 2004 Denominator: not indicated	2004	5.97 doctors per 10,000 1 doctor per 1676 (urban rural breakdown not possible with data)
Rao and colleagues (2009) ¹⁴	Numerator: Census 2001 for employment directly adjusted against employment codes in NSSO (2004-2005) data (using proportions, as figures match in aggregate) Denominator: Census 2001	2005	3.8 doctors per 10,000 1 doctor per 2,631 1 doctor per 1,000 urban 1 doctor per 10,000 rural
HLEG Secretariat (2011)	Numerator: Yearly MCI registration records 1974-2010 (adjusted for retirement, and 3% attrition from other causes) Denominator: Census 2011	2011	5.1 doctors per 10,000 1 doctor per 1,953 (urban-rural breakdown not possible with data)

* Anand and Fan found that 57.3% of self-reported doctors in the 2001 Census lacked medical qualifications, bringing down the density of doctors in that year from 0.6 per 1,000 to 0.27 allopathic doctors per 1,000.¹⁶

Expected Outcome

The WHO recommended norms of one doctor per 1,000 population and 3 nurses and midwives per doctor are key targets for UHC. The norm of one doctor per 1,000 population should be approximated by the year 2028. Moreover, India should be able to expand her HRH density beyond the 23 health workers per 10,000 population and

surpass a cumulative ratio of 3 nurses/ midwives per doctor by the year 2020 (see Table 2). The HLEG's focus on improving HRH availability in districts with acute HRH shortages will also redress distributional inequities and simultaneously generate educational and employment opportunities for a large number of unemployed youth and women in these districts.

Table 2. Projected HRH Density based on Implementation of HLEG Recommendations

	2011	2017	2022	2025
(1)	(2)	(3)	(4)	(5)
Health worker density per 1000 population (doctor - allopathy, nurses and midwives)	1.29	1.93	2.53	3.33
Population served per Doctor (allopathy)	1,953	1,731	1,451	1,201
Ratio of nurses and midwives to a doctor	1.53	2.33	2.94	3.01
Ratio of nurses to a doctor	1.05	1.81	2.22	2.19

Source: HLEG Secretariat

India's physical infrastructure targets under the Indian Public Health Standards are one SHC for 5,000 population, one PHC for 30,000 population and one CHC for 1,20,000 population, including one SHC per 3,000 population, one PHC per 20,000 and one CHC per 80,000 for hilly / tribal / difficult areas.⁹ Current Government of India norms have prioritised tribal and rural populations by stipulating the provision of additional health centres for these hard to reach under-populated areas for easier accessibility to health care. This has not been achieved due to financial constraints and the non-availability of requisite HRH in underserved districts, resulting in poor healthcare outcomes. The service guarantees under UHC require that we address both present HRH gaps and future HRH needs for additional

health facilities.

As per the present population norms for the health centres, India's population for the year 2022 will require staffing for 3.14 lakh SHCs, over 50,000 PHCs, over 12,500 CHCs, as well as close to 5,000 sub-district hospitals, 642 district hospitals and over 500 medical colleges (under the 2 beds per 1,000 population norm (see Chapter on Health Service Norms). The staffing requirements for these facilities, as per the HLEG recommendations (see Annexure I), have been assessed at 45.7 lakhs (see Annexure II). HRH requirements for various cadre categories are summarised in Table 3.

Table 3. Proposed HRH Needs at Health Facilities by the Year 2022

	Category	SHCs (314547)	PHCs (50591)	CHCs (12648)	SDH (4561)	DH/Hq. (642)	MCH (502)	Total HRH
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ANMs	629094	151773	25296	22805	3210	-	832178
2	Health worker-male	314547	101182	25296	4561	642	-	446228
3	Pharmacists	-	151773	50592	36488	7062	7530	253445
4	Technicians	-	202364	113832	159635	34668	34136	544635
5	Nursing	-	252955	252960	665906	189390	255016	1616227
6	Rural Health Care Practitioners	314547	-	-	-	-	-	314547
7	Dentists	-	50591	13648	-	1284	1004	74649
8	Doctor (AYUSH)	-	50591	12648	9122	1284	-	64523
9	Doctor (Allopathy)	-	151773	75888	91220	15408	82830	417119
10	Specialists*	-	-	65770	104903	17334	21084	209091
11	Managerial Categories	-	101182	50592	31927	8988	4016	196705
	Grand Total	1258188	1214184	685522	1126567	279270	405616	4969347

Specialisations estimated are Anaesthesia, Medicine, Obstetrics, Ophthalmology, Paediatrics, and Surgery

Source: HLEG Secretariat

HRH requirements for the year 2022 are estimated at close to 64% for rural health facilities, i.e., SHCs, PHCs and CHCs. HRH requirements for various categories are almost 12.6 lakh (25%) at SHCs; over 12 lakhs (24%) at PHCs; roughly 6.9 lakhs (14%) at CHCs, which are designated as the first referral units for rural areas; close to 11.3 lakhs (23%) at the sub- district hospitals for secondary level care and the remaining 6.8 lakhs (14%) for tertiary care at district and medical college hospitals.

In order to ensure an adequate number of health workers for Universal Health Coverage, it is necessary to augment the health workforce at different levels. We recommend widening and deepening the base of the pyramid to strengthen the healthcare system for the delivery of primary and preventive health care. Meeting the requirements of UHC will call for an improvement in the country's present doctor-to-population ratio from 0.5 per 1,000 persons based on our estimates to a well-measured provision approaching one doctor per 1,000 persons by the end of the year 2027. Thus, we recommend increased financial allocations for strengthening physical infrastructure

for SHCs, PHCs and CHCs, ensuring HRH availability through the creation of new educational institutions for medical, nursing, midwifery (see Recommendations 4, 5, and 6), the introduction of new BRHC course in underserved districts (see Recommendations 2 and 9); and the creation of required posts for the health facilities.

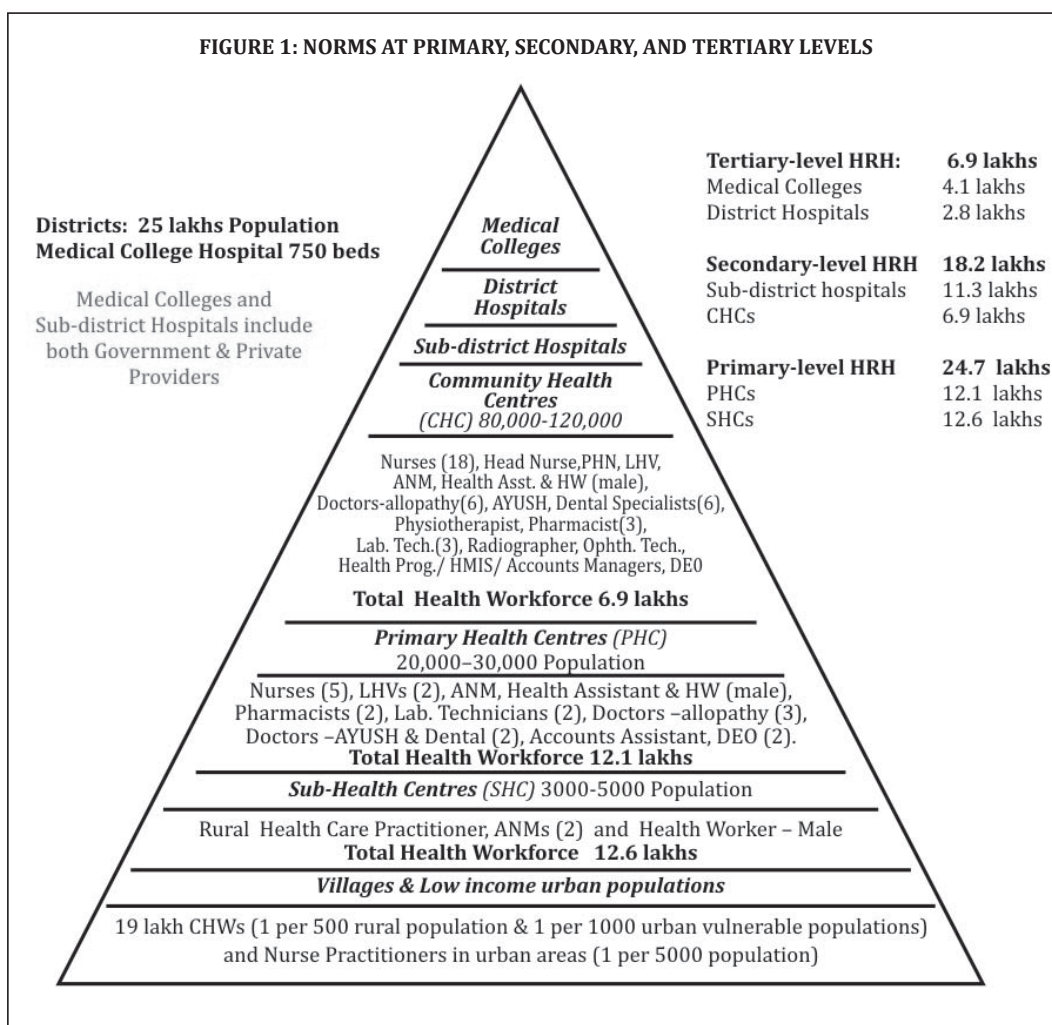
The Government of India norms provides for a minimum of nine health workers at a new PHC while the IPHS 2010 recommends nineteen. We envisage the PHC as the first contact point for allopathic, AYUSH, and dental care and strongly recommend the provision of almost 25 health care providers, comprising not just nurses and doctors, but also paraprofessionals like technicians and a health educator. We propose that the CHC be the access point for emergency services including caesarean section deliveries, newborn care, cataract surgeries, sterilisation services, disease control programmes and dental care. This will likely require, on average, over 50 health care providers, including nurses, ANMs, AYUSH and allopathic physicians (including specialists), as

well as allied health providers like radiographers, an operation theatre technician, and physiotherapist.

The High Level Expert Group (HLEG), acknowledging HRH provisioning at hospitals as per IPHS and MCI norms, recommends close to 250 staff at sub-district hospital, over 400 at district hospital and over 800 at medical college hospitals. This distribution will achieve a more equitable distribution of HRH, with almost half the workforce at the primary care level, approximately 36% at the secondary care level and 14%

at the tertiary care level.

The provision of care from the SHCs to the level of CHCs and district hospitals (Figure 1) will be exclusively by the public sector. At sub-district level hospitals and medical college hospitals, private providers will also provide services through careful contracting-in mechanisms. Figure 1 summarizes the healthcare delivery system and the proposed provision of Human Resources for Health (HRH) at different levels.



Recommendation 4: Provide adequately skilled ANMs at SHCs, PHCs and CHCs through the addition of Auxiliary Nurse Midwife (ANM) schools in 9 priority states phased from 2012 to 2017.

Ensure adequately skilled ANMs at all health centres with emphasis on high focus states

- a) Simultaneously progress towards making available at least one ANM school in all districts with over 5 lakh population.
- b) Ensure minimum of 40 ANM students per batch and biannual admissions in ANM schools as per local needs. This may be reduced subsequently after required norms are reached.
- c) Strengthen Lady Health Visitor (LHV) training centres to ensure adequately trained CHW and ANM supervisors.

Rationale

Primary health care coverage at the SHC level requires over 8 lakh ANMs by the year 2022. The Indian Nursing Council has registered 5.76 lakh ANMs (as on 31st December 2009). Of these, less than 2 lakh ANMs are currently employed in the Government sector, even though ANM posts are only available at Government health facilities.¹ Despite the NRHM introducing a second, fully paid ANM at the SHC level, states like Bihar and Uttar Pradesh are still lacking ANMs even at basic levels of care.^{1,22} Other states like Rajasthan, Jharkhand and Jammu & Kashmir are able to produce enough ANMs to staff one position at the SHC, but still require additional capacity to provide for a second ANM. The distribution of ANM cadres is widely uneven, with relatively higher shortages in underserved districts.¹

Expected outcome

Increased production through new ANM schools and enhanced admission capacities in existing schools would fulfil the requirements of ANMs and LHVs at health facilities in all states.

Recommendation 5: Increase the availability of skilled nurses to achieve a 2:1:1 ratio of nurses to Auxiliary Nurse Midwives, (i.e., minimum of 2 nurses and one ANM) to allopathic doctors, through the provisioning of new nursing schools and colleges.

Rationale

It is estimated that there are 6.51 lakh nurses and 2.96 lakh ANMs currently available in the country reflecting a combined nurse and ANM ratio of one per 1,277 population. This is in comparison to one per 2,250 estimate of the National Task Force for Nursing for the Eleventh Five Year Plan (2004).³⁸

The amount of Rs. 1500 crores allocated during the Eleventh Plan for new nursing schools and up-gradation of nursing schools to colleges contributed to an annual production capacity for 1.15 lakh additional nurses. This included nursing schools for the General Nursing and Midwifery diploma and nursing colleges for the Bachelor of Science (Nursing) degree. However, this production remains skewed across states. Some positive changes have been observed over the past five years, with the addition of 539 nursing schools in the twelve states of Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Madhya Pradesh, Odisha, Punjab, Rajasthan, Uttaranchal, Uttar Pradesh and West Bengal. Despite these efforts, we have fallen short of requirements, to the extent that in many states, the National Rural Health Mission has had to appoint far fewer nurses than required, due to their non-availability. In 2010, only 57,450 of the required 2.76 lakh required nurses were employed at PHCs and CHCs.¹

The need for specialized nurses has been felt in multiple clinical areas including operation theatres, chronic care, midwifery, ophthalmology ICUs, cardiothoracic, and neurosurgery. The High Powered Committee on Nursing (1989)³⁹ observed that very few senior positions exist in nursing and advocated for greater autonomy and professional development for nurses along with recommending nursing positions in directorates.

Expected Outcome

Implementation of these recommendations will make available an additional 7.8 lakh nurses and ANMs by the year 2017. This production would, during the Thirteenth plan, be enhanced further from newly added nursing schools and colleges so that 10.1 lakh additional nurses and ANMs would be added during 2017 to 2022. With this rate of growth, it is expected that the HLEG target of 3 nurses and ANMs per doctor (following a 2 nurses: 1 ANM: 1 doctor distribution) will be achieved by the year 2025.

These norms may be achieved in four phases (A: 2012-2015; B: 2015-2017; C: 2017-2022 and D: 2020-2022) starting with underserved districts identified in 15 states (see Table 4). This scope of production is feasible as demonstrated by the financial support of the Government of India in the current five-year plan, which has produced a remarkable increase in nursing schools and colleges over the past four years. It also takes into account faculty shortages that may exist in particular for nursing colleges in a number of states.

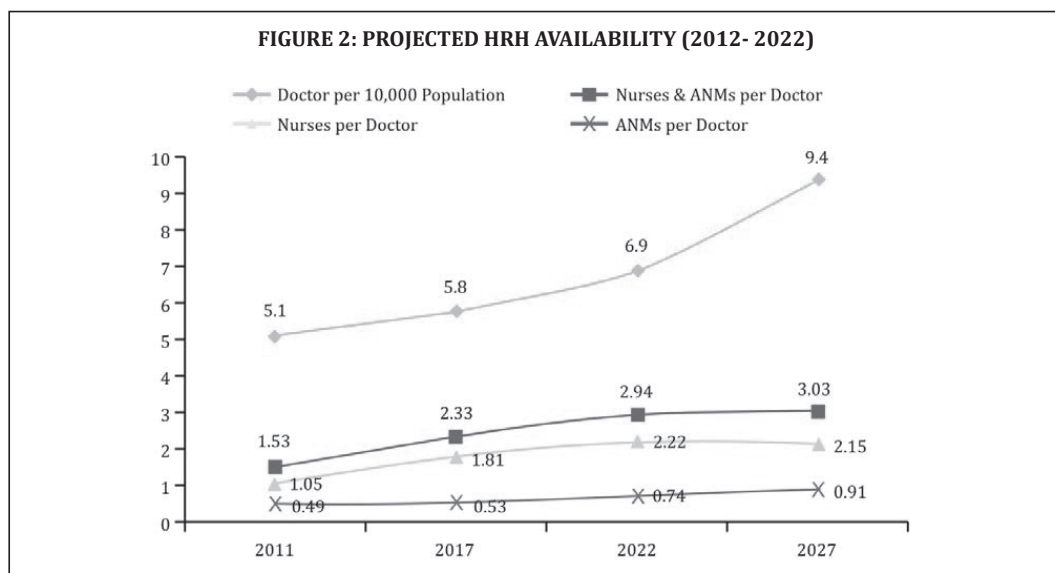
Recommendation 6: Increase the availability of allopathic doctors to 1 per 1000 population, with specific thrust on underserved populations, through the establishment of medical colleges in high focus states, during Twelfth and Thirteenth Five Year Plans.

- a) Along with the establishment of new medical colleges in underserved districts, the admission capacities of existing colleges in the public sector should also be increased. Partnerships with the private sector should be encouraged with conditional reservation of 50% of seats for local candidates, fixed admission fees and government reimbursement of fees for local candidates.
- b) Medical colleges who have the requisite academic infrastructure and are associated with 750 bed hospitals could be an ideal hub for nursing and other health professional colleges, enabling inter-professional education.
- c) The revised MBBS curriculum proposed by the Medical Council of India (MCI) should be refined to include greater focus on preventive, promotive and rehabilitative health care. Measures such as a compulsory posting of one year for all MBBS graduates immediately after internship, with 10% extra marks weightage for one year of rural service and 20% extra marks for 2 years of rural service in the postgraduate entrance examination should be included.
- d) The recent policy stipulated by the Medical Council of India has doubled the number of seats for postgraduate training and will help to meet future requirements. Postgraduate medical education reform should be aligned with principles and framework of universal healthcare coverage. Postgraduate seats should be specifically enhanced in high focus states and districts.
- e) The National Board of Examinations (NBE) should be strengthened to enable postgraduate medical education in qualified hospitals not attached to medical colleges, to produce required number of specialists as per national needs. This will also help to provide required faculty for medical colleges.

Table 4. Proposed Medical, Nursing & Midwifery Institutions

Districts	Number of dis- tricts	Available										Proposed				
		2012-15					2015-17					2017-22				
		Medical Colleges	B.Sc. Nursing	GNM Nursing	ANM Schools	Medical Colleges	BSc	GNM	BSc	GNM	BSc	GNM	BSc	GNM	Total Nursing	ANM Schools 2012-17
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)		
India	642	315	1418	2233	1035	187	15	98	14	93	29	191	440	232		
Arunachal Pradesh	16	0	0	2	2	0	0	1	0	1	1	0	3	0		
Assam	27	47	6	9	10	8	2	4	3	2	4	5	20	10		
Bihar	38	9	1	10	35	27	5	30	3	30	8	42	118	46		
Chhattisgarh	18	3	42	24	45	7	0	0	0	0	0	0	0	0		
Gujarat	26	16	31	65	26	8	0	1	0	1	0	0	2	15		
Haryana	21	5	20	43	47	5	0	1	0	1	0	0	2	0		
Jammu & Kashmir	22	4	4	8	6	1	1	2	1	2	0	1	7	2		
Jharkhand	24	3	5	19	18	10	1	4	1	4	2	6	18	2		
Madhya Pradesh	50	11	97	125	92	18	0	3	0	2	0	16	21	0		
Maharashtra	35	41	77	104	287	3	0	3	0	2	0	0	5	0		
Meghalaya	7	0	2	7	2	1	0	0	0	0	0	0	0	1		
Nagaland	11	0	0	1	1	0	0	1	0	1	1	1	4	1		
Odisha	30	6	14	47	67	10	2	4	2	3	3	8	22	0		
Punjab	20	8	85	156	92	3	0	0	0	0	0	0	0	0		
Rajasthan	33	10	132	157	17	17	0	0	0	0	0	0	0	28		
Sikkim	4	1	2	1	0	0	0	0	0	0	0	0	0	1		
Tripura	4	2	1	3	2	0	0	1	0	1	0	0	2	2		
Uttarakhand	13	4	10	11	14	0	0	1	0	1	2	2	6	0		
Uttar Pradesh	71	21	33	141	73	49	3	40	2	40	5	82	172	99		
West Bengal	19	11	15	50	59	20	1	2	2	2	3	28	38	25		

Source: MEG Secretariat



Rationale

As per MCI data, 31,866 new MBBS doctors were registered during the year 2009-2010 and 34,595 students were admitted in 300 colleges for the academic year 2009-2010.² Based on adjusted figures as per HLEG's estimations, the number of allopathic doctors registered with the MCI has increased progressively since 1974, to 6.12 lakhs in 2011 - which yields an adjusted ratio of 1 doctor for 1,953 persons. This density of 0.5 doctors per 1,000 population is higher than that of nurse-rich countries such as Thailand and Sri Lanka and much lower than doctor-rich nations like the UK and the USA. Moreover, this density has a strong urban skew and is concentrated in very few states.

The production of allopathic doctors in the country as per current trends is both inadequate and uneven. India currently has a density of one medical college per 38.41 lakhs population. Presently, 315 medical colleges are spread over just 188 of the country's 642 districts. This skew is worse in certain states: there is only one medical

college for a population of 115 lakhs in Bihar, 95 lakhs in Uttar Pradesh, 73 lakhs in Madhya Pradesh and 68 lakhs in Rajasthan whereas Kerala, Karnataka and Tamil Nadu each have one medical college for a population of 15 lakhs, 16 lakhs and 19 lakhs, respectively.

With respect to specialist doctors, changes in MCI regulations concerning faculty-student ratios will double the number of postgraduate seats in the coming years. While this yields more specialists, it will result in fewer graduates opting to focus on primary health care. This creates an additional need for medical colleges to produce enough doctors so that primary health care needs may be met. The National Board of Examinations (NBE) presently engages hospitals, which are not attached to medical colleges for postgraduate training, in conventional disciplines as well as in disciplines like rural surgery, which are not taught in medical colleges. Strengthening the NBE will help meet the shortages in specialists as well as the faculty needed for new colleges.

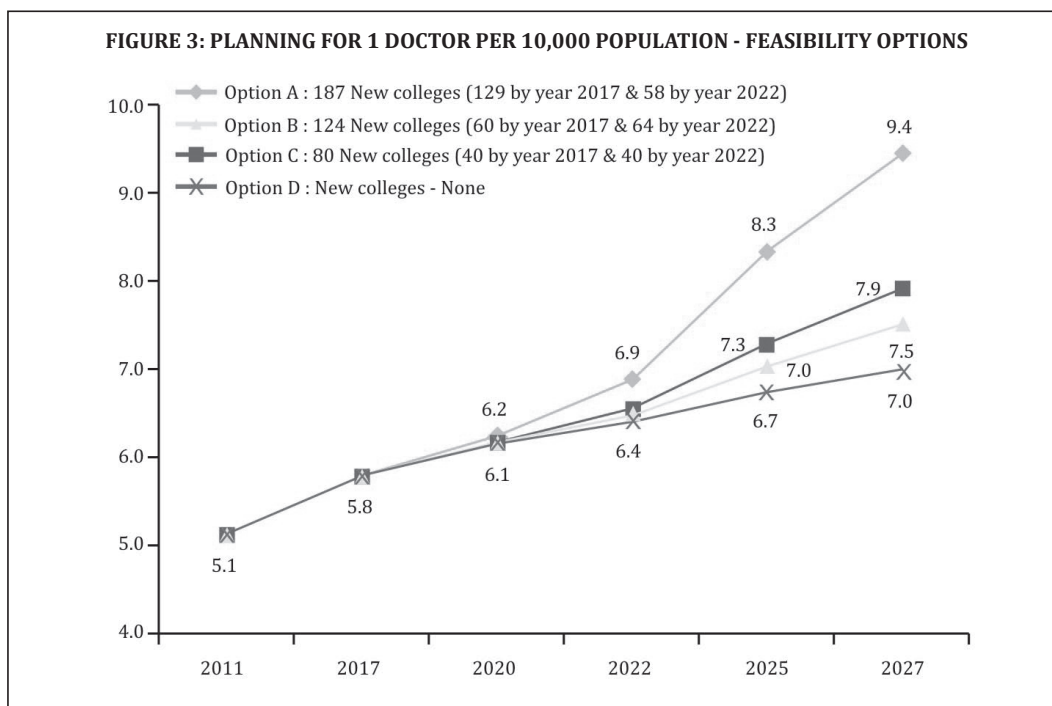
Expected Outcome

The HLEG proposes a phased addition of 187 colleges in underserved districts during the XII and XIII plans for equitable health care accessibility across the states. Like in the case of nursing, these norms may also be achieved in four phases (Phase A: 2012-2015; Phase B: 2015-2017; Phase C: 2017-2020 and Phase D: 2017-2022). Through this phasing process, by the year 2022, India will have one medical college per 25 lakh population in all states except Bihar, Uttar Pradesh and West Bengal.

The implementation of HLEG recommendations will enable the additional availability of 1.2 lakh doctors by the year 2017. This production

would, during the XIII plan, be enhanced further from newly added medical colleges so that 1.9 lakh additional doctors would be added during 2017 to 2022. This production would yield a doctor population ratio of 1:1,058 at the end of Thirteenth Plan. With this rate of growth, it is expected that the HLEG target of 1 doctor per 1,000 population will be achieved by the end of year 2027. The provision of fewer medical colleges during the next two Five Year Plans, (i.e., slower phasing of medical college production) would further delay the goal of 1 doctor per 1,000 population. (See Figure 3)

The HLEG recognises that the establishment of such a large number ,of new medical colleges is a



Source: HLEG Secretariat

logistical challenge, due to shortage of faculty and the scarce financial inputs for the requisite infrastructure. The HLEG believes, however, that linking the new medical colleges to district hospitals will considerably reduce financial burdens, as the existing district hospitals need only to be expanded and academic infrastructure constructed. Additional concerns about 'over-medicalisation' must be balanced against the need to correct the adverse health care imbalance in states with very high preventable morbidity and mortality. We do not view medical colleges merely as production units for doctors. Instead, we see each medical college as an integral part of the health system, responsive to and partly responsible for the health needs of one or two districts with training and service opportunities for various cadres. We believe this purpose can be served by functionally linking medical colleges to district hospitals to contribute towards the normative provision of 2 beds per 1,000 population. These new medical colleges being attached to the district hospitals would facilitate local student enrolment and also be the district hub for other professional colleges in nursing and allied health professional courses.

Recommendation 7: Utilize available doctors within the state at PHCs, CHCs and district hospitals.

Optimally utilise available AYUSH doctors in the following ways:

- a) Facilitate the skill up-gradation of AYUSH doctors for the provision of primary health care at SHCs through a 3-6 month bridge course. AYUSH doctors who are available in surplus in Bihar, Madhya Pradesh, Rajasthan, Uttarakhand and Uttar Pradesh² may be selected for these courses to lead primary health care teams at the SHC.
- b) Create posts of AYUSH doctors at the PHCs, CHCs and district hospitals. This gives patients the option of availing of AYUSH or allopathic services, as per their preference.
- c) Support AYUSH practice through the use of an AYUSH Essential Drugs List. This will enable AYUSH practitioners to use their system-specific knowledge (see Chapter on Access to Medicines, Vaccines and Technology).
- d) Involve AYUSH practitioners in health promotion and prevention of non-communicable diseases.
- e) Create career trajectories in public health and health management for this cadre.

Rationale

India currently has 492 operational AYUSH institutions, with an average admission capacity of over 30,000 undergraduate and postgraduate students per annum.² This is almost double the annual admissions observed in the 1990s.⁴⁰ The challenge of Universal Health Coverage will be to optimally utilise this key HRH cadre, particularly given the critical role AYUSH doctors can play in the primary health care system.

Expected Outcome

The HLEG expects that these recommendations will lead to integration of Indian systems of medicine in the health systems and provide for choices of AYUSH and allopathy health care under a Universal Health Coverage (UHC) framework.

Recommendation 8: Allied Health Professionals should be trained and utilized to achieve the goals of UHC.

The existing allied health workforce (pharmacists, technicians, radiographers, etc.) is both inadequately trained and unevenly distributed. Non-availability of these professionals in several states is due to non-creation of posts and vacancies in existing posts. The creation of relevant posts is therefore a key step in ensuring their integration in health system.

For these cadres to serve the larger goals of UHC, it is recommended that:

- a) Posts be created and filled at appropriate levels as per norms with close attention to distributional equity as assessed routinely through a Human Resources Management Information System (HRMIS).
- b) Training opportunities be ensured for these cadres with opportunities for skill-building, and career advancement (see Recommendation 10). In states without adequate allied health professionals, capacity for paramedical education should be increased in order to address distributional inequities in the longer term.

Rationale

The educational infrastructure for many cadres of allied health professionals is notably weak in India. The type of courses, nomenclature, training patterns, entry of candidates, course curriculum, assessment of candidates, affiliating bodies, nature of awarding institution / university are widely variable. Only a few training institutes in the public or private sector deliver high quality education. Moreover, pre-service education-/training still lacks rationalisation and standardisation. In the case of certain other cadres, career progression can be ensured at the district level, (e.g., medical technician courses at the DHKIs, see Recommendation 9).

Expected Outcome

The creation of new posts, enhanced training of allied health professionals, strengthened educational facilities along with improved scope and support for career progression will reduce gaps in these cadres.

II. Enhance the quality of HRH education and training and improve HRH management by competency based, health system-connected, problem solving, IT enabled learning methods and integrated trainings.

Recommendation 9: Establish District Health Knowledge Institutes (DHKI) in districts with more than 5 lakh population, as nodal centres for development of competency-based professionals.

- * Create DHKIs for induction training, in-service training, continued medical education, continued nursing education and continued paramedical education programmes. The DHKIs can be authorised to issue course completion certificates to the CHWs on completion of all the mandated training modules.
- * Develop onsite training linkages with DHKIs, hospitals and health centres in the district. DHKIs should serve as centres for skill up-gradation with capacity for offering: 1) an LHV training course for ANMs; 2) an Health Assistant training course for male health workers; 3) a diploma course in Public Health Nursing; 4) a Diploma course for Medical Technicians (DMT); 5) Bridge courses for AYUSH doctors, dentists, pharmacists, physiotherapists and nurses to function as rural health practitioners at

SHCs; 6) a Bachelor of Rural Health Care (BRHC) course; and 7) a Bachelor of Medical Technology (BMT) course.

- * Develop the DHKI as the nodal point for distance and e-learning and faculty sharing across the streams.
- * DHKI would pave way for admission of local candidates and also uniformity in admissions, curricula, and training. District HRMIS should be used to keep track of progression through training, for various cadres.

Rationale

We envisage that the DHKIs will address the severe shortage of educational infrastructure and provide the appropriate level of decentralisation of health care education. They will also ensure competency-based training to meet the health needs of local communities and provide much needed synergy between health and education sectors. Our recommendations echo the proposal by the Bajaj Committee (1987) advocating the creation of a 'District Institute of Education and Training' to offer 'integrated training modules'.⁸ In 2008, the National Training Strategy further advocated integrated training for all health and family welfare programmes and district level training at functional facilities as well as capacity building of districts for HRH trainings.⁴⁴ Despite the NRHM's efforts, training continues to be disorganised due to a lack of physical and academic infrastructure at the district level. The lack of training facilities has been a major concern across districts for skill development of HRH.

Quality of education is of particular concern; recent data from the five Empowered Action Group (EAG) states show that only 20-25% of ANMs graduating from training programs reported the ability to conduct a delivery independently. Moreover, between 40% and 55% of

GNNs report the inability to administer immunisation without supervision.⁴⁵⁻⁴⁹ The lack of competency-based training geared towards on-the-ground health needs is connected, we believe, to the lack of educational infrastructure at the decentralised level.

It is critical to scale up training capacities in terms of physical infrastructure and trainers, maximise the use of information technology and develop competency-based assessments and certification processes to ensure optimal utilisation of HRH. The first step in this direction would be to establish DHKIs for induction and in-service training under various national health programmes. The supervision of the large ANM workforce needs to be strengthened. To enable this, the DHKI will offer courses for LHV, PHN and Male Health Assistant training. This will improve the quality of supervision of CHWs/A-SHAs, ANMs and male health workers at the primary health care level.

In addition, the proposed DHKIs should also offer diploma programmes in Public Health Nursing for LHVs and nurses with experience at PHCs / CHCs, which will enable them to become PHNs. DHKIs should conduct the new bridge course for male health workers to be effective in supervisory roles as health assistants, and subsequently, as health inspectors.

DHKIs should also be developed as institutions for entry-level Diploma in Medical Technology (DMT) courses and the subsequent Bachelor of Medical Technology (BMT) course with specialisations in medical laboratory technology (biochemistry, microbiology, pathology, histology, cytology), ophthalmology, operation theatre technology, cardiology, radio-diagnosis, radiotherapy, imaging technology and ultrasonography. Admissions procedures for these courses could be modelled after the male health worker course currently offered by the Government of India (2010).

The creation of the Bachelor's degree and bridge courses in Rural Health Care should also be located at district level, so that the graduates of these courses may be locally recruited and have opportunities for practicum experience at the SHCs, relevant to the needs of local communities.

Expected Outcome

Through a phased process where underserved states and districts with larger population densities will receive priority 172 new DHKIs will be set up during 2012-2015, 163 by the year 2017 and an additional 213 by the year 2022.

Recommendation 10: Strengthen HRH management and supportive supervision mechanisms at block, district, state and national levels along with the provision of Human Resources Management Information Systems (HRMIS). Provide support for the advancement of public health professionals through training in public health and health sciences.

We recommend strengthening health sector management by supporting postgraduate courses in public health and hospital management for the health professionals and health programme management for medical, dental, AYUSH, nursing and allied health professionals (see Chapter on Management and Institutional Reforms).

Rationale

a) **Public Health Managers:** One of the major challenges in the health system has been in the area of health sector management including public health, hospitals and the management of a large multi-cadre health work force. The MOHFW's Expert Committee on the Public Health System (1996) observed that many of the central health programme managers have no formal education in public health and management."

The positioning of adequately skilled public health managers continues to be a major constraint in public health responses across the districts.

b) **Public health is a formal discipline,** which integrates streams of knowledge in epidemiology, biostatistics, demography, health promotion, social and behavioural sciences, health economics, gender, ethics and management. The availability of public health professionals with multidisciplinary education would enhance the efficiency and equity of the health system and its synergy with delivery of health care. This would also relieve the current burden on clinical professionals who are ill-equipped, and yet required by default, to cope with public health management. The states of Andhra Pradesh, Odisha and Gujarat initiated the development of public health cadres by deputing in-service candidates to the public health management courses; the same needs to be extended to other states.

* In view of the limited availability of these categories, there is an immediate need to establish public health training institutions and strong partnerships with public health management training institutions. These courses could be duly recognised by the State Health Sciences Universities (see Recommendation 12). These qualifications should be made mandatory for all positions with public health responsibilities. The HLEG recommends new public health management institutions,¹⁰ established in phases from 2012-2015, 2017-2022, and 2017-2022.

c) **Nursing & ANM cadre management:** With Nurses and ANMs forming the largest category of HRH, there is a dire need for enhanced managerial support in terms of nursing positions at directorates in states

and also in the MOHFW, as Rationale recommended by the High Powered Committee on Nursing Professions.³⁹

The provision of nursing and midwifery management cadres at the national, state and district levels would enable supportive supervision for nursing and midwifery cadres, including nurse practitioners.

- d) **Supportive Management Units:** The lack of managerial support for implementing health care programmes is a major constraint and there is an urgent need for the provision of health managers, hospital managers, Human Resources for Health (HRH) managers, Health Management Information Systems (HMIS) managers and Accounts managers. These managerial cadres would be trained to provide HRH monitoring for performance and accountability, and facilitate decentralised and timely recruitment, as well as needs based distribution of available HRH. Managerial structures supporting Human Resource Management Information Systems (HRMIS) at national, state, and district levels would enable the monitoring of HRH availability and provide basic inputs for HRH policies and planning. The introduction, of HR managers at the sub-district hospital level and higher facilities would ensure effective HR management and enable technical professionals to focus on clinical care.

The HLEG assessed the needs of health sector managerial cadres at block, district and state levels to be over 1.96 lakhs in the aforementioned categories. With the provision of appropriate career paths, these cadres would progress from the block level to district, state and national levels, resulting in better integration and implementation of health programmes.

Recommendation 11: Strengthen the existing State and Regional Institutes of Family Welfare and selectively develop Regional Faculty Development Centres to enhance the availability of adequately trained faculty and faculty-sharing across institutions.

Rationale

State and Regional Institutes of Health and Family Welfare (SIHFW/RIHFW) play a key role in education and training. These institutes should extend their scope of work to include support for management cadres and implementers of national health programs. The proposed rapid scale-up of HRH requires greater attention to health faculty across states, striking a balance between local needs, availability, and pedagogical quality. The MCI has spearheaded efforts to improve the quality of medical training through 13 regional centres, equipped with medical education technologies.⁵¹ In addition to cadre-specific efforts, faculty development across cadres under SIHFW/RIHFW can ensure integrative, competency-based, and field-relevant teaching. Where appropriate, this should be designed to engage multiple cadres at once (nurses and doctors, ANMs and male health worker). To facilitate this, regional collaboration for faculty development is proposed.

Many existing educational institutions are presently facing severe imbalances in faculty as well as infrastructure. The proposed rapid scaling up of HRH educational and skill development training institutions, up to the district level, necessitates centre for faculty development and continuing education. The HLEG recommends the provision of 20 regional centres for faculty development and sharing of faculty across institutions. The existing 44 State and Regional Institutes of Health & Family Welfare should be strengthened as the nodal institutes for Training of Trainers (ToTs) and skill development of

health managers as per local needs. They should develop curricula and training modules and undertake analysis of training uptake and utilisation in collaboration with academic institutes such as NIHFW, National Health Systems Resource Centre (NHSRC) and the Public Health Foundation of India (PHFI).

Expected Outcome

By 2017, 44 State and Regional Institutes will function as the nodal points for coordination of all induction and in-service trainings and entrust various educational programmes to DHKIs. In this way academic and technical support will be made available for primary health care programmes. It is anticipated that 12 faculty development centres at RIHFW/SIHFWs would be established by the year 2015, and an additional 8 by the year 2017. There will be sharing of faculty between states who need them, and those with existing capacity in faculty development. These regional faculty development centres will ensure faculty production, faculty sharing, and the creation of competency-based curricula relevant to local needs incorporating appropriate use of information technology to facilitate distance education.

Recommendation 12: Improve Quality in HRH Education through appropriate linkages in accreditation mechanisms of state level boards, State Health Sciences Universities and National Council for Human Resources in Health (NCHRH).

Rationale

Curricula in health professional education should keep pace with the changing dynamics of public health, health policy and health demographics. Medical education also requires greater orientation of providers to social determinants of health, including gender and equity issues. Health

professional education should be oriented more towards population-based primary and preventive health care rather than being driven by a curative/treatment paradigm. Medical and nursing graduates in the country should be well trained, prepared and motivated to practice in both rural and urban environments. The curricular reform process initiated by the Medical Council of India for medical education should be emulated by other councils.

We recommend 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. It is equally important to ensure that on-going training and advancement opportunities are offered to community health workers serving in villages and urban areas. These workers, who provide essential outreach to patients as well as feedback on emerging problems in the health system, need decentralized, intra-district training. Systems of continued medical education and continued skill improvements - linked to promotions and renewal of license to practice - should be introduced.

The current training of medical and nursing graduates mostly prepares them for urban settings leading them to super specialize instead focussing more strongly on basic primary health care. A study by WHO has aptly commented on the disconnect between medical syllabi and reducing morbidity.⁵² The Commission on the Education of Health Professionals for the 21st Century has pointed out that "in India the growth of private medical schools raises concerns about the quality and transparency of one of the one of the world's largest medical educational system."¹⁵ Recommended changes would obviously need policy thrusts for major reforms of adopting competency-based curriculum, inter-professional/ transprofessional education,

employing IT learning, local adaptation, strengthening of educational resources and promotion of professionalism.

It is imperative to establish robust accreditation mechanisms for ensuring adequately trained health care professionals. State level boards for paramedical professionals are required for uniformity in the admissions, curricula, trainings and accreditation. The proposed bridge courses for skill up-gradation, certificate courses and diploma courses for allied health professionals should be duly recognized by state level boards as stipulated by the National Council for Human Resources in Health (NCHRH) for uniformity across the states and Union Territories.⁵³ All degree courses could be under the purview of the State Health Science Universities as per the national guidelines formulated by the National Council for HRH. As early as 1987, the Bajaj Committee recommended the establishment of Health Science Universities in each state.⁸ States such as Andhra Pradesh, Punjab, Rajasthan, and Tamil Nadu have already established these institutions. The NCHRH should eventually be the apex body for all HRH policymaking and implementation of standards across the country.

Expected Outcome

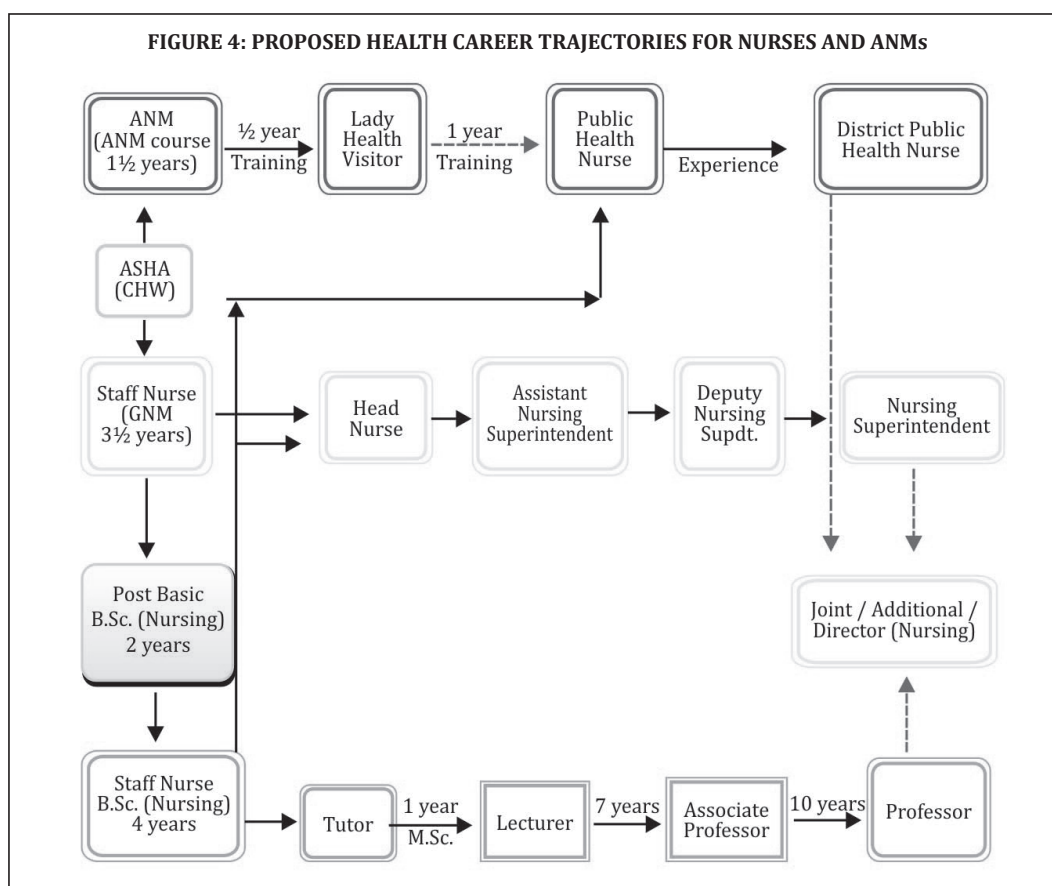
At least 20 new Health Sciences Universities should be established by the year 2022. By the year 2017, councils should be in place for all cadres of health workers. Universal accreditation, registration, and regulatory institutions will ensure that the pedagogical needs for HRH are determined in a timely fashion. They will also ensure that output is carefully monitored and managed, and standards of education and practice are maintained, with NCHRH as the overarching body for all categories of health professional education. Ensuring quality of education and practice will ensure that the goals of accessibility and quality health care are met in turn.

Recommendation 13: Establish HRH management systems for improved recruitment, retention, performance; rationalized pay and incentives; and assured career tracks for competency-based professional advancement.

HRH Retention and Performance incentives should be introduced uniformly and must include:

- a) Provision of requisite posts and filling up of all vacancies regularly in a time bound manner.
- b) Transparent transfer policies and implementation.
- c) Fixed tenure, especially in hardship areas, and residential complexes in hardship areas, along with career progression through reservation of postgraduate seats.
- d) Bridge courses with study leave; performance-based, time-bound promotions; contractual appointments on equal pay; and regularisation on satisfactory completion of 2-3 years.
- e) Systematic performance assessment for recruitment, mentoring, supervising, and career progression, linked to the Health System Surveillance Unit (see chapter on Management and Institutional Reforms).
- f) Monetary incentives such as rural area allowance, hardship area allowance, child education allowance and transport allowance (doubled in difficult postings).
- g) Doctors and nurses should be full-time employees in the public sector and they may be duly compensated on parity with their colleagues in other sectors.

- h) Revision of job responsibilities and duties should be routinely undertaken, with provisions for task shifting and task sharing to appropriate cadres, (e.g., administrative tasks shifted to health systems managers, specific clinical functions of doctors and nurses to BRHCs and nurse practitioners respectively).
- i) Two separate Health Systems Management (HSM) and Public Health cadres are recommended, that are well integrated with various health departments to address both the management and public health related inadequacies in the present system. Training of these cadres will incorporate principles of professional management into decision-making in health institutions. (Detailed in the chapter on Management and Institutional Reforms).
- j) Well-defined career paths are recommended to motivate health workers and improve health system efficiency, ensuring minimisation of career discontinuity for women in particular. We suggest a minimum of four promotions in the career span of each category as detailed in Figure 4. This includes nurses, ANMs, male health workers, lab technicians and health programme managers.



Source: HLEG Secretariat

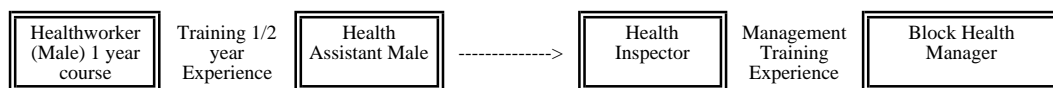
Career tracks have been putatively suggested for a number of cadres as an illustrative exercise:

Nurses and ANMs: Presently, an ANM, after completing class X and a 1.5 year diploma course, enters service at about 20 to 22 years of age, and has at best one opportunity for promotion (after six months of training) to become a Lady Health Visitor (LHV) in her professional tenure of nearly 40 years. We recommend that ANMs, after promotion as LHVs, should be considered for the posts of Public Health Nurses (PHN), advancing further to District Public Health Nurses (DPHN) subject to their completion of one year DPHN course. The present lateral entry of clinical nurses to the posts of PHN could be retained, subject to their completion of a PHN course and a minimum of 5 years working experience in PHCs. The ANM cadre should be provided with one-year courses in midwifery education (diploma in nursing education) so that they can pursue academic careers at ANM schools and LHV training schools. ANMs should be provided opportunities to become staff nurses facilitated through the reservation of seats in nursing schools. Similarly, CHWs (ASHAs), who are well-performing members of the workforce, should be provided with opportunities to advance their careers by reservation of seats in ANM and nursing schools.

Similarly, nurses who complete a three and a half year GNM diploma course or a four year graduation (B.Sc.) in nursing after class XII and enter the service around the age of 24 years are provided with promotional posts of Head Nurse, Assistant Nursing Superintendent, Deputy Nursing Superintendent and Nursing Superintendent. Graduate nurses also have the opportunities in the teaching cadre to become a Tutor, Lecturer, Associate Professor or Professor. We recommend that bridge courses be provided for clinical areas such as operation theatres and ICUs, as well as clinical super specialty areas such as cardiology and psychiatry, for their professional development as specialist nurse practitioners. The nursing cadre should also be provided bridge courses in nursing education, nursing administration, hospital management and health management to enable them to take up the administrative posts at facility, block, district and state levels.

Male Health Worker: The Male Health Worker, after completing class XII and a one year diploma course enters service and is promoted only once in his service span, to a supervisory role as a Male Health Assistant. We recommend that further promotional avenues be offered to this category with a supervisory post of Health Inspector up to possibly block level health managers. This would help in the effective implementation of communicable and non-communicable disease programmes as well as prevention and control of potential epidemics.

Figure 5. Proposed Career Trajectory for Health Worker (Male)

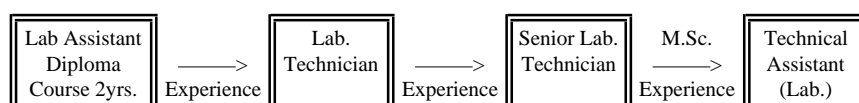


Source: HLEG Secretariat

Laboratory Technician: The Laboratory Assistant, after completing class XII and a two-year diploma course, enters service and is first promoted to laboratory technician and later as senior lab technician. We recommend that a B.Sc.

and M.Sc. qualification may be made mandatory for the promotion of this category to higher level posts, such as technical assistants and scientific assistants at district public health laboratories and medical college hospitals for diagnostic services.

Figure 6. Proposed Career Trajectory for Laboratory Technicians

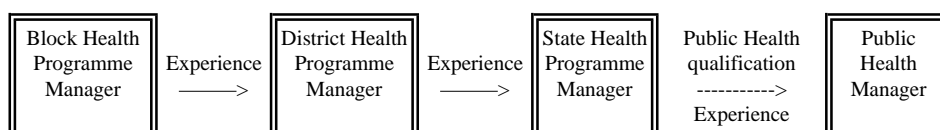


Source: HLEG Secretariat

Managerial category: Health managers, with a management degree as a minimum qualification, who are part of the managerial force can progress in their career paths from the block level to the

district and to statelevel positions, and after acquiring public health qualifications, can become a public health manager.

Figure 7. Proposed Career Trajectory For Health Managers



Source: HLEG Secretariat

Rationale

It has been argued that regulatory frameworks should ensure efficiency in the public health delivery system and ensure access to health workers in remote, rural or otherwise underserved areas.⁵⁴ WHO is currently developing recommendations to ensure recruitment and retention of HRH in areas with linkages to education, regulation, financial incentives, as well as personal and professional support.⁵⁴ Enhanced financial incentives such as transport allowance and Non-Practicing Allowance (NPA) are suggested for rural postings, so as to compensate for the lack of children's educational facilities, irregular electricity and potable water. These recommendations echo, and in some cases build upon, considerations built into the NRHM and other government initiatives to improve the overall functioning of the health system.

We also recommend that effective systems of performance assessment should guide human resources in recruitment, training, mentoring, supervising, and motivating personnel. Managing for equitable results (to ensure equity) and value for money (to ensure efficiency and cost-effectiveness) should drive the performance of the proposed UHC system. Formal systems of performance appraisal should be applied to health workers at every level and used as a basis for awarding individual and group incentives - both monetary and non-monetary.

Expected Outcome

These steps are likely to improve the ability of the health system to attract, recruit, retain and motivate health personnel in underserved areas, optimise their competencies and encourage team functioning for larger impacts on health outcomes

especially in under-served areas.

III. Invest in health sciences research and innovation to inform policy, programs and develop feasible solutions.

Recommendation 14: Build capacity for health sciences research relevant to prioritized national health problems and health system operations.

We need to invest in building capacity for health sciences research, which is particularly relevant to national health priorities. This includes epidemiology, barriers to care, affordable interventions and health system operations. NCHRH and the National Council for Health Education Research should collaborate in advancing interdisciplinary research. This should involve:

- a) We recommend increasing the research budget in public health and biomedical sciences across all national funding agencies. State governments should also be encouraged to allocate suitable funds for locally relevant research, particularly in public health.
- b) Investments should be made in centres of excellence, Health Sciences Universities, independent research organisations and in the establishment of an Interdisciplinary Commission on Health and Biomedical Research to develop a vision, roadmap and investment plan for India's health sciences research and innovation programme for 2022.
- c) Given that health sciences and technology research spans multiple disciplines, agencies and ministries, the membership of this high level commission should comprise of

government research agencies, academia, private industry, state governments and civil society.

Rationale

It is critical for India to augment research budget and capacity for health sciences research and innovation to inform health policy and to discover affordable, relevant treatments, products and solutions for Universal Health Coverage. Investments in research and innovation are extremely important to India's knowledge base in the health sector. Research output in health sciences is presently low in content, quality and impact.⁵⁵

This is largely due to the modest health research budgets of national funding organisations such as Indian Council of Medical Research, the Department of Biotechnology and the Department of Science and Technology for health sciences research. The Twelfth Plan should aim at building strong research capacity and support, innovative platforms in public health, biomedical sciences, and health sciences.

Expected Outcome

In the medium and long term, India will be capable of discovering affordable new drugs, vaccines, preventive treatments and healthcare devices and diagnostics to meet her rapidly increasing health sector needs. This enhanced self-sufficiency of country will overtime play an important role in reducing the country's dependence on imported products and technologies. The country could then eventually build its knowledge base in public health, biomedical sciences and biotechnology. Health systems research (operational / implementation) will promote and encourage design and evaluation of innovations to improve health services performance and population health outcomes.

Table 5. Illustrative HRHEducation & Training Costs

	Institutions	Unit Cost (Crore)	Number Proposed				Costs (Rs. Crore)				Total Costs
			2012- 2015 A	2015- 2017 B	2017- 2022 C & D	Total	2012- 2015 A	2015- 2017 B	2017 -2020 C	2020 -2022 D	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
A	Educational Institutions										
1	ANM Schools - New*	5	201	31	-	232	1005	155	-	-	1160
2	ANM Schools- Strengthening	1	145	66	-	211	145	66	-	-	211
4	Nursing Schools- New*	8	98	93	191	382	784	744	784	744	3056
5	Nursing Schools- Strengthening	0.5	150	100	-	250	75	50	-	-	125
6	Nutrsing Colleges - New	10	15	14	29	58	150	140	150	140	580
7	Nursing Colleges - Strengthening	6	30	30	-	60	180	180	-	-	360
8	Medical Colleges - New	100	59	70	58	187	5900	7000	4000	1800	18700
9	Public Health Manage- ment colleges	10	10	10	10	30	100	100	100	-	300
10	Allied Health Profes- sional Colleges	10	172	163	213	548	1720	1630	2130	-	5480
Sub-Total			880	577	501	1,958	10,059	10,065	7164	684	29,972
B	Trainings & Quality Strengthening										
11	District Health Know- ledge Institutes#	10	172	163	213	548	1720	1630	2130	-	5480
12	CHW Trainings at DHKIs	-	10 lakh CHWs	10 lakh CHWs	20 lakh CHWs	-	275	275	275	275	1100
13	LHV Schools - Strengthening	1	16	28	-	44	16	28	-	-	44
14	SIHFW & RIHFWs - Strengthening	1	25	19	-	44	25	19	-	-	44
15	Faculty Development Centres SIHFWs	10	12	8	-	20	120	80	-	-	200
16	State Boards	1	35	-	-	35	35	-	-	-	35
17	State Health Sciences Universities	5	25	-	-	25	125	-	-	-	125
Sub-Total			285	218	213	716	2316	2032	2405	275	7028
Grand Total			1165	795	714	2674	12375	12097	9569	2959	37000

Source: HLEG Secretariat

* Districts with > 5 lakh population # Includes trainings, bridge courses, LHV training, BRHC, Diploma courses (Technicians, etc.)

Implementation of HLEG Recommendations

Strategic investments in education for rapid expansion of HRH can enhance the availability of scientifically credible and socially connected professionals for all communities. Present HRH production capacities are lagging far behind needs in states and districts with poor health outcomes. The HLEG recommends greater focus of public investment for the creation of additional educational institutions in HRH deficient states and districts so as to facilitate local production of HRH in the districts with populations of over 10 lakhs. Government of India's support could be 80% of total budget for Government sector and 20% for private sector medical colleges, nursing colleges, nursing schools and ANM schools. This monetary support should be limited to new educational institutions in identified underserved districts, preferably for medical colleges and nursing colleges attached to district hospitals and for nursing schools and ANM schools at sub-district hospitals and CHCs. These institutions should allot 50% of seats to local candidates in the district, 30% seats for other districts within the state, and the rest of the 20% of seats open to others (also to be allocated by merit-based criteria).

There is still a long way to go before we attain the ideal norm of one doctor per minimum of 1,000 population, and 3 nurses/ANMS per doctor. Existing institutions in the country are inadequate to meet the present needs as per the norms advocated by various expert committees, as well as WHO global norms. Increasing admission capacities are crucial boosting the critical cadres of doctors, nurses, midwives and male health workers. It is equally important to ensure a high level of quality in educational institutions to upgrade HRH skills to match the changing health needs of communities. The HLEG recommends the implementation of the aforementioned strategies during the Twelfth and Thirteenth plan periods in four phases, as detailed in Table 5, with

a total investment of an estimated Rs. 37,000 crore, or roughly 3,700 crore per annum. Costing is based upon estimations and projections made by the HLEG Secretariat on the basis of figures and projections from existing government documents as well as consultation and discussion with experts and officials.

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Annexure - I. HRH Norms (32 categories)

		Indian Public. health Standards Essential HRH ⁺ (Revised 2010)					Medical Council of India Medical College	Recommended (2011)					
		SHC	PHC	CHC	SDH	DH/ Dist. Hq		SHC	PHC	CHC	SDH (201- 300 beds)	District Hosp. (301- 500 beds)/ Dist. Hq.	Medical College Hospital @ (750 beds)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Total	3	19	50	234	411	796	4	24	54	247	435	808
1	ANM	2	1	1	4	4	-	2	1	1	4	4	-
2	LHV	-	2	1	1	1	-	-	2	1	1	1	-
3	PHN	-	-	1	-	-	-	-	-	1	-	-	-
4	DPHN	-	-	-	-	1	-	-	-	-	-	1	-
5	Health Worker- Male	1	-	-	1	1	-	1	1	1	1	1	-
6	Health Asst. - Male		1	-	-	-	-		1	1	-	-	-
7	Lab. Technician	-	2	3	13	9	30	-	2	3	13	16	30
8	Pharmacist (allo- pathic)	-	2	3	8	9	15	-	2	3	8	9	15
9	Pharmacist (AY- USH)	-	-	1	-	1	-	-	1	1	-	2	-
10.	Radiographer/ DRA	-	-	2	5	20	16	-	-	2	5	20	16
11.	O.T. Technician	-	-	1	12	12	14			1	12	12	14
12.	Ophthalmic Tech./Asst.	-	1	1	2	2	2		1	1	2	2	2
13.	Physiotherapist	-	-	-	1	2	-	-	-	1	1	2	4
14.	Health Educator/ Counselor	-	-	1	2	2	-	-	1	1	2	2	2
15.	Health Pro- gramme Man- ager	-	-	1#	-	1	-	-	-	1	-	1	-
16.	Hospital Man- ager	-	-	-	1	1	-	-	-		1	1	1
17.	HR Manager/ Asst.	-	-	-	-	1	-	-	-	-	1	1	1
18.	Accounts Man- ager/ Asst.	-	1	1	3	5	2	-	1	1	3	5	2
19.	HMIS Manager/ DEO	-	1	2	2	6	4	-	1	2	2	6	4
20.	Staff Nurse	-	5	18	127	269	437	-	5	18	127	269	437

(Contd.)

Annexure - I. (Concl.d.)

		Indian Public. health Standards Essential HRH [^] (Revised 2010)					Medical Council of India Medical College	Recommended (2011)					
		SHC	PHC	CHC	SDH	DH/ Dist. Hq		SHC	PHC	CHC	SDH (201- 300 beds)	District Hosp. (301- 500 beds)/ Dist. Hq.	Medical College Hospital @ (750 beds)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
21.	Head Nurses/ Sister in-charge	-	-	-	-	-	60	-	-	1	12	16	60
22.	Matrons/ Asst. Matron	-	-	-	7	9	7	-	-	-	7	9	11
23.	Rural Health Care Practitioner	-	-	-	-	-	-	1	-	-	-	-	-
24.	Doctor (AY- USH)	-	1	1	-	2	-	-	1	1	-	2	-
25.	Dentist	-	-	1	2	2	2	-	1	1	2	2	2
26.	Doctor (allo- pathic)	-	2	6	20	24	165	-	3	6	20	24	165
27.	Specialist - Obstetrics	-	-	1	6	8	8	-	-	1	6	8	8
28.	Specialist - Pediatrics	-	-	1	3	4	6	-	-	1	3	4	6
29.	Specialist - Anesthesia	-	-	1	6	6	8	-	-	1	6	6	8
30.	Specialist - Med- icine	-	-	1	3	4	6	-	-	1	3	4	6
31.	Specialist - Sur- gery	-	-	1	3	3	12	-	-	1	3	3	12
32.	Specialist - Oph- thalmology	-	-	1/5 CHC	2	2	2	-	-	1/5 CHC	2	2	2

> Sub-district & district hospitals - Essential HRH

@ Medical Council of India guidelines

* one medical officer to be trained/ qualified in public health

Public Health Manager- Specialist or PG with MBA/DPH/MPH

^ MOs trained / qualified in Obst., Paediatrics & Anaesthesia

**Annexure-II. HRH Requirements (32 categories) at Health Facilities
(for provision of 2 beds/1000 Population year 2022)**

HRH Category		SHCs -(314547)	PHCs (50591)	CHCs (12648)	SDH (4561)	DH/Hq. (642)	MCH (502)	Total HRH
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	ANM Category	629094	151773	25296	22805	3210	-	832178
1.	ANM	629094	50591	12648	18244	2568	-	713145
2.	LHV	-	101182	12648	4561	642	-	119033
	Health Worker-male category	314547	101182	25296	4561	642	-	446228
3.	Health Worker - Male	314547	50591	12648	4561	642	-	382989
4.	Health Assistant - Male	-	50591	12648	-	-	-	63239
	Pharmacists	-	151773	50592	36488	7062	7530	253445
5.	Pharmacists (allopath)	-	101182	37944	36488	5778	7530	188922
6.	Pharmacists (AYUSH)	-	50591	13648	-	1284	-	64523
	Technician etc.	-	202364	113832	159635	34668	34136	544635
7.	Lab. Technician	-	101182	37944	59293	10272	15060	223751
8.	Radiographer/ DRA	-	-	25296	22805	12840	8032	68973
9.	O.T. Technician	-	-	12648	54732	7704	7028	82112
10.	Ophthalmic Technician	-	50591	12648	9122	1284	1004	74649
11.	Health Educator	-	50591	12648	9122	1284	1004	74649
12.	Physiotherapists	-	-	12648	4561	1284	2008	20501
	Nursing Category	-	252955	252960	665906	189390	255016	1616227
13.	PHN	-	-	12648	-	-	-	12648
14.	DPHN	-	-	-	-	642	-	642
15.	Staff Nurses	-	252955	227664	579247	172698	219374	1451938
16.	Head Nurses	-	-	12648	54732	10272	30120	107772
17.	Matrons/ Assistant Matrons	-	-	-	31927	5778	5522	43227
18.	Rural Health Care Practitioner	314547						314547
19.	Dentists	-	50591	12648	9122	1284	1004	74649
20.	Doctor (AYUSH)	-	50591	12648	-	1284	-	64523
21.	Doctor (allopathy)	-	151773	75888	91220	15408	82830	417119
	Specialists - Total	-	-	65770	104903	17334	21084	209091
22.	Specialists - Obstetrics	-	-	12648	27366	5136	4016	49166
23.	Specialists - Paediatrics	-	-	12648	13683	2568	3012	31911
24.	Specialists - Anaesthesia	-	-	12648	27366	3852	4016	47882
25.	Specialists - Medicine	-	-	12648	13683	2568	3012	31911
26.	Specialists - Surgery	-	-	12648	13683	1926	6024	34281
27.	Specialists - Ophthalmology	-	-	2530	9122	1284	1004	13940
28.	Health Programme Manager	-	-	12648	-	642	-	13290
29.	Hospital Manager	-	-	-	4561	642	502	5705
30.	HR Manager/ Assistant	-	-	-	4561	642	502	5705
31.	Accounts Manager/ Assistant	-	50591	12648	13683	3210	1004	81136
32.	HMIS Manager/ DEO	-	50591	25296	9122	3852	2008	90869
	Grand Total	1258188	1214184	685522	1126567	279270	405616	4969347
	Technical Categories	1258188	1113002	634930	1094640	270282	401600	4772642
	Managerial Categories	-	101182	50592	31927	8988	4016	196705

Source: HLEG Secretariat.

CHAPTER IV HEALTH SERVICE NORMS

Reorienting Health Service Delivery for Universal Health Coverage

In this chapter, we describe the structural and functional changes required to develop Universal Health Coverage (UHC) in India, with a special focus on underserved populations. We summarise health system factors related to health outcomes, outline the issues affecting access, equity and quality of health care, discuss our rationale for normative reform and finally present a set of overarching recommendations.

1. Situational analysis

a) The need for normative architectural corrections: A global perspective

A well-functioning health system is of paramount importance in ensuring UHC. Marchal and Cavalli et al. (2009) discuss the growing consensus on "the need for health system strengthening by creating the necessary enabling

institutional and systemic environment to achieve and sustain [the United Nations' Millennium Development Goals] in the long term.¹ A critical strategic and managerial role of any national health system is to identify and target health priorities at national and state level and design context-specific service delivery and financing models.² The World Health Report of 2008 identifies ten trends in health care delivery that are common across low, middle and high-income countries that need to be addressed adequately to strengthen the health system as a whole.^{3,4} The trends are detailed in Table 1.

Perhaps because of the unique and dynamic challenges facing the country, India's performance in creating a paradigm of health and wellness for its citizens has been less than satisfactory. The advantages of the availability of large technical human resources, science education and access to the English language have not resulted in better health outcomes for citizens. In matters relating to health, the country ranks below many others that started with similar health indicators and economic bandwidths.⁵

Table 1. Inefficiencies in Health Care Delivery

Source of inefficiency	Common reasons for inefficiency	Ways to address inefficiency
(1)	(2)	(3)
1. Medicines: under use of generics and higher than necessary prices for medicines	Inadequate controls on supply chain agents, prescribers and dispensers; lower perceived efficacy and safety of generic medicines; historical prescribing patterns and inefficient procurement and distribution systems; taxes and duties on medicines; excessive mark-ups	Improve prescribing guidance, information, training and practice. Require, permit or offer incentives for generic substitution. Develop active purchasing based on assessment of costs and benefits of alternatives. Ensure transparency in purchasing and tenders. Remove taxes and duties. Control excessive mark-ups. Monitor and publicise medicine prices.
2. Medicines: use of substandard and counterfeit medicines	Inadequate pharmaceutical regulatory structures and mechanisms; weak procurement systems	Strengthen enforcement of quality standards in the manufacture of medicines; carry out product testing; enhance procurement systems with pre-qualification of suppliers.

(Contd.)

Table 1. (Concl'd.)

Source of inefficiency	Common reasons for inefficiency	Ways to address inefficiency
(1)	(2)	(3)
3. Medicines: inappropriate and ineffective use	Inappropriate prescriber incentives and unethical promotion practices; consumer demand and expectations; limited knowledge about therapeutic effects; inadequate regulatory frameworks	Separate prescribing and dispensing functions; regulate promotional activities; improve prescribing guidance, information, training and practice; disseminate public information.
4. Health care products and services: overuse or supply of equipment, investigations and procedures	Supplier-induced demand; fee-for-service payment mechanisms; fear of litigation (defensive medicine)	Reform incentive and payment structures (e.g., capitation or diagnosis-related group); develop and implement clinical guidelines.
5. Health workers: inappropriate or costly staff mix, unmotivated workers	Conformity with pre-determined human resource policies and procedures; resistance by medical profession; fixed or inflexible contracts; inadequate salaries; recruitment based on favoritism	Under take needs-based assessment and training; revise remuneration policies; introduce flexible contracts and performance-related pay; implement task-shifting and other ways of matching skills to needs.
6. Health care services: inappropriate hospital admissions and length of stay	Lack of alternative care arrangements; insufficient incentives to discharge; limited knowledge of best practice	Provide alternative care (e.g., day care); alter incentives to hospital providers; raise awareness about efficient admissions practices.
7. Health care services: inappropriate hospital size (inefficient use of infrastructure)	Inappropriate level of managerial resources for coordination and control; too many hospitals and in-patient beds in some areas, not enough in others, often reflecting lack of planning for health service infrastructure development	Incorporate inputs and output estimation into hospital planning; match managerial capacity to size; reduce excess capacity to raise occupancy rate to 80-90% while controlling length of stay.
8. Health care services: medical errors and suboptimal quality of care	Insufficient knowledge or application of clinical care standards and protocols; lack of guidelines; inadequate supervision	Improve hygiene standards in hospitals; provide more continuity of care; under take more clinical audits; monitor hospital performance.
9. Health system leakages: waste, corruption and fraud	Unclear resource allocation guidance; lack of transparency; poor accountability and governance mechanisms; low salaries	Improve regulation and governance, including strong sanction mechanisms; assess transparency and vulnerability to corruption; under take public spending tracking surveys; promote codes of conduct.
10. Health interventions: inefficient mix and inappropriate level of strategies	Funding high-cost, low-effect interventions when lowcost, high-impact options are unfunded; inappropriate balance between levels of care and among prevention, promotion and treatment	Conduct regular evaluations; incorporate into policy of evidence on the costs and impact of interventions, technologies, medicines and policy options.

Source: World Health Organisation (2010)⁴

A comparison of India's major health indicators with those of several other countries (Table 2) highlights the need for improving health system capabilities in India.⁶ Moreover, the relationship between increased Government health spending as a percentage of total health expenditure and the corresponding outcomes for

each country deserves closer examination. It is important to note that Brazil, Sri Lanka and Thailand have travelled long and far on the road to universal health care. Annexure I lists additional indicators for various nations in the past decade.

Table 2. Key Indicators: India Compared With Other Countries⁶

Indicator	India	China	Brazil	Srilanka	Thailand
(1)	(2)	(3)	(4)	(5)	(6)
IMR/1000 live-births	50	17	17	13	12
Under-5 mortality/1000 live-births	66	19	21	16	13
Fully immunised (%)	66	95	99	99	98
Birth by skilled attendants	47	96	98	97	99
Health expenditure as percentage of GDP	4.2	4.3	8.4	4.1	4.1
Government share of total health expenditure (%)	32.4	47.3	44	43.7	74.3
Government health spending share of total government spending (%)	4.4	10.3	6.0	7.9	14.2
Per capita spending in US dollars	122	265	875	187	328

**Source: World Health Organisation (2011)⁶*

IMR = Infant Mortality Rate

It is important to note that Brazil, Sri Lanka and Thailand have travelled long and far on the road to Universal Health Coverage. Annexure I lists additional indicators for various nations in the past decade.

b) Strengths and weaknesses of India's health system

The commitment to public provisioning of health services featured in the National Health Policy was a good start. Inadequate resource allocation and poor governance, however, have led to a progressive weakening of services. The substantial development of the private sector has been compensating for the shortcomings of progressively weakening public systems over the years. From 8% in 1947, the private sector now accounts for 93% of all hospitals, 64% of all beds, 80% to 85% of all doctors, 80% of out-patients, and 57% of in-patients.⁷

Private entrepreneurship has covered all aspects of health care markets including health financing, health worker education as well as

health equipment manufacturing and service. While this adds strength to the health system, the lack of a regulatory framework has also led to cost escalation and variable quality in the health services provided by this sector.

Meanwhile, the extensive framework of public systems has succeeded in permeating the entire country, even the many difficult, unreachable areas where for-profit providers would not consider venturing and even the presence of Non-Governmental Organisations (NGOs) is minimal.⁸ State health directorates have evolved robust procedures to recruit personnel, manage cadres, procure equipment and maintain contracts.

India has one of the oldest population stabilisation and family welfare programmes in the

world. Its concerted efforts towards eradicating polio have recorded success in recent years.⁹ The country has created capacity for training and education in health care and related streams and also evolved corresponding regulatory platforms like councils and accreditation boards for various cadres. The overall morale amongst health planners is high in view of achievements like elimination of leprosy at national level, elimination of neonatal tetanus from many states, maintenance of Tuberculosis (TB) cure rate above the global target of 85% and efficient response to avian flu and other international health alerts, among others.¹⁰

However, those strengths coexist with grave weaknesses. The National Sample Survey Organisation report of March 2006 presented the following critical triggers for health sector reform in India:¹¹

- * 18% of all episodes in rural areas and 10% in urban areas received no health care at all.
- * 12% of people living in rural areas and 1% in urban areas had no access to a health facility.
- * 28% of rural residents and 20% of urban residents had no funds for health care.
- * Over 40% of hospitalised persons have to borrow money or sell assets to pay for their care.
- * Over 35% of hospitalised persons fall below the poverty line because of hospital expenses.

- * Over 2.2% of the population may be impoverished because of hospital expenses.
- * The majority of the citizens who did not access the health system were from the lowest income quintiles.
- * India ranks amongst the lowest in the world in public spending on health, yet its proportion of private spending is one of the highest. According to the National Rural Health Mission Framework document, "more than Rs. 100,000 crore is being spent annually as household expenditure on health, which is more than three times the public expenditure on health."⁸
- * Catastrophic health care expenditures are a major cause of household debt for families and a leading cause of poverty in the country.

It is therefore important to identify potential financial barriers, explore options for scaling up public spending and provide a strategy for using public resources efficiently and equitably.

c) Pace of change and interstate diversity in outcomes

Table 3 compares several health indicators across the past decades and paints a picture of definite but unacceptably slow progress.

Table 3. Health Indicators in India, 1951-2009

Indicator	1951	1971	1981	1991	1999	2005	2009
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Birth rate	40.8	36.9	33.9	29.5	26.1	23.8	22.5
Death rate	25.1	14.9	12.5	9.8	8.7	7.6	7.3
Infant mortality rate	148	129	110	80	70	58.0	50.0
Maternal mortality ratio*	1321	853	810	424	407	254	212
Total fertility rate	6	5.2	4.5	3.6	2.9	2.9	2.6

Source: HLEG Secretariat, data assembled from multiple Sample Registration Survey Bulletins (1951-2009)^{12,13}

*Source: Ministry of Health and Family Welfare (2007)¹⁴

However, progress has not been uniform across the country: there are wide interstate variations in each of these health indicators. Although Kerala retains its status as a well performing state (with an infant mortality rate, (IMR of 12 and a maternal mortality ratio, MMR, of 81), Uttar Pradesh (IMR 63, MMR 359), Madhya Pradesh (IMR 67, MMR 269) and Odisha (IMR 65, MMR 258) continue to under-perform.

Some states have demonstrated substantial improvements in health indicators between 2001 and 2008: IMR reductions in this period have been reported in Jharkhand (70 to 44), Chhattisgarh (79 to 54), Odisha (95 to 65) and Rajasthan (79 to 59).^{13,14}

These wide interstate (and even inter district) variations in health indicators provide ground for debate on the determinants of differential performance. Annexure II lists the major health indicators of the various states of the country.

d) Primary health care: A view from communities

Various block-level analytical exercises were undertaken in six districts across the nation by members of the High Level Expert Group (HLEG).^a This enabled the group to gain insight into local contexts that influence access to health care, the role of private providers, the demand for different types of primary, secondary and tertiary care, the growing burden of non-communicable diseases and the need to expand teams of frontline health workers at the village level.

Field studies by members of the HLEG highlighted the following issues that need to be addressed adequately if UHC is to be achieved:

- * The expectations and demands from the health system are not uniform across different states. The resource needs in various settings are accordingly varied.
- * Even from the perspective of basic provisioning of health care services, the gaps are wide: the need is often three to six times greater than the current level of provision. Besides human resources for health, essential inputs such as physical infrastructure, hospital beds, drugs and diagnostics are far below the prescribed norms.
- * The need for a village-level team of community health workers, who serve as a link between the community and the organised health delivery apparatus, was universally articulated.
- * Communities greatly value residential skilled health workers.
- * There is a need to train community workers as true health workers, sensitive to the communities' needs and aspirations.
- * Communities often patronise non-governmental providers who may or may not be formally qualified in delivering health care. It is important to bring these providers into the health system and appropriately address issues of rational drug use, ethical practice, skills improvement and gate keeping, among several other challenges.

a. Analytical exercises were conducted by Dr. Abhay Bang in Gadchiroli district in Maharashtra; Dr. Yogesh Jain in Ganiyari block of Bilaspur district in Chattisgarh; Ms. Anu Garg in a tribal block in Kalyansingpur, Rayagada district in Odhisa; Dr. Nachiket Mor in Pattukkottai block, Thanjavur district in Tamil Nadu; Dr. Leila Caleb Varkey in Palwal, Haryana; and Mr. Amarjeet Sinha in Phulwarisharif block, Patna district of Bihar.

2. Summary of India's health system challenges

- a) The public health system in India suffers from weak stewardship and oversight, HR shortages, weak HR management and ineffective service delivery.
- b) Doctors, nurses and allied health providers are in short supply for the populations they serve. The ratio is often skewed, resulting in the following shortcomings: a) fewer health providers in rural areas, especially in primary health care settings; b) inefficient secondary services in smaller towns; and c) a high concentration of tertiary health care services in urban cities.
- c) The skill mix, autonomy and funding of the medical bureaucracy at the district level need to be augmented.
- d) Initiatives for health need to be coordinated with efforts to address social determinants of health.
- e) Local community and Panchayati Raj institutions need to play a more proactive role in health programmes and their governance.
- f) National health programmes do not comprehensively address morbidities, leaving gaps in critical services. It is imperative for horizontal and vertical programmes to function synergistically.
- g) Public health infrastructure has not been able to maintain basic standards of hygiene, patient comfort and empathetic care. Adequate processes for recording the transactions of citizens with the public systems and ensuring quality of treatment, referral and transport connectivity have not been developed.
- h) Poorly equipped and underutilized facilities continue to function despite limited utilisation, while others are unable to meet demand because of inflexible budgets, limited resources, rising drug costs and supply shortages.
- i) Public health surveillance systems in the country are inadequate to measure and monitor health-related events and develop models for health outcomes in the country. An effective system would systematically collect and analyse accurate health data to develop more robust health strategies to combat disease. In addition, it would also map health needs, making the health system appropriately responsive to delivering care where it is needed the most.^{16,17}
- j) Despite targeted increases in health spending, many states continue to be hampered by poor governance and inadequate planning. The underperforming states will require the largest infusion of resources but also face challenges in making efficient use of the additional funds already available to them.
- k) Referral linkages and follow-up services are very weak, rendering the connectivity between primary, secondary and tertiary services dysfunctional.

3. Rationale for change

a) Need to address health inequities and impediments to universal care

Health equity is a major driver for Universal Health Coverage. India's health system is currently failing to respond to the health needs of poor and vulnerable populations, particularly women and girls, scheduled tribes, scheduled castes, adolescents, migrant populations and peri-urban communities.¹⁸ As Frenz and Vega (2010) have noted,¹⁹ "The idea of UHC loses its

meaning, if it is not accompanied by equity. Equity of access recognises that everyone has a right to health care... Inequitable access means that less advantaged groups use and experience less health care than their needs require, resulting in personal, community and societal health losses."

Bureaucratisation of guidelines and highly centralised procedures are a major impediment to the country's health system, inhibiting flexibility and responsiveness to local diversity and needs. Disaggregated local data leading to needs-based planning of health services and active outreach to disadvantaged populations are essential for promoting health equity. There is, therefore, a strong case to decentralise health systems with an emphasis on resourcing, empowering and enabling communities as a prerequisite for addressing equity.²⁰

The socio-cultural complexities of the country and the presence of multiple dividing lines within communities create additional challenges for the health system in India. Eleven states in the country (including six northeast states) have tribal populations exceeding 25% of the total state population.²¹

These districts need special dispensations of health infrastructure and health HR as well as higher financial allocations. The absence of commercial opportunities in the tribal areas prevents them, unlike most other parts of the country, from experiencing the benefits of economic reforms.

Tribal populations also face pressures of sustainability, shrinking resources and changing social and cultural values.²² If the country is to ensure inclusive growth, the public systems must make special provisions for these populations. A responsive health care system should acknowledge the need to create health HR from within tribal communities, build functional health

infrastructure within tribal areas and establish administrative and technical protocols that are compatible with the social framework of these communities. Increasing the density of well-functioning health infrastructure with appropriate human resources in tribal and other underserved areas should be of highest priority to both policy makers and implementers.

India currently has the world's greatest burden of maternal, newborn and child deaths.²³ In 2008 alone, India lost 68,000 mothers²⁴ and 1.8 million children under the age of five to maternal and child morbidity.²⁵

Thus, in addition to the tribal population, mothers, infants and children constitute the majority of the underserved. There are other vulnerable populations in India as well, such as the elderly and the disabled.

Although disability is often considered a physical condition, it is in fact a normative, cultural and legal construct. According to Census 2001, 21.9 million persons, or 2.13% of the total population, were living with disabilities in India.²⁶ Alternative estimates from various sources with more inclusive definitions of disability indicate a still higher prevalence, in the range of 80 million to 90 million.²⁶

The Government has undertaken various efforts towards improving disability-related health care and wellness services in rural areas. However, access to treatment for persons with disabilities is usually seen only in terms of procuring medication; planners tend to ignore disabled people's other needs, such as physical access (including ramps in medical facilities), complete and accurate information about their conditions in an appropriate format, (e.g., Braille), assistance in buying aids and appliances, (e.g., hearing aids), access to technological advancements in the field, alternative modes of treatment (psychotherapy, physiotherapy, etc.),

health workers trained in disability management, affordable services (especially since a large proportion of disabled people tend to be from lower socio-economic strata), educational and employment opportunities, support for self-help groups and transportation.²⁶

Notable among the disabled are people with mental disabilities who face stigma and discrimination, often because of misperceptions about the nature of mental illness. Failure to integrate mental health into the broader public health agenda only increases their social exclusion.²⁷

Policy makers must give those issues adequate consideration while formulating policies, devising programmes and building facilities.

b) Need to adopt a primary health care approach

"How far can a mother on foot walk with a sick baby? Health care must be available within that distance." - First National Health Congress, China, 1950

Changes in the health system should focus on delivering services as close to the community as possible, driven by a robust system design and clear standard operating procedures, rather than the mere availability of providers. It has been found in public hospitals in Malaysia, Sri Lanka and Thailand that good access to even small facilities, even if not well equipped, helps distribute health benefits more widely.²⁸ Redistribution of health care benefits is greater where there is better access to a range of levels of care. We cannot over-emphasise the fact that service delivery should be re-oriented through a primary

health care approach, encouraging re-allocation of resources and significant strengthening of primary health care provision, including hospital services, so that they ultimately benefit the poor.^{29,30}

The advantages of a primary health care model for health service delivery are as follows:

- * greater access to needed services;
- * better quality of care;
- * a greater focus on prevention;
- * early management of health problems;
- * cumulative improvements in health and lower morbidity as a result of primary health care delivery; and
- * reductions in unnecessary and potentially harmful specialist care.

In addition, primary health care teams promote health equity through increased social cohesion and empowerment. By acting as a navigator through the system to help people get to secondary and tertiary levels of care only when needed, they help achieve overall system cost-effectiveness.³ The evolution of the primary health care approach globally and in India is discussed in greater detail in Box 1.

The absence of a dedicated cadre at the village level, lack of capacity to connect at the last mile and poor responsiveness of public systems to community processes are perceived as major bottlenecks in providing primary health care to citizens.

Box 1. Policy Evolution in the Global Context

The Alma Ata Declaration of 1978³¹ envisaged achievement of health for all through adoption of a primary health care approach. Primary health care was understood as universal health care that is acceptable and affordable to all, comprising the preventive, promotive, curative and rehabilitative aspects of health and an integrated and comprehensive approach to development of health services.

Between 1978 and 2000, the agenda of Alma Ata was substantially revisited. Progressively the strategy shifted from welfare to efficiency, with the Government seeking to give a basic package of essential health services and the World Bank supporting health programmes and reform projects. There was growing realisation that the Alma Ata strategy was leaving many health aspirations of a large population unaddressed. Structural adjustment for macroeconomic stability (involving slashing of public expenditure on social services and imposition of user charges) also enfeebled health services and eroded health equity.

In India, the ICSSR-ICMR joint report of 1981³² proposed an alternative model for development of health services. This model was based on an integrated approach to development - with an inverted pyramid model, decentralisation, participation of communities and voluntary organisations - and intended to replace the existing top-down, curative-oriented, urban-biased health system.

In line with the Alma Ata Declaration, the National Health Policy 1983 aimed to create a nationwide infrastructure of Primary Health Centres (PHCs) and develop a health system based on greater participation of communities and the voluntary sector.

Despite the articulation of political commitment to the Alma Ata goals, the implementation of NHP 1983³³ continued along vertical programmes and curative care. During this period, agencies such as UNICEF and WHO that had championed the primary health care approach shifted their focus to vertical programmes, such as Universal Immunization Program and Child Survival and Safe Motherhood Programme, among others. In India, primary health care almost became synonymous with disease-specific national health programmes with curative content.

The policy discourse in India progressively shifted towards the community needs assessment approach, and eventually the Reproductive and Child Health Programme was launched in 1997. The National Health Policy 2002³⁴ recognised that the Government had neither the administrative nor the financial capacity to attain the Alma Ata goals by itself. The policy called on the Government to create an enabling environment through policy, regulation, outsourcing, concessions and subsidies to the private sector. In 2005, the broader, sectorwide reform agenda was implemented under the National Rural Health Mission (NRHM). Over the six years of implementation of NRHM, much ground for movement towards UHC has already been created.

A timeline of major health system reforms in India and their highlights is attached in Annexure III.

c) Need to provide adequate hospital beds

With respect to secondary and tertiary care, India lags behind most other countries in the number of hospital beds per thousand population, despite having a higher absolute number of hospital beds than most other countries. According to the World Health Statistics,⁶ India ranks among the lowest in this regard, with 0.9 beds per 1000,

far below the global average of 2.9 beds (Table 4). According to the latest National Health Profile (2010),³⁵ India has a current public sector availability of one bed per 2012 persons available in 12,760 Government hospitals, which is approximately 0.5 beds per 1000. This includes Community Health Centre (CHC) beds, but excludes Primary Health Centres (PHCs) and medical colleges.

Table 4. Hospital Bed Capacity, by Country

Country	Beds/ 1000 Population
(1)	(2)
Sri Lanka	3.1
China	3.0
Thailand	2.2
Brazil	2.4
USA	3.1
UK	3.9
India	0.9
Nicaragua	0.9
Togo	0.9
Indonesia	0.6

Source: World Health Statistics (2011)⁶

An alternative analysis of the availability of in-patient capacity, undertaken by Healthcare Management and Consultancy (HOSMAC), presented the following findings.³⁶

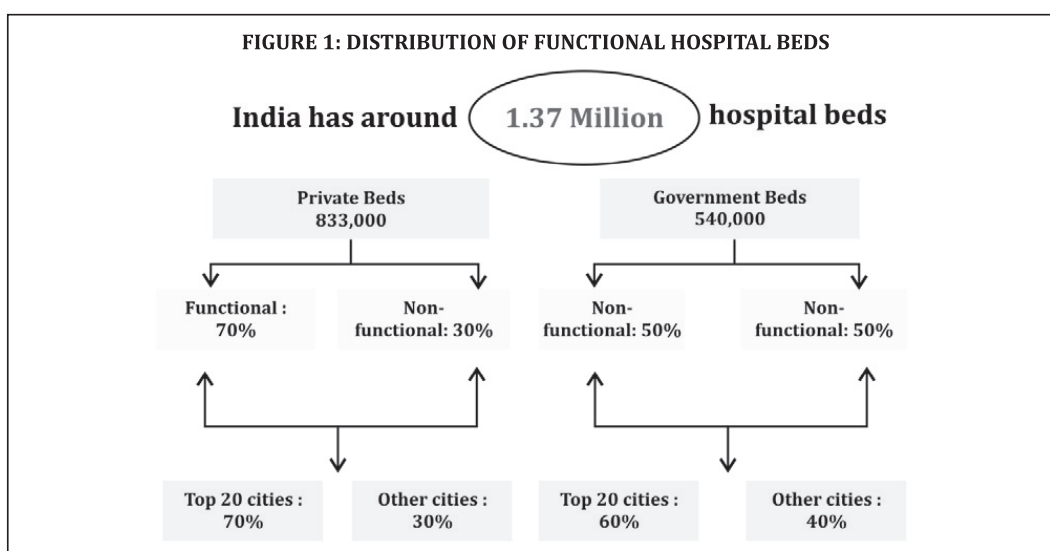
- * The availability of public (government) hospital beds in rural India varies widely, from just 1 per 4471 persons in central India to 1 per 1650 persons in southern India.
- * On average, urban India has 1 private sector hospital bed per 422 persons. There are regional variations: western India has more hospital beds than central India. Central India has the fewest private sector hospital beds in the country.

* Although the inadequacy of beds in rural India forces people to travel to the nearest urban centre for health care, almost 80% of the patients seeking care across the country in private institutions belonged to middle-income and low-income groups, with 50% of all patients in northern and central India belonging to the lower-income category.

* Private sector utilisation is high for institutional and non-institutional care alike, across all income groups and regions. However, the utilisation rate of any hospital depends upon multiple factors, such as chosen doctor practicing in the facility, the image and reputation of the institution, affordability and convenience of access to infrastructure.

* Patients almost invariably depend upon their doctors to make the right facility choice for them, because of persistent information asymmetry.

Figure 1 indicates how many of the beds available in the system are truly functional. A study by Technopak³⁷ estimates that almost 50% of the total public sector beds are currently non-functional, primarily because of health human resource constraints.



Source: Mehta and colleagues [Technopak] (2007)³⁷

d) Need to deliver health care to urban poor

According to the 2011 Census, 377 million Indians live in urban areas, and the urban population is expected to increase considerably by 2021. Rapid urbanisation in the country has also resulted in an increase in the number of urban poor, many of whom live in slums and transient squatter settlements. As indicated by Agarwal (2011),³⁸ in 2004-2005, 80.8 million urban dwellers (25.6%) were below the poverty line. The United Nations projects that if urbanisation continues at the present rate, 46% of the total population will be in urban regions of India by 2030.³⁹

Delivering health care in urban areas is especially challenging. The health of urban populations is systemically and often simultaneously influenced by several social determinants: the physical environment, migration, unhealthful spatial planning, violence, poverty, social exclusion, governance, economic policy and human security. Historically, urbanisation in India has been unplanned, leading to inevitable shortfalls in water, sanitation, housing and infrastructure. Although the Jawaharlal Nehru National Urban Renewal Mission⁴⁰ has attempted to address issues related to urban infrastructure issues, urban health requires immediate attention, especially in the context of migration and urban poverty.⁴¹

Significant intra-urban inequalities in the country have caused the urban poor to suffer disproportionately from a wide range of diseases and health problems. Families with the lowest incomes in urban areas are most at risk for adverse health outcomes; this is especially so for maternal and child health indicators. Ineffective outreach and a weak referral system limit the access of urban poor to health care services: they are 'crowded out' by inadequate urban public health delivery systems where the burden of disease is found to increase on a social gradient of wealth.

The lack of economic resources curtails access to available secondary and tertiary private facilities. In addition, social exclusion coupled with inadequate information and a lack of prescribed standards, even at the primary health care level, puts the urban poor at a greater disadvantage than their rural counterparts.³⁸

According to the National Family Health Survey III (2005-06), the under-5 mortality rate among the urban poor, at 72.7, is significantly higher than the urban average of 51.9.⁴¹ More than 46% of urban poor children are underweight, and almost 60% of poor children do not receive complete immunisation before completing their first year.³⁸ Poor environmental conditions in slums, along with a high population density, make this population especially vulnerable to lung diseases like asthma and TB. The health system planning process in urban areas is more complex, as capacity building for public health activities needs to be addressed by local urban bodies. Primary health care access and delivery of services to the urban poor have been sorely neglected, and the possibility of partnerships with the non-governmental sector, which has a large urban presence, needs to be explored very closely.³⁹

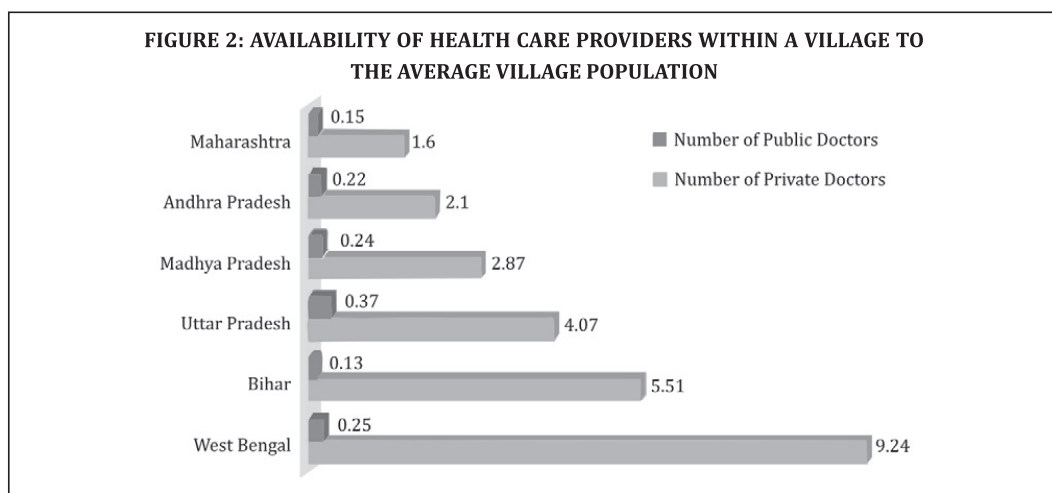
Implementation of the National Urban Health Mission, complemented by the integration of urban local bodies, is required to strengthen the urban public health system and to effectively address multiple dimensions of urban health.

e) Need for oversight and accreditation of service providers

Given the shortcomings of the public health system, at large, India's mostly unorganised, poorly regulated private sector has stepped in to fulfill unmet health needs. In urban areas, according to the National Sample Survey data

cited by HOSMAC, 81% of patients choose private non-institutional care and 62% choose private institutional care.³⁶ A survey conducted in 1600 villages across 19 states under the Medical Advice, Quality and Availability in Rural India

project (2009- 10)⁴² examined the availability of medical providers to average rural households. As Figure 2 indicates, almost 90% of the providers in rural India are private providers, whose training may be formal or informal.⁴³



Source: Kulkarni N.K. (2011)⁴³

Middle-class consumers are now exercising greater choice in health care services. Where possible, they opt for convenience and access over cumbersome and over-crowded public health systems and are willing to pay an out-of-pocket cost. When patients do seek care at a public health facility, there is no guarantee of 'free service,' and user fees, drug costs and corruption impose a financial burden that then makes private health care appear attractive. In a recent survey,⁴⁴ 30% of patients in government facilities said they had had to pay bribes or use influence for basic hospital rights such as out-patient appointments, clean bed sheets and better food.

As Radwan et al. (2005) indicate,¹⁶ one of the biggest problems of India's expanding private sector is the lack of oversight or regulation by the public sector. Absence of licensing and accreditation procedures leads to health services of

widely variable quality, a skew towards urban-centric provisioning, unethical health care practices and corruption in the access and provision of care.¹⁷ An appealingly large number of health care providers and facilities from the private and unorganised sectors are exploiting the lack of regulatory mechanisms and causing poor health outcomes. Private providers range from highly skilled clinicians to totally unqualified quacks. As many as a million unregistered, untrained providers may be practicing in India today, earning the livelihood and status associated with highly qualified doctors.⁴⁵

Despite these deficiencies, this sector continues to be the first choice of health care for most of rural and urban India.⁴⁵ Thus, any solutions proposed for Universal Health Coverage must keep this reality in mind while addressing the human resource gaps between current availability

and what will be needed. The new system must eventually bring these providers into the health system through suitable training, accreditation and regulation after removing those who are fraudulent and dangerous.⁴⁴

f) Need for strong financial management system

The country's health budgeting and costing processes have a direct effect on health financing mechanisms.⁴⁶ The present classification system for health budgets in the country makes it virtually impossible to trace the movement of funds and maintenance activities. The aggregation of budget heads is a constantly moving process, making trend analysis very difficult. Several variations exist across the states in budget lines and fund management, with information asymmetry leading to ineffective and often fraudulent fund management. Given the enormous number of autonomous bodies dealing with this process and the lack of uniformity in their accountability structure, the ability to calculate real costs for the system is a daunting task.

In addition, already weak systems of financial management are administered by personnel with little understanding of financial mechanisms, creating issues in oversight. Poor utilisation of technology and information system continues to bog down health systems, leaving room for unwarranted discretion, fraud and major delays in fund movement across the system.

g) Need to objectively measure and manage quality of care

In an independent assessment of Rajasthan, Bihar, Uttar Pradesh and Andhra Pradesh in 2009, Gill reported on health care quality in terms of both tangible and intangible components.⁴⁷

Whereas the former was assessed through quantifiable measures of health care infrastructure, human resources and availability of medicines, the latter was assessed mainly by measuring patient perception.

Tangible components - electricity supply, quality and quantity of water supply, adequacy of facility infrastructure, distance travelled to health facilities, wait time to be seen by a provider, availability of free medicines, cleanliness of environment, to name a few - contribute to quality of care. The southern state of Andhra Pradesh performed significantly better than the other states on almost all the questions related to infrastructure and patients' satisfaction with their treatment. Patients' dissatisfaction, where present, correlated with the above-mentioned infrastructure inputs: when the tangible components of care were unfavourable, patients' perceptions were negative. Dissatisfaction was reported by 50.9%, 77.2% and 61.4% of participants in Uttar Pradesh, Bihar and Rajasthan, respectively (details are indicated in Annexure IV).

h) Need to address referral services and connectivity issues

Table 5 demonstrates the need for additional investments to be made in ensuring transport and referral connectivity across the nation. Almost a third of the districts lack some form of referral service. Many lives are lost each day because vulnerable populations cannot get to a facility offering any level of health care.⁴⁸

Lack of clear referral norms and logistical complications very often result in denial of care at health care facilities, causing unsatisfactory clinical outcomes.²¹

Table 5. State-Wise Progress of Referral Service Availability

Action Point		India	High Focus, Non North- East (NE)	High Focus, NE	Non High Focus, Large	Non High Focus, Small
(1)		(2)	(3)	(4)	(5)	(6)
			(10)	(8)	(10)	(7)
Districts equipped with:	MMU under NRHM	461	219	87	147	8
	Any other referral service	472	182	61	204	25
MMUs operational in state/UT under		1787	648	98	1033	8
ERS vehicles operational in state/UT		4764	2058	326	2369	11
Ambulances functioning in state/UT (at PHCs, CHCs, SDHs, DHs)		8826	3353	1031	4273	169

State-wise progress, 1.03.2011.

Source: Ministry of Health and Family Welfare (MoHFW) (2011)⁸

CHC = community health centre; DH = district hospital; ERS = emergency referral services; MMU = mobile medical unit; NRHM = National Rural Health Mission; PHC = primary health centre; SDH = sub-district hospital

i) Need to address inter-sectoral issues

Social determinants play a crucial role in enabling Universal Health Coverage and reducing overall health care costs. To bring about equity in health care provisioning for UHC in India, the public health system needs to address multiple issues of population, geographical spread, poverty, malnutrition, regional disparities, capacity constraints, poor sanitation and the lack of inter-sectoral convergence.^{29,49} The role of political will in ensuring inter-sectoral convergence, a necessary condition for UHC, cannot be overemphasised.⁵⁰

4. Recommendations

Recommendation 1: Optimise the health care delivery architecture by providing adequate infrastructure, equipment, drugs, human resources and technology support to respond adequately to Universal Health Coverage entitlements at primary, secondary and tertiary levels (see Figure 3). Prioritise efforts on the under served, tribal and inaccessible areas and the disabled population groups.

a) Village level: At the village level, the goal would be to create a paradigm of good health, wellness and development within the community. A village health team would ensure appropriate focus on primary health care, which should be linked to curative teams at the sub-centre level. We recommend that the village team comprise two community health workers (CHWs), who would have monetary and nonmonetary incentives and receive generic training with specific competencies, plus one Anganwadi worker and a Sahayaka. Function-time profiles for CHWs were drawn based on evidence gathered by SEARCH Gadchiroli. The following six health care components are envisaged for a CHW:

- * maternal and newborn health (7 activities, 62 hours per 1000 population per month);
- * sexual and reproductive health, including adolescent health (5 activities, 63 hours per 1000 population per month);

- * child health and nutrition for children, adolescent girls and women (7 activities, 49 hours per 1000 population per month);
 - * communicable disease control and sanitation (7 activities, 60 hours per 1000 population per month);
 - * chronic disease control (5 activities, 60 hours per 1000 population per month); and
 - * gender-based violence prevention, mental health and health promotion activities (8 activities, 60 hours per 1,000 population per month).
- be expanded to include the village patwari, the chowkidaar, and the school teacher in addition to the existing members.^b
- b) Sub-Health Centre (SHC) level:** The SHC would provide curative services as close to the community as possible. Each SHC should cover a population of 5,000 (3,000 in tribal and inaccessible areas) or a Gram Panchayat (using mixed criteria of location, travel time, population, disease profile, health indicators and epidemiology, etc.). Each block would typically have about 20 Sub-Health Centres, but coverage should be expanded where feasible.

In addition to those preventive, promotive and basic curative activities, CHWs should play lead roles in social mobilisation and community participation. Currently, part-time volunteers called accredited social health activists perform such functions, each covering on average a population of 1000 people. With the recommendation for doubling the number of CHWs and deploying CHWs in high-need urban habitats, the total estimated number of CHWs is 20 lakhs. The auxiliary nurse midwife (ANM) at the sub-centre should provide outreach to village health teams, and trained traditional birth attendants may also be called on for support.

The village team should seek to maintain free, 24x7 telephone and internet connectivity to its jurisdictional health sub-centre. A demarcated area should publicly display educational and behavioural change messages and information on community meetings. The village health and sanitation committees set up under NRHM should

Each SHC should have one fully functional observation bed to evaluate, stabilize and monitor a pregnant woman if needed. The SHC should be staffed with a mid-level practitioner with a Bachelor of Rural Health Care (BRHC) degree or equivalent training, two ANMs, one male health worker and one multi-task helper for lab work, store upkeep and dispensing.

The SHC should be located in a Government building with full capability to electronically feed health and wellness data into a web-based health management information system. The SHC should undertake line listing of beneficiaries (household registration of populations in catchment areas) and should be the locus for training of CHWs and volunteers. The SHC would be the custodian of local untied funds, undertake and oversee daily out-patient services and list its jurisdictional families for services. Fully functional SHCs should be in place in accordance with recommended norms by 2020.

^b Present composition of VHSC: The Village Health and Sanitation Committee would consist of Gram Panchayat members from the village; CHW, Anganwadi Sevika, ANM; SHG leader, the PTA/MTA Secretary, village representative of any community-based organisation working in the village, and a user group representative. The chairperson would be the Panchayat member (preferably a woman or SC/ST member), and the convenor would be the CHW.

c) Primary Health Centre level: The PHCs should be the first level of access to the services of allopathic doctors. As the coverage of Sub-Health Centres (managed by the BRHC cadres) expands, the PHCs should become the second port of call and are expected to be functional on a 24x7 basis. PHCs should cover an average population of 30,000 (20,000 in tribal and inaccessible areas). A block may typically have four PHCs. Coverage may be expanded as needed for UHC.

We recommend that a PHC have no fewer than six functional beds, and more as needed. In addition to the BRHC and various administrative staff, the PHC would have general-duty medical officers (holding degrees of Bachelor of Medicine and Bachelor of Surgery) and teams of five nurses along with allied health providers, including two pharmacists, two lab technicians, an accounts assistant, and a data entry operator. A qualified provider should provide dental services once a week at each PHC. The staff from the corresponding CHC would ensure full availability of services at the PHC through rotational staffing as determined by patient load.

24/7 electricity, telephone, mobile phones and computers with internet connectivity should be available at the PHC. The PHC should also be the hub for local communications and reporting, storage and distribution of drugs and supplies, adolescent and school health services, report consolidation in electronic form and performance measurement and monitoring and evaluation of village and sub-centre functions.

d) Community Health Centre level: The CHCs would staff essential specialists, offer in-patient services, and act as 24x7 functioning referral centres for more advanced care. The CHC would provide emergency obstetric care, appropriate pediatric specialist care, surgical services,

a sick newborn unit, trauma care, a well-equipped lab, AYUSH services and connectivity for higher-order diagnostics.

One CHC should be located in each block (typically for a population of one lakh), and each CHC should have no fewer than 30 beds by 2017. As needed, all CHCs should expand to 100 beds by 2025. Each CHC should have a direct referral relationship with all PHCs in its jurisdiction and should work as the gatekeeper to higher levels of services. The office of the block medical officer could be co-located at the CHC. A Rogi Kalyan Samiti will ensure the involvement of the Central Statistics Office and guarantee that the core package of services is available at every CHC.

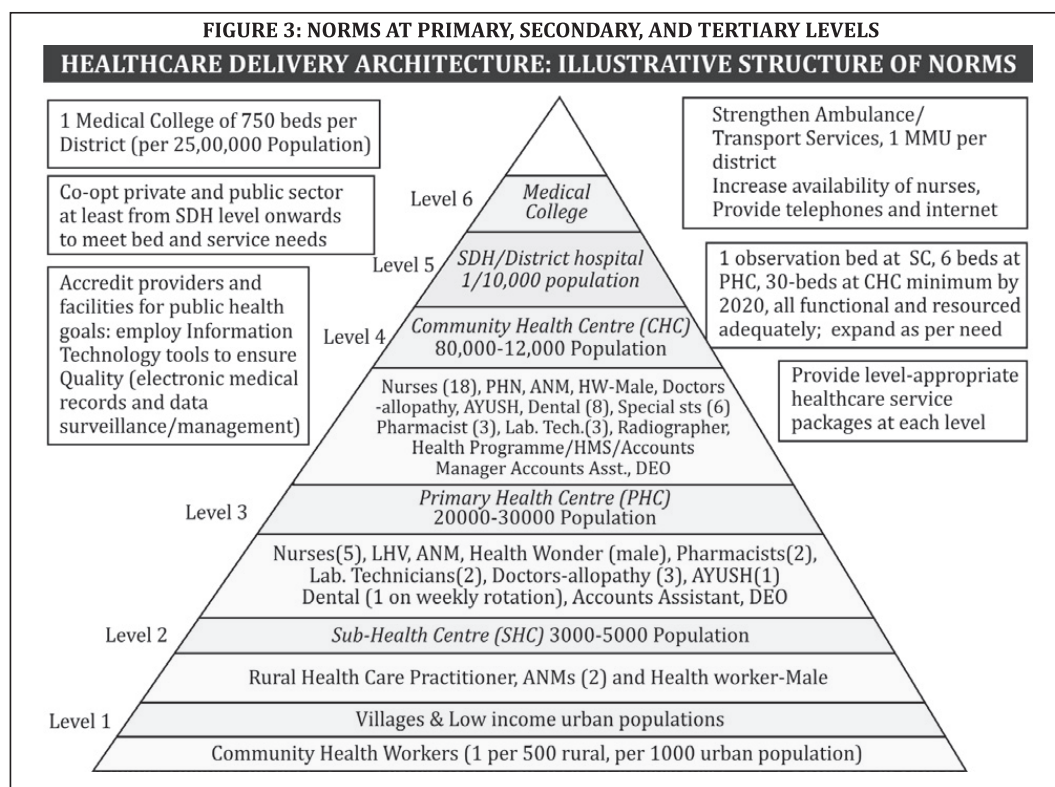
e) District health services: Under the envisioned UHC framework, the District Hospital (DH) becomes a major centre of health care delivery and health professional training, both of which will be attuned to the needs of that district while conforming to the national standards. With an adequately equipped and suitably staffed DH, around 90% of the health care needs of the people within that district should be met; only a small number would need referral to the higher level tertiary care centres. This would require an upgrade of district hospitals and sub-district hospitals as a high-priority activity, over the next five years, alongside the strengthening of primary health care services.

District health services would have three pillars; the clinical care pillar under the Civil Surgeon, health HR development under the District Health Knowledge Institute, and a public health pillar under the District Public Health Officer. The District Health Knowledge Institute (DHKI) may be mandated to run a BRHC college, nursing school, ANM training centres, district training centres for miscellaneous training and a resource centre equipped with computers, information resources and telemedicine capability. This may

be managed through a partnership with universities. The public health pillar would be a purely government function, but delivery of health service could include special facilities created with pro-poor government private contracting.

The district programme management unit at the DHKI should support the public health arm

and be responsible for management information systems, financial management reports and district health reports. It should develop an integrated district health action plan containing a long-term vision and annual prioritisation, and seek appropriate approvals. This arm, at the district level, should also publish annual district health accounts.



Source: HLEG Secretariat

The district level health facility should be a 24x7 functioning referral centre and training school for BRHC, CHWs, ANMs and staff nurses. Larger DHs could also be medical college complexes. The district public health officers and programme managers should be qualified public health experts, and the other government providers (medical and allied health providers)

should be managed under a district cadre. Every district should have a fully functioning DH in place by 2020.

f) Establish referral protocols and transport connectivity to and between facilities in every district by 2020. Every district should have at least one fully equipped, fully staffed Mobile Medical

Unit (MMU) and an adequate number of ambulances in place by 2020. All MMUs and ambulances should be fully equipped with basic life-support drugs and devices and phone connectivity to higher-order referral centres, up to medical colleges. Staff in MMUs should be trained to stabilize and manage basic emergencies, especially normal deliveries and cardiopulmonary resuscitation.

In vulnerable areas, MMUs should have all basic diagnostic equipment, supplies, medicines and staff capabilities to perform minor surgical procedures, in addition to life-saving capabilities.

g) Evaluate underserved and inaccessible districts and their existing functional health facilities and increase number and type of new health care institutions.

The vulnerability index is a simple yet practical tool to estimate health care delivery need based on access. The index should take into account variables such as the percentage of tribal and hilly areas, seriousness of political extremism and related security issues, average travel time to health care facility by foot or other modes of transport, density of health workers given the population density and geography, frequency of natural disasters, and difficulty of the terrain. The decision to establish new health facilities should prioritise areas deemed inaccessible and underserved, based on several criteria that extend beyond merely the population size.^{21,48} A sample tool is attached as Annexure V.

h) Ensure that health and supportive services for persons with physical and mental disability are integrated at all levels into UHC.⁵¹

Some promising interventions currently in place address mental and physical disability in the country. These include programmes on improved nutrition to address iron, vitamin A and iodine deficiencies; efforts to improve reproductive,

maternal and child health care; and road-traffic initiatives to prevent accidents leading to disability. Poor performance indicators in these areas present major obstacles to the overall prevention of disability in India.²²⁻²⁴ Reasonable physical access measures should be created to afford disabled people better access to health care facilities. Failure to integrate mental health into the broader public health agenda only increases the social exclusion of people living with mental illness. There is thus a need to combat the stigma associated with mental illness through awareness-building activities, which need to be expanded beyond current levels. This should be coupled with inter-sectoral collaboration and better capacity-building efforts. Moreover, self-help and psychosocial support groups need to be encouraged and empowered. Psychosocial counseling should be made available and accessible for other patient groups and vulnerable populations as well, (e.g., HIV/AIDS counseling, women, the disabled, the elderly). The goal would be to systematically integrate mental health services into primary care, in accordance with WHO recommendations.²⁶ All disability-related interventions should be resourced adequately and evaluated frequently to measure progress towards goals.

i) Address informal provider quality

At a minimum, every unqualified or informal provider should be made aware of when not to prescribe or treat and instead refer a patient to the closest higher-level facility. If managed well, these providers could potentially support the system at the ground level, provide forewarning in case of mass disease breakouts, and help with community awareness. Formerly unregulated private sector providers could be integrated into the health system at the primary health care level through appropriate training, accreditation and licensing. Those providers who wish to upgrade their skills by applying for BRHC or other health courses could be supported by the village and

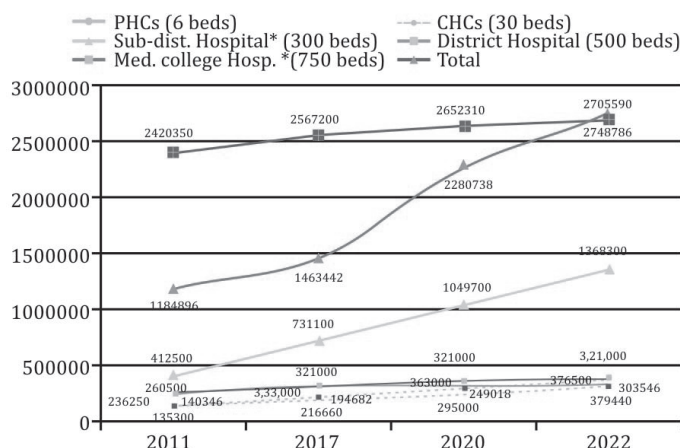
district leaders, with incentives such as a position in the village health and sanitation committee, among others.

Recommendation 2: Earmark resources for health service entitlement packages at each level to include timely preventive, promotive, curative and rehabilitative interventions.

To develop an entitlement package of health care services that would truly have universal reach, we examined national and international

research on eight existing UHC packages.⁵²⁻⁵⁷ Prevalent public health issues in local communities, particularly those in underserved areas such as *Gadchiroli* in Maharashtra, *Ganiyari* in Bilaspur, Jharkhand and *Kalyansingpuri* in Odisha, were considered. Insurance schemes such as the *Rashtriya Swasthya Bima Yojana*,⁵⁸ the *Arogyashri* scheme in Andhra Pradesh, the *Kalaingar* scheme in Tamil Nadu and the *Apka Swasthya Bima Yojana*⁵⁹ from Delhi were also examined. Where available, incidence data from these health insurance schemes were reviewed.

FIGURE 4: PROJECTIONS FOR ACHIEVING PROVISION OF 2 BEDS PER 1,000 POPULATION BY 2022



Source: HLEG Secretariat

The packages recommended by this report have been developed and provisioned as follows:

All preventive and promotive aspects of health care, such as antenatal checks, screenings, counseling, minor curative services and prescriptions, should be guaranteed at the Sub-Health Centre (SHC) and then appropriately referred to the closest PHC. The packages have been labeled on the basis of the recommended

levels of care such that services required at the village would constitute a *level 1 package*, services at the sub-centre would be a *level 2 package* and services at the PHC would consist of a *level 3 package*. The *level 4 package* has a combination of primary and secondary care services for which primary health care components are available at levels 1 to 3 and secondary care is guaranteed at the CHC level. Finally, the *level 5 package* includes secondary and tertiary level services that would be guaranteed at the DH level upwards.

The aim of this approach is to ensure a specific package of services at every level, with enough overlap to ensure care continuity. Designed to be flexible and progressive, the packages reflect depth of coverage across a range of interventions and include management and rehabilitation for various conditions. Quality standards and care protocols need to be developed and followed for all package components. A list of exclusions of health events at various levels will also have to be developed, based on desirability and necessity criteria.

It is important to note that the recommended entitlement package is intended to be illustrative rather than prescriptive. These are examples, and the services included are not exhaustive. We recommend that an expert committee set up by the Ministry of Health and Family Welfare periodically determine the essential health package for UHC. (Detailed illustrative packages and corresponding levels of facilities are enlisted in Annexure VII.)

Recommendation 3: Expand functional bed capacity to 2 beds per 1000 population by 2022

Based on population projections and required HR-to-population ratios, we estimated the number of hospital beds that would be required by 2022. The exercise included sensitivity analyses of estimates for 1.5 beds and 1 bed per 1,000 population norms.

Given a population of 1,353 million by 2022, the HLEG estimates that 27.05 lakh beds will be required to achieve 2 beds per 1000 population, shaped by progressive increases in bed functionalisation at various facilities (see Figure 4). Based on the population norms discussed in Recommendation 1, the size and spread of India's population will require a physical infrastructure

of 3,14,547 SHCs, 50,591 PHCs, 12,648 CHCs, 4,561 SDHs (201-300 beds) and 642 DHs (301-500 beds).

These basic infrastructure norms and hospital bed projections account for greater coverage in tribal and inaccessible areas, which account for about 25% of the total population,²⁰ and assume that the private and public sectors will together provide public hospital beds, starting at least at the sub-district level.

a) Leverage public-private partnerships (PPPs) for health system reform through statutory regulation and innovative models.

Several experiments suggest that contracting out health care services can improve care in secondary and tertiary levels.⁶⁰

Given that the private sector provides 80% of health care services in India and low-income populations currently choose private over the public care, despite unaffordable prices, India's model for UHC must involve the private sector in its delivery design.⁶¹ The success of such an arrangement will depend upon the public sector's ability to incentivise private providers to be contracted into the public scheme while holding them accountable for quality and service provision at the same time, which requires a particular set of institutional characteristics (see Box 2).^{49,62}

Although building PPPs will increase capacity in the health system, the private and public sectors are not naturally compatible. Vested and often competing interests between parties impede progress, and different operational norms and priorities increase delays. To ensure successful PPPs, we must do the following:

- * adequately synchronize the public and private sectors to achieve cooperative operability by plugging existing gaps in health systems policy documents, with clear

delineation of procedures, protocols, regulations, incentives and mechanisms to support the partnerships;⁶¹

- * enable government functionaries to structure, regulate and monitor PPPs;
- * prevent vested interests (of either party) from creating legal bottlenecks that delay progress or defeat the public purpose of the partnership; and
- * address evidence-based apprehensions about the model, 60,61,63 such as the adherence of PPPs to national health programme protocols, the accountability of health providers in the private sector and weak or ineffective regulation of the private sector.

The above issues notwithstanding, the governments of Tamil Nadu, Gujarat, Karnataka and Andhra Pradesh have demonstrated that PPPs can contribute to expansion of health care coverage. A 2010 KPMG study⁶⁴ has shown that the Aravind Eye Center and Narayana Hrudayalaya - two successful PPPs - improved care quality and efficiency while also reducing cost per client. An illustrative list of PPP models for primary, secondary and tertiary levels of care is provided in Annexure VI.

The High-Level Expert Group favours contracting in of the private sector to deliver the National Health Package (NHP), through mechanisms described in the Chapter on Health Financing and Financial Protection.

Box 2: Illustrative Model

The World Bank Report on Brazilian Health care notes the following characteristics of publicly- held private institutions:

1. Essentially public institutions but legally independent from government
2. Legal obligations/mandate specified accountability embedded in government-controlled board structure
3. Direct preservation of public mission

Additional accountability arrangements:

1. Management contract (with robust monitoring and enforcement)
2. Performance-based payment system
3. Independent audit by regulators and/or external monitors

All staff employed by hospital (not government)

1. Selection of managers by board, usually from private sector
2. Generally subject to civil service system
3. Examples of successful models are available globally, such as Colombia (ESEs), NYC, UK Foundation Trusts, to name a few
4. Co-operative hospitals in some States of India also provide examples

Source: Forgia and Couttolenc (2009)⁶⁵

b) Private sector providers, beds and facilities should be contracted into district health systems and subsequently linked to district accountability mechanisms, such as health councils, to meet rapid capacity increases that UHC will require.

Considering the projected growth trajectory of public and private sectors in India, the HLEG recommends a target lower than the current global average of 2.9 beds per 1000 population.⁶ The HLEG also anticipates that a comprehensive primary health care approach to universal care with emphasis on early interventions, prevention, curative and promotive health practices, as well as the growing technology-aided trend towards shorter hospital stays and more day care, will ultimately reduce the requirement of hospital beds. A norm of 2 beds per 1000 population should therefore suffice. A recent Technopak study indicates that developments in high-tech diagnostics and interventions will drive a shift in health care delivery from predominantly in-patient settings to predominantly out-patient settings.³⁷ The study predicts that 75% of all surgical procedures in India in 2020 will be conducted in out-patient ambulatory surgery centres. If out-patient procedures cost 47% less than their in-patient counterparts - as some calculations suggest - this shift could theoretically double the reach of health system resources.

Recommendation 4: Position norms for quality assurance of facilities and services and leverage use of standard operating procedures, technology and management information systems in monitoring and continually improving standards of care.

Progressively, all public (and co-opted private) health facilities should undergo a licensing process valid up to three years determined by regular accreditation surveys to ensure compliance with the Indian Public Health Standards, as a baseline standard as well as additional stipulations of being contracted in (following state norms, either as sole NHP providers or adopting the 75% in-patient/50% out-patient NHP provision requirement).⁶⁶ This process should become universal by 2017.

a) Identify public facilities that do not have the resources to meet prescribed quality guidelines and ensure shortages are appropriately corrected. The facility's accreditation status should be prominently visible to the public.

We recommended that all public and private facilities responsible for delivering the UHC package should adhere to the Indian Public Health Standards (IPHS). This will be the starting point of large-scale commitment to quality assurance in public health care delivery.

b) Adopt electronic medical records by the year 2020. Form a state-level accreditation agency and a central coordinating body to oversee operations and administrative protocols of health care facilities. This body would be called the National Health and Medical Facilities Accreditation Unit (NHMFAU), under the National Health Regulatory and Development Authority (NHRDA).^c

^c A detailed comparative review of three major facility quality criteria setting agencies was performed. These were the Joint Commission International (JCI), the National Accreditation Board for Hospitals and Health care providers (NABH) and the Indian Public Health Standards (IPHS). IPHS has a set of base quality standards, but these are not necessarily accreditation criteria, unlike the JCI or NABH. Accreditation criteria to certify health care facilities should be developed.

A key feature of the Universal Health Coverage plan would involve efficient use of health systems and management information systems to be employed at all levels of health care.

NHMFAU should be mandated to oversee the following:

- * Definitions of standards for health care facilities to qualify for different levels of the pyramid. Health care facilities will be required to receive NHMFAU accreditation every three years, based on a score on how well the facility meets the standards of health care set for their level of care. The score will provide the health care facility with an objective score of performance and comparison with peer facilities. There will also be a process to redefine the universal health entitlement packages according to the needs assessed by a structured review of patient volumes and disease burden.
- * Adoption of health information systems and defining standards for use of resources and health management systems infrastructure. NHMFAU will promote use of health systems management information systems and will define stages of use organised over time. Stage I will cover years one to two after introduction of health management information systems, Stage II will cover years three, four and five after introduction, and Stage III will cover criteria after five years. Monitoring protocols and surveillance protocols will be developed and implemented.
- * Establishment of criteria and a process to certify vendors' health system management technology that can support meaningful use criteria. NHMFAU will work on defining a process for vendor certification according to meaningful use criteria and vendor product applicability to diseases of national priority.
- * Information documentation, use and exchange among health care centres. NHMFAU will develop a standards and interoperability framework to harmonize existing standards and improve sharing of standards across different organisations and federal agencies, making it easier to broaden interoperability through shared standards for data and services.
- * Clinical interoperability of information to enable seamless transition of patient data between health care facilities. Best practices will be defined and disseminated.
- * Knowledge and feedback cell. Drawing from international best practices,⁶⁷ NHMFAU would be responsible for analysing system bottlenecks and process breakdowns to the last level of detail on an ongoing basis, analysing group trends where possible, and working with the leadership and stakeholders at each level to continually correct issues.
- * Definition and promotion of standards of patient safety, privacy and ethical use of patient data. NHMFAU will develop an accreditation process, standards and monitoring protocol to ensure patient privacy and ethical use.
- * Flow of information between allied agencies and health care facilities. NHMFAU will develop procedures to monitor exchange of information with public health agencies, research organisations, regulatory authorities and educational institutes.
- * Information analysis, coordination of health care strategies and work towards real-time epidemiology.

- * NHMFAU will work with other facilities and serve as a regional information exchange hub to allow for epidemiological analysis and real-time surveillance services.
- * Promotion and documentation of health care innovations in health care facilities. NHMFAU will be mandated to document innovations in the health care delivery seen in different facilities and develop a national database of health care innovations that are known to improve patient care.

The governing body of NHMFAU at the state level should include representatives from the health systems management cadre at the district level, community participation from CBOs and NGOs and public health officials.

Recommendation 5: We recommend an urban UHC system that offers the defined package of services at each level and that addresses the health needs of urban slum-dwellers, the urban poor and the urban middle class. Cities and towns should have the flexibility to design such a system that includes community based urban nurse practitioners, appropriate service delivery channels and provider. Special focus shall be paid to population density, better transport and network connectivity, increased provider coverage (especially in the private sector), greater access to human health resources and greater healthseeking behavior.

a) The new urban health system must have clearly designated and closely linked primary, secondary and tertiary health care facilities, with a defined package of services at each level.

The location of urban health centers and their coverage areas should be mapped spatially so that effective access can be determined. For under-served rural areas, a vulnerability analysis should be undertaken, particularly in slums, to prioritise health care services and delivery at appropriate facilities. A sample health vulnerability assessment tool is provided as Annexure VIII.

Facilities should be designated into tiers or levels of care (I, II, III), transfer protocols created and technical and administrative protocols standardised.⁶⁸ This would reduce the huge burden on the larger tertiary-care facilities, which often end up serving a disproportionate amount of outpatient-related primary care needs of the urban population. A tier 1 facility could deliver all aspects of the entitlement package at a PHC level and below (private clinics, dispensaries), tier 2 would be equivalent to a rural CHC or DH (private nursing homes, maternity homes), and tier 3 could focus on higher-order secondary and tertiary-care services (medical colleges, super specialty public and private hospitals). Tables 6 and 7 present the norms for the urban family welfare centres and urban health posts as proposed by the National Urban Health Mission (NUHM).⁶⁹

Table 6. Staffing for Urban Family Welfare Centres

Category	Population Coverage	Staffing Pattern
Type I	10,000 - 25,000	1 ANM; 1 FP field worker (male)
Type II	25,000 - 50,000	1 FP Ext. Edu. or LHV in addition to the above
Type III	Above 50,000	1 MO (preferably female), 1 ANM, 1 storekeeper-clerk

Source: Ministry of Health and Family Welfare (2010)⁶⁹

ANM = auxiliary nurse midwife; MO = medical officer, LHV = Lady Health Visitor

Table 7. Staffing for Urban Health Posts

Category	Population Covered	Staffing Pattern
Type A	Less than 5000	1 ANM
Type B	5,000 - 10,000	1 ANM, 1 multiple worker (male)
Type C	10,000 - 20,000	1 ANM, 1 multiple worker (male)
Type D	25,000 - 50,000	1 MO (female), 1 PHN, 3-4 ANMs, 3-4 multiple workers (male), 1 Class-IV woman

Source: Ministry of Health and Family Welfare (2010)⁶⁹

ANM = auxiliary nurse midwife; MO = medical officer; PHN = public health nurse

- b) The HLEG endorses the goals envisioned by the National Urban Health Mission to improve the efficiency of public health systems in cities by strengthening primary urban health care and infrastructure and designated referral facilities through the following criteria:
- * The NUHM initiative should provide flexibility to states to choose which model suits the needs and capacities of regional actors to best address the health care needs of the urban poor. While strengthening public sector health services, states should also be free to choose from a range of partnerships with other categories of providers to ensure adequate coverage and quality of services.
 - * For strengthening primary public health systems, NUHM proposes a broad framework for rationalising available resources and human resources, improving access through communitised risk-pooling mechanisms and enhancing the participation of the community in the management of health care service delivery through a community link volunteer (an urban social health activist). The HLEG proposes utilising community health workers and public health nurse practitioners to perform these functions.
 - * The NUHM also advocates the establishment of Rogi Kalyan Samitis, ensuring effective participation of urban local bodies and making special provision for including the most vulnerable amongst the poor along with the development of an e-enabled monitoring system. The quality of the services provided should be constantly monitored for improvement (IPHS/revised IPHS for urban areas).⁶⁹
 - * All services delivered under the urban health delivery system should be preferentially targeted to the most vulnerable urban populations (slum dwellers, migrants, the working poor and homeless).
 - * The urban health delivery system should ensure inter-sectoral convergence by various local urban governing bodies with strong emphasis on accountability and transparency in urban governance.
 - * The architecture of the urban health delivery system may need to be substantially different from the rural health delivery system. The requirements of tier II and tier III cities will also be substantially different from the needs of tier I cities or metropolises. It would be therefore necessary to design several menus and models for the various

cities in the country. It is also critical to set up better systems for the transfer of patients between health care facilities, to be coordinated by the rural and urban health departments in surrounding towns and cities.

- * It is important to acknowledge the diversity of available infrastructure and facilities in cities along with flexible city-specific urban planning by urban municipalities. Synergies with other programs with similar objectives like Jawaharlal Nehru National Urban Renewal Mission, Swarna Jayanti Shakari Rozgar Yojana, and Integrated Child Development Services (ICDS) to optimise outcomes is essential.

- * The NUHM proposes to measure results at different levels with long term as well as intermediate term view, an approach endorsed by the HLEG

Recommendation 6: Structure transparent, performance-based systems of budgeting and IT enabled financial management directed by qualified financial professionals with corresponding accountability and audit protocols.

- a) Position financial management teams at appropriate levels, supported with integrated professional development system inclusive of training, mentorship, continuing education, refreshers and long- term engagement.

Day-to-day bookkeeping and accounting procedures should be strengthened and periodic financial review processes instituted. Protocols for concurrent audit (both financial and performance audit), reconciling financial and fiscal progress against plan and periodic public disclosure should be established. Appropriate vigilance mechanisms are needed at all levels. Respective health care facility managers should

review utilisation of funds against services provided and make mid-course corrections as necessary.

Evidence from Ontario, Canada, shows that such a process helps health system managers understand the financial and physical line-item of resources spent and services demanded, reconfigure resources based on staff availability or even decide to close down a service entirely. They can also regulate the prescription of drugs or diagnostic tests that are found to be unwarranted or excessive.⁷⁰

- b) Rationalise delegation of financial power rules.

The utilisation of funds at any level of care must be accompanied by the appropriate sanction or order detailing how they are to be disbursed to ensure accountability and transparency. This will significantly improve the fund absorption capacity in the system and reduce the turnaround time of financial reporting.

- c) Establish a robust financial information system that is accessible to public and provides real-time data on government expenditure.

A strong financial management system is useful in providing timely and accurate information to policy makers and implementers at all levels and greatly improves the quality of decision-making. An exemplar is Brazil, which demonstrated great results in implementing an IT-based financial information system before Universal Health Coverage was announced as a public entitlement.^{71,72} The main objective of the system is to capture even the smallest public transactions electronically, thereby ensuring transparency, accurate record keeping, accountability and public oversight at all times.

d) Adopt cutting-edge technologies to establish standardised procurement, logistics and supply chain protocols, similar to the Tamil Nadu Medical Supplies Corporation model.

Taking lessons from the banking industry, the Tamil Nadu Medical Supplies Corporation (TNMSC) has transformed the drug distribution system in the state over the past decade. Stringent quality control to keep out spurious drugs and a robust inventory management system, aided by the smart use of technology and a tightly controlled demand-supply cycle for drugs at each health facility, are the hallmarks of the Tamil Nadu model.⁷³

Transparency in the process at all times and zero tolerance for supplier complaints contribute greatly to its success.⁷⁴

A central drug procurement proposal is already being developed so that this success can be replicated nationwide. This centralisation process should learn from both the strengths and weaknesses of the models implemented in Tamil Nadu and other states so that ultimately, a best-fit model is implemented across the country.

Recommendation 7: Establish legal provisions, policy frameworks and changes to health governance structures to define decision-making responsibilities and authorities between sectors.

We recommend the establishment of inter-sectoral empowered governance structures at each administrative level as follows:

- * A sanitation and health committee at the village level that comprises existing members as well as an ANM from the health department, an Anganwadi worker from

ICDS, a schoolteacher from the education department and village patwari from the revenue department.

- * Appropriate block-, district- and state-level structures consisting of corresponding-level representatives handling collateral social determinants of health, such as rural development, Panchayati Raj, education, agriculture and environment.
- * At the national level, a standing committee with a dedicated secretariat, comprising senior representatives from all relevant departments, to oversee the implementation of UHC. The existing Central Council for Health and Family Welfare should oversee the role of its secretariat.

The governance reforms necessary for UHC are essential but also the most difficult to implement. Strong stewardship and effective governance are critical to ensuring UHC. It is crucial to develop standards for the health directorates and health departments at central as well as state levels to develop adequate capacity and expertise to steer the difficult task of governance reforms.

Governance structures and reforms may not have a large budgetary footprint. However, appropriate delegation of financial power is required, along with financial vigilance and accountability. Over the Twelfth Plan period, the details of the accreditation agency must be worked out through wider discussions. This agency should be set up with an appropriate legal mandate to undertake discussions on other legal and policy components. Community oversight, ensured through publicly mandated and mentored initiatives, is imperative to ensure progress (see chapter on Community Participation and Citizen Engagement).

a) Reconfigure national health programmes⁷⁵ to ensure collaborative vertical efforts alongside health system strengthening at horizontal levels.⁷⁶ Where gaps exist, institute appropriate additional NHPs to ensure focused efforts in addressing unmet health needs.

The NHPs were established with the goal of combating public health challenges with the largest epidemiological footprint. The strategy of deploying narrowly defined, vertical programs to meet the biggest health challenges has been in keeping with the globally accepted public health theory of the past decades. These programmes are completely under the management and jurisdiction of the central government, while their ground-level implementation is through the health care delivery systems of the individual states.

Health system reforms undertaken in India in recent years have improved the efficiency of the vertical disease control and eradication programs. However, it may be necessary to reconfigure programme design to facilitate faster realisation of the benefits of systemic corrections. Expanding the role of CHWs and other community-based institutions in the programmes, adoption of decentralised procurement of supplies and medicines, development of cross-linked training programmes, informational and educational campaigns and management information systems across several NHPs can help improve the efficiency and optimise the deployment of resources. At the same time, the need for integration of several health programmes and the launch of NRHM as a unifying platform make it necessary to ensure greater linkages between the existing programmes.

The Government has expanded the range of the NHPs substantially to include oral health, stroke management, cardiovascular disease, diabetes and mental health, but several other areas of public health are vying for focused

intervention. As these needs are being addressed, care must be taken not to fragment the health system but rather to consolidate it through the UHC design.

5. Implications of recommendations for stakeholders

a) For policy makers

- * Planners, parliamentarians, administrators and technical experts will all need to jointly evolve methods to reprioritise and reallocate the deployment of developmental funds in service of the goals of UHC.
- * They will also need to reconfigure governance structures and functions and ensure comprehensive intersectoral communication, cooperation and prioritised decision-making.
- * Inter se responsibilities between the centre, state and local self-government institutions will have to be redesigned to ensure the desired outcomes.

b) For the Government

- * Strengthening of health directorates, including adequate resourcing, will be essential.
- * Sturdy oversight and monitoring mechanisms should be established and appropriate corrective measures taken to ensure accountability at all levels and enhance the credibility of public systems amongst the people.
- * The real delegation of administrative and financial powers down to the village level institutions is the acid test of an empowered health system.

- * Administrators should be more proactive and, in general, much more open to accepting new technologies in the dynamic and rapidly evolving health care sector.

c) For the community

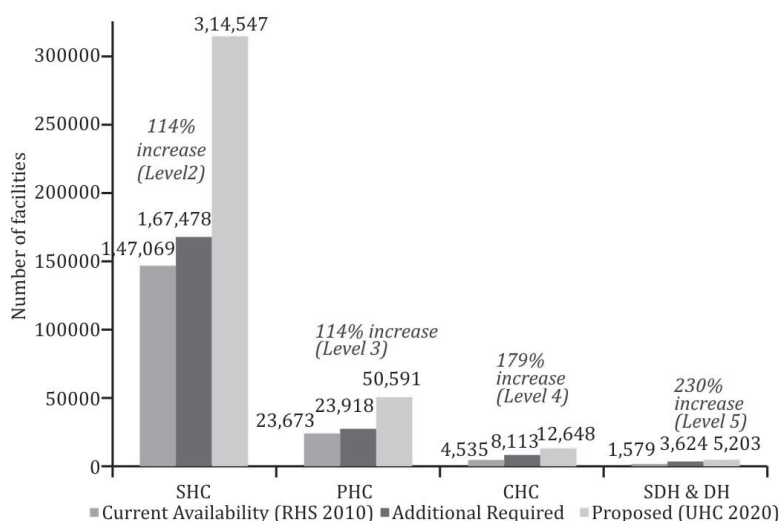
- * The concept of UHC invites communities to play a lead role in ensuring equitable and accessible care. Communities need to be conscious of their rights, articulate their concerns and actively participate in the change process.
- * UHC, when achieved, will lead to a better quality of life for the citizens of India and improve our human development index

ranking. Citizens will have to commit to health-seeking behaviours and demand opportunities to make positive changes in lifestyle, actively contributing to the goal of achieving health for all while protecting their personal health.

6. Financial implications of key norms

We recognise that the Planning Commission will need to increase investment significantly over the next few plan periods to achieve and implement UHC. Based on the nature of our suggested reforms and in line with our core philosophy of primary health care, we recommend prioritising spending at the sub- centre and DH level.

FIGURE 5: PERCENTAGE INCREASE IN PUBLIC INFRASTRUCTURE REQUIRED ACHIEVING UHC BY 2020

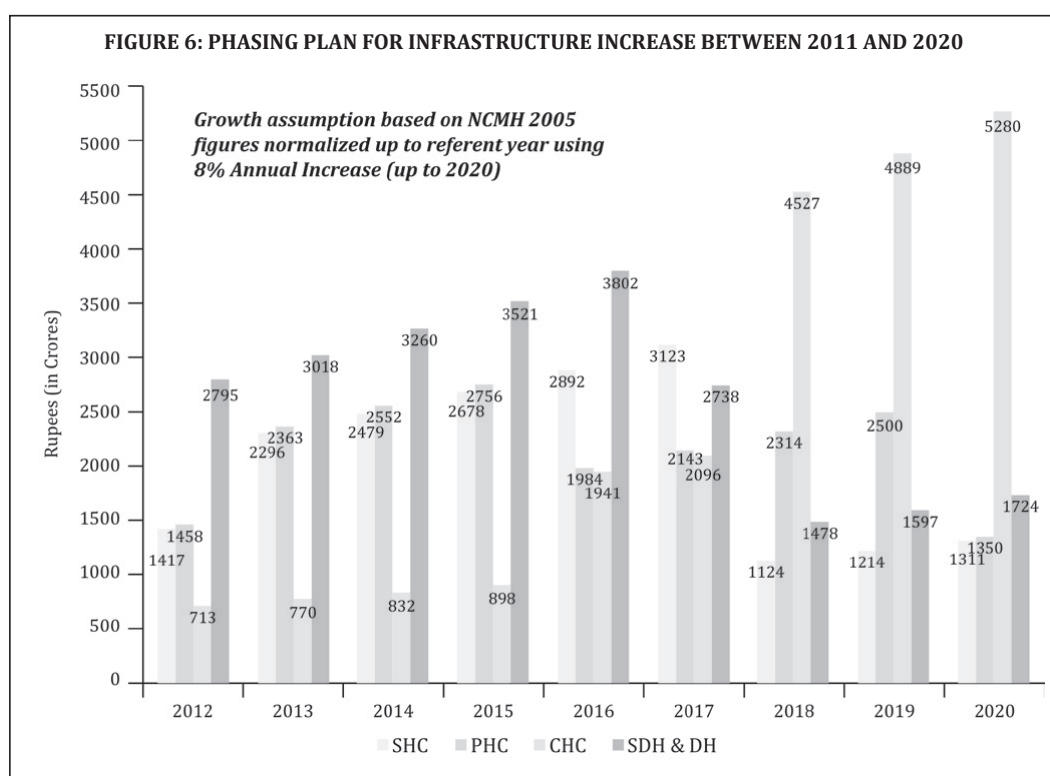


Source: HLEG Secretariat

In the initial phase, priority should be given to vulnerable populations so that fully functional subcentres are in place according to the population norms and every district has a functional sub-district or district hospital by 2020.

As described earlier, based on our new norms, we estimate the requirement of 314,547 SHCs,

50,591 PHCs, 12,648 CHCs and 5203 sub-district and district hospitals combined. Figure 5 presents the increase in number of facilities required at each level. Figure 6 is our recommendation for a phased approach with a focus on bridging the sub-centre and sub-district hospital gap more aggressively in the Twelfth Plan period.



Source: HLEG Secretariat

Figure 6 shows the trend in increase in capital costs until 2020 for the recommended phasing of the facilities discussed above. To calculate the total costs, the NCMH assumed an 8% increase every year from 2005 onwards.

Figure 7 and Table 8 show the corresponding

trend in operating expenses for these facilities. The graph reveals a spending pattern that echoes the overall vision of a robust and dominant primary health care system. An annual increase of 15% has been estimated in order to account for the increase in manpower norms at each level.

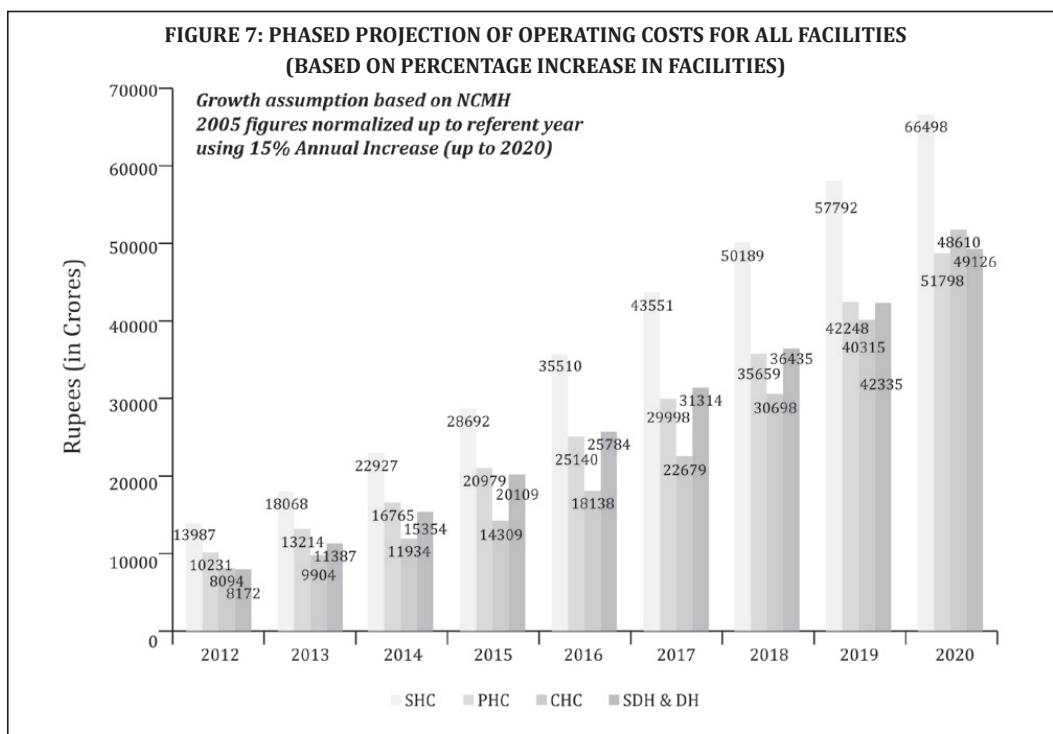


Table 8. Relative Percentages of Annual Operating Expenditure at Corresponding Facility Levels

Year	SHC	PHC	CHC	SDH & DH
(1)	(2)	(3)	(4)	(5)
2012	34.55%	25.27%	20.19%	19.99%
2013	34.37%	25.13%	18.84%	21.66%
2014	34.23%	25.03%	17.82%	22.92%
2015	34.12%	24.95%	17.02%	23.91%
2016	33.96%	24.04%	17.34%	24.66%
2017	34.15%	23.52%	17.78%	24.55%
2018	32.81%	23.31%	20.07%	23.82%
2019	31.63%	23.13%	22.07%	23.17%
2020	30.78%	22.50%	23.98%	22.74%

Source: HLEG Secretariat

a) Per capita estimations for the entitlement package

In the NCMH package (2005) of health services, outpatient services at PHCs and in-patient services at CHCs and DHs was examined⁴⁶ and

estimates for 2011-12 and 2020 were extrapolated. Using the cost inflation index calculator for the period between 2005- 06 and 2011-12, the NCMH figures were made current. An average inflation rate for this period was computed at 9%, and the current costs were then subjected to a

compounded annual increase of 9% until 2020.

The NCMH packages, computed using the standard treatment guidelines methodology, are fairly comprehensive for the purposes of gross estimates at the primary and secondary care level. Tertiary-care data were obtained primarily from insurance agencies (including RSBY) and analysed but subsequently rejected as possibly inaccurate.

We computed an out-patient per capita cost of Rs. 289, an in-patient per capita cost of Rs. 1159 at the CHC level and an in-patient per capita cost of Rs. 2398 at the DH level by the year 2020. All assumptions are based on the NCMH methodology, including a 70% utilisation rate of services, where indicated.

The estimates above clearly indicate disproportionately higher per capita cost at higher levels of care, emphasising the need for investing heavily in primary and preventive care. Consequently, the dependence on higher-order tertiary care services that involve expensive hospital stays and specialised curative services, in many cases, would be reduced.

It is important to state that the costing exercise above cannot provide an accurate national cost per capita for the health care package proposed; rather, these are merely estimates to enable the planners to earmark appropriate levels of funding over the next two plan periods. Several detailed modelling exercises will have to be undertaken across a country-wide cross-section of blocks or districts to customise the packages specific to local disease burden and delivery challenges, among other variables.

Table 9. Estimated Per Capita Calculation for Essential Health Care Package

Standard treatment guidelines-based costing of basic universal package	2005 values (NCMH)	(Rupees) 2011-12 (based on CII factor)	2020 (annualised using average CII rate from 2005- 2011)
(1)	(2)	(3)	(4)
Per capita OP cost at PHC (level 3)	90	133	289
Per capita IP cost at block CHC (level 4)	310	490	1159
Per capita tertiary care services (DH, level 5)	699	1104	2398

CHC = community health centre; CII = cost inflation index; DH = district hospital; IP = in-patient; OP = out-patient; PHC = primary health centre

Source: HLEG Secretariat, based on figures from the National Commission on Macroeconomics and Health (2005)⁴⁶

Disclaimer on costing calculations: All calculations for the purposes of this paper are based on assumptions that have been stated, including data gaps that exist in the source documents, and modeled appropriately. We recommend that the numbers be viewed in light of the overall framework and evaluated for the underlying logic rather than numerical precision alone. Additional sensitivity testing with corresponding changes in assumptions may be applied to any of the models.

7. Summary

It is widely acknowledged that economic growth in India has not adequately translated into the desired changes in the health and quality of life indicators of its citizens. Such outcome indicators as IMR, MMR, immunisation rates, antenatal care coverage, and major process indicators of institutional delivery are still far from

satisfactory. We acknowledge the gap between the health needs and aspirations of the citizens and the health care delivery system's ability to respond adequately. Access to quality health services on an affordable and equitable basis in many parts of the country remains an unfulfilled aspiration. Much ground still needs to be covered in malnutrition, sanitation and access to drinking water. The country has yet to design and imple-

ment a comprehensive umbrella of financial protection to cushion poor people from health-related catastrophic events.

The diversity and complexity of existing health systems in India point to some key issues for developing and understanding physical and financial norms for health services at the ground level. For one, community health requirements and the resources needed to meet them vary greatly. Second, there remains a dearth of human resources for health and physical infrastructure, including hospital beds, drugs and diagnostics. Health care provision by the organised private sector is virtually absent at the primary level, which highlights the need for providing adequate public resources to build a public sector health system. Finally, a large proportion of the population's first point of contact for treatment is the private sector; there are limits to partnerships with this sector in the context of rational drug use, ethical practice, skills upgrade and regulation.

The journey towards UHC will require the judicious adoption of creative and new initiatives and methods. Public as well as private stakeholders must create capacity and phase in their interventions. The early gains expected from these changes justify their continued support to ultimately achieve UHC.

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ANNEXURES

Annexure I. Cross-Country Comparison of Movement of Key Indicators from 2001 to 2011

Indicators	China UHC expected in 2011		Chile UHC since 1981		Brazil UHC introduced 1988		Thailand UHC since 2001		India	
	2001	2009	2001	2009	2001	2009	2001	2009	2001	2009
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Population	1.27 billion	1.33 billion	15.6 million	16.8 million	176 million	193 million	62.9 million	66.7 million	1.03 billion	1.17 billion
Birth rate	13	14	16	15	20	16	16	12.95	25	22
Death rate	6	7	5	5	6	6	8	9	8	7
Infant mortality rate per 1,000	22 (2005)	17	8 (2005)	7	22 (2005)	17	14 (2005)	12	57 (2005)	50
Under-5 mortal- ity rate per 1,000	25 (2005)	19	9 (2005)	9	26 (2005)	21	16 (2005)	14	77 (2005)	66
Maternal mortal- ity ratio (ad- justed) per 100,000 live births	44 (2005)	38	26 (2005)	26	64 (2005)	58	51 (2005)	48	280 (2005)	230

Source: The World Bank. World Bank-Data, Indicators. [Internet] ND [cited 2011 Apr 30]. Available from: <http://data.worldbank.org/indicator/SH.STA.BRTC.ZS/countries/BR-XJ-XJ>.

Annexure II: Selected Health Status Outcomes in India & Major Indian States

State	Life Expectancy at Birth, average for (SRS based Abridged life table 1998-02) (years) ¹	Neonatal Mortality 2005-06 (per 1000 live births)	Infant Mortality Rate (per 1000 live births) (Source: SRS 2009) ²	Under Five Mortality Rate, (Source: NFHS 2005-06) (per 1000 live births) ³	Total Fertility Rate, (Source: SRS 2008) ⁴	Under weight children, (%) (Source: NFHS 2005-06) ³
(1)	(2)	(3)	(4)	(5)	(6)	(7)
India	62.5	39.0	50	74.3	2.6	48.0
Andhra Pradesh	63.5	40.3	49	63.2	1.8	42.7
Assam	57.9	45.5	61	85.0	2.6	46.5
Bihar	60.8	39.8	52	84.8	3.9	55.6
Gujarat	63.4	33.5	48	60.9	2.5	51.7
Haryana	65.2	23.6	51	52.3	2.5	45.7
Karnataka	64.5	28.9	41	54.7	2.0	43.7
Kerala	73.5	11.5	12	16.3	1.7	24.5
Madhya Pradesh	56.9	44.9	67	94.2	3.3	50.0
Maharashtra	66.2	31.8	31	46.7	2.0	46.3
Odisha	58.5	45.4	65	90.6	2.4	45.0
Punjab	68.5	28.0	38	52.0	1.9	36.7
Rajasthan	61.1	43.9	59	85.4	3.3	43.7
Tamil Nadu	65.2	19.1	28	35.5	1.7	30.9
Uttar Pradesh	59.1	47.6	63	96.4	3.8	56.8
West Bengal	63.9	37.6	33	59.6	1.9	44.6

Sources:

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Annexure III. Time Line of Health System Reforms in India

1946 Highlights	Bhore Committee <ol style="list-style-type: none"> 1. Integration of preventive and curative services at all administrative levels 2. Short Term- Primary Health Centres for 40,000 population 3. Long Term (Three million Plan) - Primary Health Centres with 75 beds for each 10,000 - 20,000 population 4. Formation of Village Health Committee 5. Provision of Social Doctor 6. Inter-sectoral approach to health services development 7. Three months' training in preventive and social medicine to prepare social physicians
1951-55 Highlights	Community Development Programme <ol style="list-style-type: none"> 1. Multipurpose program to cover health and sanitation (through the establishment of primary health centres and subcentres) 2. Covered other sectors including agriculture, education, transport, social welfare and industries 3. For each Community Development Block (CDB) comprising of 100 villages and a population of one lakh, one Primary Health Centre was created
1956-61 Highlights	Mudaliar Committee <ol style="list-style-type: none"> 1. Limit the population served by a primary health centre to 40,000 2. Improve the quality of health care provided by these centres 3. Provision of one basic health worker per 10,000 population
1967 Highlights	Jungalwalla Committee <p>Integration of services, organisation and personnel from the highest to the lowest level</p>
1973 Highlights	Kartar Singh Committee <ol style="list-style-type: none"> 1. To ensure proper coverage, establishment of one primary health centre for every 50,000 population 2. Division of each primary health centre into 16 sub-centres, each for a population of 3,000 to 3,500 3. Staffing of each sub-centre by a team of one male and one female health worker 4. Provision of one health assistant to supervise the work of 3-4 health workers
1975 Highlights	Shrivastav Committee <ol style="list-style-type: none"> 1. Creation of bands of para-professional and semi-professional health workers from within the community 2. Development of a "Referral Service Complex" by establishing linkages between the primary health centre and higher level referral and service centres
1977 Highlights	Rural Health Scheme <ol style="list-style-type: none"> 1. Training of community health workers, reorientation training of multipurpose workers and linking medical colleges to rural health launched 2. To initiate community participation, the Community Health Volunteer - Village Health Guide (VHG) Scheme launched 3. The VHG to be a person from the village, mostly women, who would be imparted short term training and small incentives for work
1978 Highlights	Alma Ata Declaration <ol style="list-style-type: none"> 1. Launched the concept of Health for all by the year 2000 2. Provision of first contact services and basic medical care within the framework of an integrated health services

(Contd.)

Annexure III. (Contd.)

1980 Highlights	Health For All by 2000 - Committee report <ol style="list-style-type: none"> 1. Formulation of a comprehensive national health policy through an inter-sectoral approach (including environment, nutrition, education, socio-economic, preventive and curative dimensions) 2. Set health targets to be achieved by 2000 AD by substantially increasing existing health services and manpower
1983 Highlights	National Health Policy <ol style="list-style-type: none"> 1. Provision of universal, comprehensive primary health services 2. Shift of focus from the development of health systems and infrastructure for primary health care and ensuring health equity to vertical interventions based on technical justifications and cost-effectiveness analysis 3. To improve child survival, use of a selective approach of GOBI-FFF
2000 Highlights	National Population Policy <p>Development of a one-stop integrated and coordinated service delivery at the village level for basic reproductive and child health services through a partnership of the government with voluntary and non- governmental organisations</p>
2002 Highlights	National Health Policy 2002 <ol style="list-style-type: none"> 1. Increase access to the decentralised public health system by establishing new infrastructure in deficient areas and upgrading the infrastructure of existing institutions 2. Set aside an increased sectoral share of allocation of the total health spending to primary health care 3. Goals: <ol style="list-style-type: none"> i. Eradicate polio and yaws by 2005 ii. Eliminate leprosy by 2005 iii. Eliminate Kala Azar by 2010 iv. Eliminate lymphatic filariasis by 2015 v. Achieve zero level growth of HIV/AIDS by 2007 vi. Reduce mortality by 50% on account of TB, Malaria, other vector and water-borne diseases by 2010 vii. Reduce prevalence of blindness to 0.5% by 2010 viii. Reduce IMR 30/1000 and MMR 100/lakh by 2010 ix. Increase utilisation of public health facilities from <20% to >75% by 2010 x. Establish an integrated system of surveillance, national health accounts and health statistics by 2005 xi. Increase health expenditure by Govt. as a % of GDP from existing 0.9% to 2% by 2010 xii. Increase share of central grants to constitute at least 25% of total health spending by 2010 xiii. Increase the state sector health spending from 5.5% to 7% of the budget by 2005 xiv. Further increase the state sector health spending to 8% of the budget by 2010
2005 Highlights	National Rural Health Mission <ol style="list-style-type: none"> 1. Key Components: <ol style="list-style-type: none"> i. Provision of a female health activist in each village ii. Formulation of a village health plan through a local team headed by the health and sanitation committee of the Panchayat iii. Strengthening of rural hospitals for effective curative care, making them measurable and accountable to the community through the IPHS iv. Integration of vertical health and family welfare programmes v. Strengthening of primary health care through the optimal utilisation of funds, infrastructure and available manpower

(Contd.)

Annexure III. (Concl'd.)

2. Key Approaches:

- i. Communitization emphasizing community involvement
- ii. Flexible financing for increased monetary autonomy
- iii. Capacity building to empower multiple stakeholders for efficient health delivery
- iv. Human resource management to generate more manpower
- v. Equipping health personnel with adequate multiple skills

3. Core Strategies:

- i. Train and enhance the capacity of Panchayati Raj institutions to own, control and manage public health services
- ii. Promote access to improved health care at household level through the village-level worker (Accredited Social Health Activist)
- iii. Health plan for each village through the village health committee of the Panchayat
- iv. Strengthening sub-centre through better human resource development, clear quality standards, better community standards, better community support and an untied funds to enable local planning and action and more Multipurpose workers
- v. Strengthening existing primary health centres through better staffing and human resource development policy, clear quality standards, better community support and an untied fund to enable the local management committee to achieve these standards
- vi. Provision of 30-50 bedded CHC per lakh population for improved curative care to a normative standard
- vii. Preparation and implementation of an inter-sector district health plan prepared by district health mission, including drinking water supply, sanitation, hygiene and nutrition
- viii. Integrating vertical health and family welfare programmes at national, state, district and block levels
- ix. Technical support to national, state and district health mission, for public health management
- x. Strengthening capacities for data collection, assessment and review for evidence base planning, monitoring and supervision
- xi. Formulation of transparent policies to deploy human resources to health
- xii. Developing capacities for preventive health care at all levels to promote healthy lifestyles, reduction in the consumption of tobacco and alcohol, etc.
- xiii. Promoting the non-profit sector particularly in under-served areas

4. Supplementary strategies:

- i. Regulation for private sector including the informal rural medical practitioners to ensure the availability of quality service to citizens at a reasonable cost
 - ii. Promotion of public-private partnerships to achieve public health goals
 - iii. Mainstream Indian system of medicine (AYUSH) to revitalize local health traditions
 - iv. Reorient medical education to support rural health issues including regulation of medical care to medical ethics
 - v. Effective and visible risk pooling and social health insurance to provide health security to the poor by ensuring accessible, affordable, accountable and good quality hospital care
-

**Annexure IV. Patient Perception of Quality of Service Delivery Offered at PHFs
(Public Health Facilities - SHCs, PHCs and CHCs)**

Have you come here for a medical problem before and not received treatment?	No, % of Total	Yes, % of total (If so, why? See columns to right - % of total who mention specific reason/s)	Staff absent	Centre shut	No medicines	No facilities	Long wait	Other-Corruption*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Andhra Pradesh (76)	67.10%	32%	22.40%	5.30%	11.80%	2.60%	10.50%	1.30%
Uttar Pradesh (114)	57%	43%	37.70%	5.30%	26.30%	1.80%	17.50%	6.10%
Bihar (136)	39%	61%	49.30%	0.70%	55.90%	1.50%	24.30%	8.80%
Rajasthan (57)	64.90%	35.10%	26.30%	1.80%	35.10%	0%	0%	3.50%

Annexure IV: (Contd.)

Are you satisfied with your visit today?	No, % of total (if so, why? See columns to right- % of total who mention specific reason/s for dissatisfaction)		Staff absent	Centre shut	No medicines	No facilities	Long wait	Other- Pay for Diagnostics / Post Natal
(1)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Andhra Pradesh (76)	25%		5.30%	0%	11.80%	1.30%	14.50%	2.60%
Uttar Pradesh (114)	50.90%		26.30%	0%	43%	3.50%	9.60%	0.90%
Bihar (136)	77.20%		24.30%	0%	74.30%	4.40%	35.30%	0.70%
Rajasthan (57)	61.40%		12.30%	0%	57.90%	7.00%	1.80%	1.80%

Annexure IV: (Concl.d.)

Are you satisfied with your visit today?	Yes, % of total (if so, why? See columns to right- % of total who mention specific reason/s for satisfaction)		Staff present	Centre timings good / 24 hours	Free medicines	Good facilities	No wait	Other-Delivery
(1)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
Andhra Pradesh (76)	75%		23.70%	0%	71.10%	11.80%	3.90%	0%
Uttar Pradesh (114)	49.10%		14.90%	2.60%	18.40%	5.30%	0.90%	13.20%
Bihar (136)	22.80%		0%	0%	10.30%	0%	0.70%	13.20%
Rajasthan (57)	38.60%		12.30%	0%	5.30%	7.00%	10.50%	10.50%

* 'Other-Corruption' refers to reasons like staff calling patients around back of PHF to charge them for consultation and medicines.

'Other-Pay for Diagnostics / Post Natal' refers to having to pay for diagnostics (AP) and demand for 'diet', i.e., food and longer time in centre postdelivery (UP, Bihar, Rajasthan).

'Other-Delivery' refers to good for institutional delivery.

Source: Gill K. A Primary Evaluation of Service Delivery under the National Rural Health Mission: Findings from a Study in Andhra Pradesh, Uttar Pradesh, Bihar and Rajasthan. Working Paper 1/2009. New Delhi: Planning Commission of India; 2009 May.

Annexure V. Vulnerability Index Calculator: A Sample Tool

Vulnerability Scoring of PHCs and CHCs							
Indicator	Vulnerability - Zero	Minimal Vulnerability	Moderate Vulnerability	High Vulnerability	Extremely Vulnerable	Max Score	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
1. Distance from Block Hqrs.	> 1	1 to 10 Km	10 to 20 Km	20 to 30 Km	> 30 Km	4	
	0	1	2	3	4		
2. Distance - PHC/CHC to High Way/ MDR (Public Transport)	On Road	Upto 2 Km	2 to 5 Km	5 to 10 Km	>10 Km	3	
	0	0	1	2	3		
3. Connectivity to FRU/ Hospital	All weather connectivity all 12 months	Connected but occasionally disconnected	Not connected < 3 months	Unconnected >3 to <6 months	Unconnected with Black Top Road	3	
	0	0	1	2	3		

(Contd.)

Annexure V. (Conclld.)

	Indicator	Vulnerability - Zero	Minimal Vulnerability	Moderate Vulnerability	High Vulnerability	Extremely Vulnerable	Max Score
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
4.	Availability of Transport	Bus Transport Available 2 or more / day 0	Public Buses Available 1/ day 0	No Buses, Other Public transport available 1	Can Access with private transport 2	No Accessibility by transport 3	3
5.	Availability of Govt. Housing and Others	Very Good Condition 0	Good Condition 0	Average condition 1	Very poor condition 2	Not Available 3	3
6.	Availability of Rented Housing and Others	Not required 0	Easily Available 0	Can be Located 1	Difficult to find 2	Not Available 3	3
7.	SHCs of PHC Not Connected by Black top Road (%)	Zero 0	0 to 20 1	20 to 40 2	40 to 60 3	>60 4	4
8.	SHCs Not Connected by all weather roads	Zero 0	0 to 20 (%) 1	20 to 40 (%) 2	40 to 60 (%) 3	>60 (%) 4	4
9.	Average Population per villages	> 750 0	500 to 750 0	250 to 500 1	100 to 250 2	< 100 3	3
10.	Farthest SHC served by PHC/CHC	< 2 Km 0	2-5 km 0	5-8 km 1	8-10 km 2	> 10 km 3	3
11.	Left Wing Extremism						
	a. Law and Order assessment by Dist. Administration	No Risk	Less Risk	Moderate Risk	High Risk	Extremely Risky	4
	b. Perception of Medical Staff	No Risk	Less Risk	Moderate Risk	High Risk	Extremely Risky	3
12.	Tribal Blocks	Plain Area	Agency (notified forest)	25% villages under LWE	26-50% villages under LWE	>75% villages under LWE	10
	Total						50

Source: HLEG Secretariat.

Annexure VI: Illustrative PPP Options in Indian Health Care Service Delivery

Primary health care level

Management of block level hospitals.	*	Government could handover management of primary health care centres (30 bedded block level hospitals and primary health care centres providing out-patient and day care services) to private/NGO partners under lease agreements (with or without government staff).
Example: In Odisha, PHCs have been successfully contracted out.	*	Government could provide financial assistance (partial) for up gradation /equipping through channeling grant assistance from multiple donors and negotiate fee agreements with private partners for various services provided to the poor by the health care services provided by the centre to a declared list of poor residents in the catchment area of the health centre.
Diagnostic Centres	*	Government could partner with private players to set up and operate a network of diagnostic centres in a state (hub and spoke model)
Examples: The government of Uttar Pradesh is using a private partner to provide round the- clock laboratory tests at a government hospital	*	covering their hospital with appropriate range of diagnostic services on a fee for service basis and profit sharing agreements.
	*	Poor can be protected by government agreeing to pay on their behalf.
	*	Space can be given to the diagnostic services within the hospitals or these centres can be set -up in the hospital campus or adjoining areas. These agreements would need to be for an appropriate length of time (10-30 years) with suitable exit clauses.
Partner with government to provide emergency transportation and trauma care service networks	*	Private players could partner with government to provide emergency transportation and trauma care service networks in States including 24-hour toll free helpline and ambulance and trauma care mobile team attached with emergency wards in private and public hospitals.
Example: EMRI 108 services are functional in state like Gujarat, Rajasthan, MP	*	The partnership can extend to management of emergency wards in public hospitals to provide seamless trauma response and care services.
	*	Government could provide start-up financial assistance through funding of infrastructure with private sector partner having the responsibility to maintain and upgrade the infrastructure through user fees agreed with government and possibly having a variable fee structure to cover the poor.
	*	Government in this case too could pay for the services on behalf of the poor to keep the service financially healthy.
Operate a network of fair price pharmacies	*	Private pharmaceutical manufacturers/distributors could partner with government to set-up and operate a network of fair price pharmacies for generic drugs (essential drugs lists) operated from within/outside the public hospital facilities.
	*	Prices of drugs and supplies to be agreed by both partners and the agreements run on profit sharing basis.
	*	Government could invest in the infrastructure such as warehouse and space for the pharmacies and hand them over to private partners to manage, maintain and operate under lease agreements.

(Contd.)

Annexure VI. (Concl.)

Market contraceptives and maternal and child drugs and supplies	*	Private distribution and rural marketing companies could partner with the government to related market contraceptives and maternal and child drugs and supplies at agreed prices.
Example: As a pilot project in 98-99, HLFPT was selected to undertake contraceptive social marketing	*	Government could part fund the promotion/distribution related costs with the rest including profits recovered through sales.
Secondary and tertiary levels		
Outsource specialized procedures and services	*	Private sector partners/hospitals under agreement specifying service package, quality standards and costs (Diagnosis Related Groups - DRG Models of Australia and Germany)
	*	Support services such as diagnostic services could be outsourced to specialized providers meeting quality standards.
	*	Government could partner with private hospitals to provide medical services patients and reserve/ guarantee a certain number of patients/beds per day /month under fixed/variable price agreements.
Upgrade public-private partnerships	*	PPPs to upgrade/establish and operate specialised treatment services/ wards and facilities (including diagnostic services) within public hospitals on profit sharing basis.
	*	The services fees to be negotiated annually and a variable fee structure could apply to cover the poor.
	*	Service packages to be agreed with specifications of quality standards and related fees.
	*	PPPs on profit sharing basis
Government support to private sector	*	Government could financially support private sector partners to set -up hospitals (UK Model) and participate in the management board of the hospital to protect the interest of the poor. The private partner may have lease rights for a certain period of time (30 years to perpetual depending on the level of financial participation and investment by both partners.
Investment	*	Government could invest in land and building of a new hospital and private partners could bring in the equipment and be given the exclusive management role with government participating in the governing board.
	*	The partnership can be in the form of a joint venture or a management consortium with voting rights of both partners protected.
	*	Government could participate in fixing fees for various medical services provided to the poor and could even pay the joint venture a fixed price per poor patient treated in such hospitals.
Hospital management	*	Government could hand over the management of an existing public hospital (with or without government staff) to a well-established private partner under a partnership agreement with the responsibility of investing in the hospital for its-up gradation/expansion and management.
	*	Government could be an active partner in the governing board with day-to-day executive function in the hands of the private partner. Interest of poor could be protected through fees fixation and government picking up the bill on behalf of the poor.

Source: Bhandari D. *Public Private Partnership in Health Care- Policy framework and emerging trends in India*. Indian Society of Health Administrators 2008;07(21):26-31.

Annexure VII. Criteria for Health Vulnerability Assessment in Slums

	Extremely vulnerable slums	Moderately vulnerable slums	Less vulnerable slums
(1)	(2)	(3)	(4)
SLUM STATUS	Unauthorized settlement, i.e., slums not recognized (situated along roadside, on private land)	Land belongs to local authorities and possibility of sanction- /leased land	Own land or authorized quarters or a registered slum
HOUSING	House is Kuchcha (made with mud, thatch, or other low quality materials) with weak structure; high density in the area; no separate place for cooking; minimal ventilation	Semi-pucca (made with partly low quality and partly high quality material); relatively better than the earlier category	Permanent structure, ventilation present; separate space/veranda for cooking
BASIC SERVICES			
Toilet	No toilets and defecation in the open by adults and children	Bathing in the open, use of common toilets for defecation; children's use of toilets is low	Majority have bathing and toilet facilities within their homes
Water	No water supply in the slum. People travel far for water	Number of public water taps disproportionate to the need in the slum and irregular water supply	Many public taps with supply of water at regular intervals
Drainage	No drains, or drains are clogged, un-cemented roads	Open drains, narrow but cemented lanes	Majority of the slum areas have underground drains and paved roads (cemented)
Electricity	No electricity or tapped illegally	Pay to the landlord for point wise or otherwise	Metered individual electricity connections
EMPLOYMENT PATTERN			
Pattern	Amount below INR1,000 per family per month; daily wage earner with irregular pattern	INR1,000-2,000 earning per household; daily wage but regular self Employment	>INR 2,000 earning per household; majority service class
Occupation hazard	Majority are in hazardous work, such as ragpicking, sex work, garbage recycling	Vendors, semi, and unskilled laborers engaged in odd jobs	Private or government job holders, petty traders, shopkeepers, etc.
Loaning/ savings	Loans from unorganized sector through mortgage or with rates of interest higher than 10%; no savings	Loans from landlords or money lenders at lower rates of interest. Irregular savings	Loans from organized community group/ institutions; saving regularly at bank, self-help groups

(Contd.)

Annexure VII. (Concl.)

	Extremely vulnerable slums	Moderately vulnerable slums	Less vulnerable slums
(1)	(2)	(3)	(4)
STATUS OF HEALTH AND HEALTH SERVICES			
Morbidity	High incidence of illnesses, malnutrition, and mortality among children	Better conditions than previous category	Lesser morbidity and mortality among children
Services	Extremely low immunization among children; home deliveries by untrained dais	Irregular immunization; majority of deliveries are institutional	Complete immunization; all deliveries are institutional
Health facility	No public health facility within 2-3 km; visit faith healers, store keepers, and quacks for treatment	Visit quacks and qualified doctors; government facility used only for prolonged illnesses	Visit qualified doctors for all ailments; dispensary or government facility nearby
DEVELOPMENTAL SUPPORT			
Government NGO/CBO	No government or nongovernment programmes; limited community-based efforts	ICDS and other programmes present but function irregularly; NGO/CBO activities sporadic	Relatively better supported by government and NGO efforts
EDUCATION			
Children and adults	Majority of children work and are not enrolled in schools; illiteracy among Adult	Children enrolled in schools but dropout rates are high; adults have functional literacy	All children are enrolled in school, absence of child labour; all adults have primary education
GENDER STATUS	Low gender status (seen in high incidence of domestic violence, limited choices over fertility)	Seen as improvement over the extremely vulnerable category	Equitable gender status (seen in improvement over earlier category)
IDENTITY PROOF	Majority do not have any documents (ration cards, voter ID, caste certificate)	Some have ration cards voter ID, caste certificate	Majority have requisite papers

Source: Agarwal S, SatyavadaA, PatraP, Kumar R. Strengthening functional community_provider linkages: Lessons from the Indore urban health programme. *Global Public Health*. July 2008;3(3):308-25.

Annexure VIII. Health Service Entitlements

Health Service Entitlements: Illustrative List Proposed as Part of Universal Health Coverage					
Inst.	Village (+ outreach)	Sub centre	PHC	CHC	SDH/DH and other higher-level institutions
Package	Level 1	Level 2	Level 3	Level 4	Level 5 and above
Reproductive Health and Sexual Health	<ul style="list-style-type: none"> * Antenatal care (home visits, screening, health education and counseling) X 3 * IFA, calcium, multi-micronutrient * Height, Weight and Blood Pressure * Nutritional supplement to mother/ counseling * Delivery assistance (attend, assist, accompany) * Post natal home visits + Home-Based New Born Care + postpartum health * Common sexual/ urogenital problems, common reproductive and obstetric health issues 	<ul style="list-style-type: none"> * Urine test, Blood test * Intrauterine growth of foetus * Abdominal/ Per vaginal examination * Breast examination * Identify high risk pregnancy * Identify danger signs and timely referral * HIV testing 	<ul style="list-style-type: none"> * Normal delivery, Post-delivery care * Abortion first trimester, and post-abortion care * Controlled cord traction, manual removal of placenta, identification and treatment of RTI/ STI * General OBS/GYN complications * Bi manual compression of uterus * Syphilis testing, HIV treatment * Active management of third stage of labour * Treatment of Syphilis (women and partner) * Treatment of hypertension in pregnancy 	<ul style="list-style-type: none"> * Management of ectopic pregnancy * Parenteral administration of anticonvulsants * Delivery with malpresentation, Puerperal Sepsis, Severe Anemia * APH, PPH, Eclampsia, Obstructed labour, Caesarean sections * Abortion (septic), Uterine evacuation for management of incomplete abortion * Essential/ Emergency Obstetric Care with blood transfusion services * Uterine evacuation for pregnancy beyond first trimester 	<ul style="list-style-type: none"> * Treatment for PID, Bleeding if unknown origin * Hysterectomy * Management of prolapsed cord, Uterine prolapses, Infertility * Management of Obstetric Fistula * Management of Abortion related complications * Management of Shock * Infertility/ complicated pregnancy with pre-existing conditions * Counseling after sexual abuse and/or rape

(Contd.)

Annexure VIII. (Contd.)

Inst.	Village (+ outreach)	Sub centre	PHC	CHC	SDH/DH and other higher-level institutions
Package	Level 1	Level 2	Level 3	Level 4	Level 5 and above
Child and Adolescent Health	<ul style="list-style-type: none"> * Home Based Newborn Care, Early and Exclusive Breastfeeding * Immunization Growth monitoring * Sick child (counseling, management and referral) * Home visit for children aged 0-2 years for counselling on breastfeeding, complimentary feeding, seeking early care * 5-14 year olds: counselling on handwashing, tobacco, deworming, dental hygiene * Menstrual hygiene, health education and other common sexual health issues in adolescents 	<ul style="list-style-type: none"> * Post natal care, Immunization * Acute Respiratory Infection (ARI), Diarrhoea Management * Dysentery, Malnutrition Management * Deworming * HIV testing and prevention for parent to child transmission * Identification and referral for congenital malformations to referral centres * Anaemia prevention * Screening for mental disorders and counseling * IMNCI/ HBNC * Managing Hypothermia (KMC) and referral 	<ul style="list-style-type: none"> * Newborn Resuscitation, managing infections * Nutritional Rehabilitation Centres 	<ul style="list-style-type: none"> * Childhood diseases/health conditions * Birth Asphyxia, Neonatal Sepsis, Low Birth Weight (LBW) * Artificial feeding for LBW/preterm babies * ARI: Severe Pneumonia, IV rehydration treatment for diarrhoea * Treatment with antibiotics and Oxygen support, Sick New Born Care Unit (LI) * Management of newborns/children with danger signs (IMNCI/ HBNC referrals) * Management of measles/referral of complicated cases after proper pre-referral treatment, Management of neonatal jaundice * Managing Hypothermia using warmers 	<ul style="list-style-type: none"> * Child Health, very low birth weight * Management of severe cases using ventilators/incubator * Management of Neonatal tetanus * Treatment of meningitis/ case management of severely ill children * Surgery for congenital malformations
Family Planning	<ul style="list-style-type: none"> * Information, Education and Communication (IEC) * Condoms, Oral contraceptives * Counseling services 	<ul style="list-style-type: none"> * Emergency Contraceptives 	<ul style="list-style-type: none"> * Female Sterilization * Vasectomy * IUD insertion and removal 	<ul style="list-style-type: none"> * Family Planning package including services from Level 1 to 3 * Management of complications and appropriate level referral 	<ul style="list-style-type: none"> * Recanalization * Surgical Interventions for associated complications

(Contd.)

Annexure VIII. (Contd.)

Inst.	Village (+ outreach)	Sub centre	PHC	CHC	SDH/DH and other higher-level institutions
Package	Level 1	Level 2	Level 3	Level 4	Level 5 and above
Disease Control Programs	<ul style="list-style-type: none"> * Health Education * Sanitation * Chlorination of water * Malaria prevention and treatment * Filaria 	<ul style="list-style-type: none"> * Directly Observed Treatment, Short course (DOTS) * MDT for Leprosy * Treatment of filariasis * Referral services 	Blindness <ul style="list-style-type: none"> * Blindness due to refractive error and low vision Leprosy * Paucibacillary, Multibacillary Tuberculosis * New Sputum Positive, New Sputum Negative * Default/ Failure/ Retreatment, Extrapulmonary, DOTS Vector Borne Diseases * Malaria, Dengue, Filaria, Kala Azar RDK * Distribution of mosquito nets, Gumbushi fish 	Blindness <ul style="list-style-type: none"> * Cataract surgery Tuberculosis (TB) * DOTS Plus in MDR TB * Inpatient management * X-ray for smear negative * Algorithms of treatment for AFB (-) * Preventive therapy for children in contact with TB patients Vector Borne Diseases * Malaria: complicated * Management of pregnant women with malaria 	<ul style="list-style-type: none"> * Toxic Shock and severe drug reactions, complications from communicable diseases and complications from super-infections.
General and Oral health	<ul style="list-style-type: none"> * Health Education, Self reporting/ Case detection * Follow up of chronic cases, IEC * Home visits/ counseling * Preventive and Promotive activities * Sanitation and Hygiene * Treatment of common minor illnesses * Referral/assistance in seeking care * Oral health counselling, IEC/BCC 	<ul style="list-style-type: none"> * School health * Fever and other common ailments * Treatment of Urinary Tract Infections (UTI) * Treatment using oral antibiotics, Antihelmintic drugs * Snake bite, dog bite, skin disorders * Screening for priority preventable diseases * Deworming, Oral Health screening & preventive 	<ul style="list-style-type: none"> * AYUSH * Referral services * Infection prevention * Management of local endemic diseases/ surveillance/ reporting * Minor injuries * Disability support * Minor Oral Health procedures * Fractures, wounds, minor procedures 	<ul style="list-style-type: none"> * Imaging services, Blood Transfusion services * Chronic otitis media, Occupational therapy * Speech therapy, Orthopedics: diagnosis * Physiotherapy, Accidents/ major injuries, trauma * Disability treatments, Minor oral health surgeries * General surgeries, Laparoscopic surgery * Geriatric care 	<ul style="list-style-type: none"> * Production of Orthotics, fitting and training * Skull and facial surgeries Specialized Services * Major injuries and emergencies (50%) * Essential plastic surgery disability management * Major Oral Health surgeries * Specialist surgeries * Chronic pain management

(Contd.)

Annexure VIII. (Concltd.)

Inst.	Village (+ outreach)		Sub centre	PHC	CHC	SDH/DH and other higher-level institutions
Package	Level 1	Level 2	Level 3	Level 4	Level 5 and above	
Diabetes	* Health Education * Diabetes check (screening and monitoring)	* Therapy for Diabetes Mellitus (without insulin)	* Therapy for Diabetes Mellitus (with insulin)	* Treatment of uncontrolled diabetes and complications	* Treatment of uncontrolled diabetes and complications requiring specialist care	
Mental Health	* Health Education * Mental Health counseling * Screening and referral * Exercise and Yoga * Alcohol, substance abuse issues * Gender Based Violence and its impact on health	* Mental Health counseling * Detection of common mental disorders, geriatric problems including dementia * Post violence, physical abuse, trauma care * Drug distribution and follow up	* Common Mental Disorders, mood/bipolar disorders * Child and Adolescent psychiatric disorders	* Schizophrenia * Mental disorders not requiring hospitalization	* Mental disorders requiring hospitalization	
CVD	* Health Education * Weight, Blood Pressure * Tobacco Prevention	* Hypertension treatment (with diet and exercise; with one drug) * Evaluation of chest-pain	* Treatment of Congestive Heart Failure * Hypertension treatment (with two drugs) * Early treatment of Myocardial Infarction	* Non-invasive management of Myocardial Infarction * Medical management of Rheumatic Heart Disease	* Intensive care * Invasive management of Myocardial Infarction * Cardiac Surgery * Interventional Cardiology	
Chest /Respiratory	* Health Education	* Acute Respiratory Tract Infections and Pneumonias	* Chronic Obstructive Pulmonary Disease, Asthma	* Respiratory conditions requiring hospitalization	* Respiratory conditions requiring intensive care	
Cancer	* Health Education * Tobacco Prevention	* Screening and referral * Monitoring symptoms	* Cancer detection (lab samples), Breast and cervix examination	* Chemotherapy, Cancer detection (specialized)	* Cancer surgery, Radiation therapy * Palliative care	
Neurology	* Health Education and counseling	* Early detection and referral * Health Education and counseling	* Early detection and referral * Epilepsy * Early treatment of stroke * Post-stroke rehabilitation	Clinical Services * Neurology (medicines, diagnostics) * Non-invasive treatment of stroke	* Neurosurgery * Epilepsy (with hospitalization) * Stroke Units	

CHAPTER 5 MANAGEMENT AND INSTITUTIONAL REFORMS

1. Background

The New Public Management (NPA) of the 1980s and 1990s sought to redefine the role of the government, from direct service provision alone to include stewardship, oversight and regulation. While NPA's successes and weaknesses are now better understood in the light of experience, it played a useful role in highlighting the importance of effective management of both public and private systems. Managing well is now seen as crucial to successful coordination of multiple resources, diverse people, and complex processes, as well as negotiating with stakeholders to achieve desired policy and program objectives and outcomes.

Assessments of health systems in both high- and lower-income contexts regularly cite poor coordination of resources and dysfunctional management structures and processes as serious constraints. In turn, better management capacity is seen to contribute significantly to effective implementation and achievement of desired goals and results.¹ In India, improved management and better regulation overall would go a considerable way towards meeting the need for synergy and convergence of efforts from both the public and private sectors to ensure Universal Health Coverage (UHC).

While the public health sector needs to be strengthened to assume multiple roles of promoter, provider, contractor, regulator and steward, the role of the private sector also needs to be clearly defined and regulated. At the peripheral level, systemic reforms must ensure effective functioning in the villages and urban local areas. Good referral systems, better transportation, improved management of human resources,

supply chains and data, along with upgraded facilities are essential at the higher levels, especially for secondary care.

2. Limitations in Management of Health Care Delivery

a) Inadequate Focus on Public Health - Both Preventive and Promotive

Health provision includes a mix of different kinds of economic goods that entail differing incentive structures and behaviour on the part of both providers and clients.² These are:

- i. public goods that are non-rivalrous and nonexclusionary, that is, preventive services
- ii. merit goods that have both private and public benefits, like immunization
- iii. private goods including curative services

Public health - preventive and promotive services - falls largely within the ambit of public and merit goods. But, as compared to curative services, public health has not been accorded sufficient importance by policies and programs in India. In part, this could be because private and merit goods are easier to measure and therefore easier to manage. While this is also true for some public goods such as immunization, TB control and vector control, broader public health functions such as policy-making, health surveillance and health awareness are more complex and difficult to measure.²

Public funding for health services in India has largely gone to medical services, with policies and strategies giving priority to curative services.³ Public health services have been neglected, or limited to narrowly defined, single-focus programs. Fiscal incentives for states to implement such single-focus, centrally sponsored programs may actually have led to the erosion of public health systems more broadly.

The amalgamation of medical and public health services has in many instances decreased career incentives for public health work.⁴ There has been no real focus on developing public health leadership and encouraging sub-national levels to train and promote human resources in the area of public health. "Weaknesses lie, inter alia, in workforce planning: projecting future workforce needs and developing strategies for meeting these needs."⁵ In addition, separation of public health engineering from health services and amalgamation of all male grassroots staff have resulted in the elimination of environmental health services.⁴

In the private sector, which is the main player in service provision, incentives are tilted towards curative services and medical education.³ This sector has few incentives to provide public goods and its interests result in under provision of merit goods.²

This focus on provision of curative care, with less or at times negligible emphasis on preventive and promotive care, not only results in poor health outcomes but can also dampen prospects for economic development.⁴ The mix of health functions—including preventive, promotive, curative, and rehabilitative services - warrants much more attention and rigorous management processes to avoid over-emphasis of curative care at the expense of preventive and promotive services.

b) Lack of Public Health Regulation (including Standard Guidelines) and their Enforcement

Regulatory and legal frameworks are essential building blocks for strengthening the health system and gearing it towards universal healthcare delivery. Such frameworks deliver by putting in place mechanisms that "reduce exposure to disease through enforcement of sanitary codes, ensure the timely follow up of health hazards, and monitor the quality of medical services and products (including drugs)."^{3,5} The government

needs to put in place a set of "laws, administrative rules, and guidelines issued by delegated professional institutes" that are binding on the organisations and individuals that are part of the health system.³

The experience of Ministry of Health and Family Welfare (MoHFW) in implementing and monitoring legislation and enforcing regulations has raised some concerns.⁵ The Ministry lacks a focal point for public health services, and the lack of a Public Health Act has led to the neglect and erosion of such services.⁴

The Clinical Establishment Act, the National Accreditation Board for Hospitals and Healthcare Providers (NABH) and the Indian Public Health Standards (IPHS) —under National Rural Health Mission —are attempts to define standards for healthcare facilities. However, these compartmentalized initiatives may have led to further fragmentation of an already segmented industry. The problem lies in not having a single, unified system to establish standards (for structures, processes about quality, rationality and costs of care, treatment protocols and ethical behaviour) applicable to both the public and the private sector; and to monitor the functioning of health facilities and compliance with established standards. Such a system is essential for ensuring accountability of these institutions and organisations.

In addition to the inadequacy of the overall regulatory and legal framework, it has been argued that, with regard to the "private health providers and insurers, the Indian government has adopted a laissez-faire policy. The rapid growth of the private sectors—which has occurred in the absence of any kind of public regulation, mandatory registration, regular service evaluations, quality control, or even selfregulation- has raised many concerns, most of which focus on quality of care."^{3,6,7} Ad hoc and piecemeal engagement of private providers by the public sector through widely varying Public Private Partnerships

(PPPs) has raised serious concerns about the quality of the services provided, and the ability of the public sector to design and manage PPPs effectively.

c) Poor Use of Data and Poor Monitoring and Evaluation (including Performance Monitoring)

Monitoring and Evaluation (M & E) has been an area of weak performance by the government as accountability has essentially been understood as a matter of enforcing bureaucratic controls.^{2,8} The government does collect health profiles of various states, but does not effectively use this information for decision-making. Information quality is not adequately evaluated and there are seldom any audits of information systems. There is poor adherence to data collection protocols which are then rarely reviewed. The inputs and suggestions of the public system's own evaluation unit are not heeded, indicating the superficial nature of this unit and its authorities.⁵ In addition, the epidemiological surveillance system is not designed to incorporate the findings and views of external researchers or community level organisations and experts, who often have valuable information and may not have vested interests in the findings. There is a neglect of inputs from the private sector and NGOs even though private providers provide the bulk of ambulatory services in India.⁵ Evaluation of health services is done with little emphasis on assessing equity in health provision. There is widespread indifference when it comes to using evaluation records for promoting equitable access or improving outreach activities.⁵

Data collection, compilation and analysis need to be structured in a manner that can enable realtime monitoring, process corrections, evaluation, surveillance and monitoring with clear-cut guidelines on what is to be collected, when and how it is to be collected and who collects, analyses and uses it.

d) Inadequate Attention to Quality of Health Care Services

In India, the quality of health care services provided by both public and private sectors remains largely an unaddressed issue, despite widespread critiques by health researchers and NGOs, and some pilot work done by UNFPA in a few states, and a more recent attempt by the NHSRC to develop and promote systematic guidelines and manuals. Current policies and processes for health care are inadequate to ensure health care services of acceptable quality and to prevent negligence or malpractice. "India lacks national or regional structures charged with conducting routine quality assessments."³

Systematic health-care quality assessments and controls are desperately needed to overcome major hurdles such as the "under use of key public health services and supply- induced over-utilization of new technologies."³ A national-level accreditation body needs to be established that can assess facilities based on standard guidelines and protocols for provision of quality care and management of their own resources (human, infrastructure and logistics).

e) Poor Personnel Management

Human Resource Management (HRM) is another neglected area. The "effectiveness of recruitment and retention policies" is seldom evaluated by the MoHFW.⁵ Also, there is a near absence of an effective performance management system in the government, with almost no real processes for identifying and harnessing leadership potential. Support for addressing HRM issues at the sub-national level is even weaker.⁵ Better defined human resource policies for assessing workforce needs and support for their development are clearly needed. Systematic appraisal of existing human resources, based on the growing needs and demand of the population, is also critical for future planning.⁹

Lack of managerial autonomy is a significant human resource issue affecting performance but conflicting views exist. A study from India reported the opinion of district managers who said more autonomy will help them do their job better, while their superiors felt that they had given enough powers to their managers.¹⁰ Managerial autonomy, especially in personnel matters, favours development of a positive organisational climate and improves performance.^{2,11} Equally important is the fact that performance management systems in India have traditionally focused on inputs rather than concentrating on results and outcomes. In an internal study of the performance management systems implemented by the Indian government, the Second Administrative Reforms Commission says the following on the conventional performance management system in government:

"Traditionally governance structures in India are characterized by rule-based approaches. The focus of the civil services in India is on process-regulation. With such focus on processes, systems in government are oriented towards input usage - how much resources, staff and facilities are deployed in a scheme, program or project and whether such deployment is in accordance with rules and regulations. The main performance measure thus is the amount of money spent; and the success of the schemes, programs and projects is therefore generally evaluated in terms of the inputs consumed."^{12,13}

f) Weak Management of Logistics and Supply Chains

Effective management of logistics and supply chains is an important ingredient of an effective health system. The existing policies and operational procedures for procurement, supply and utilization of drugs, as well the various medical products and devices are far from streamlined.

Details of the various issues are dealt with in the chapter on Access to Medicines, Vaccines, and Technology.

g) Overly Centralised Financial Management

Although a process of growing modernization and computerization of financial management is under way, major challenges remain. Among these, an important one is in the handling of centrally sponsored schemes in which the central government designs the scheme and provides funds (conditional or unconditional) to the states. The central government usually covers a substantial part of the costs initially and the states put in their funds later. Even though these schemes are not binding on the states, "the fiscal leverage of the large initial central contribution makes them attractive."⁴ Nevertheless, states often do not respond adequately, and the challenges this poses are not minor ones.

h) Poor Accountability to Patients and Communities

Communities and users of health services can report on their experiences with various health services by voicing their opinions and providing public feedback. However, no amount of choice, control or input from the community is useful unless users have reliable and accurate information on the services they are supposed to be monitoring. For example, the Indian government publishes a service charter that promises a set of minimum standards from government service delivery agencies. But no information is provided on what needs to be done if the standards are not being met, thereby giving no real incentive to service providers to perform.^{2,14} The existing information asymmetry problem in health needs to be overcome by putting much more information about services and service providers out in the public domain. The key purpose of disseminating information is to bring about general awareness of expected standards of service delivery and provider performance.

Partnerships between government and NGOs and researchers are critical to the successful evaluation of services at clinical and community level. Often, there is lack of converging evaluation efforts between governmental and non-governmental entities in assessing access and barriers related issues in health services. The health sector is only now waking up to the concept of community co-management of public services, whereas the education sector has long been benefited from such arrangements.⁵

Raising public awareness and building social participation is critical for the success of a public health system. Amongst other things, it builds constituencies and public support for policies and programs, generates compliance with regulations, and helps alter personal health behaviour.⁵

3. Management Reforms in the Indian Health Sector - Experiences to Date

Since the start of the economic reforms in the 1990s, there have been various initiatives to reform and support the development of the health sector, both at the centre and in different states. Many of these healthsector reforms at the state level have been influenced by donor agencies.¹⁵ They generally include diverse initiatives to improve the management of the public health system and to support the development of public-private partnerships (PPPs). Efforts to improve management and regulation of the private sectorinformal, private or corporate - have been generally much weaker and poorly funded, if at all. The challenges posed to Universal Health Coverage by a largely unregulated private sector, large and small, have been consistently raised by civil society. However, they have received less attention from funding agencies.

The advent of the National Rural Health Mission (NRHM) in 2006 led to a number of experiments in different states aimed at decentralising financial management and raising the autonomy of health providers at sub-state and

sub-district levels. Increased availability of untied funds and attempts to engage local communities through various modes of social participation have ranged from the setting up of Rogi Kalyan Samitis in hospitals to attempts at strengthening village level health planning through Village Health and Sanitation Committees, as well as increasing the role of elected panchayats in supporting health care provision.

Hospital Development Committees (or societies) have been formed in some states with representation from the local community, and these have been given powers and responsibilities to monitor the functioning of health institutions. These committees have functional autonomy and have been entrusted with rights and responsibilities with the intent to improve the functioning of public hospitals through better management and service delivery to patients. While these attempts have had mixed success, they have generated a data base of experience on the basis of which reforms can evolve further. It must be noted that many of these reforms have tended to be more effective for curative services and are a less appropriate platform for public health and preventive and promotive services.

One area where there is promise of significant systemic improvement is in the procurement of drugs and medical supplies. The well-documented success of the Tamil Nadu Medical Services Corporation Ltd (TNMSC), which pioneered a system of centralized procurement and supply, is now being emulated in a significant number of states.¹⁶ TNMSC's information technology- enriched procurement and distribution system has been shown not only to improve the matching of demand and supply for drugs and medical supplies, but also to check leakages and corruption. The end result has been increased availability of drugs to patients in the public system. In addition, centralized procurement of generics significantly reduces the cost of drugs that have been a major contributor to cost escalation in health care, particularly in the last three decades.

Another area of attempted management reforms has been in relation to the health workforce. Workforce management policies that are intended to improve health service providers' morale and professional satisfaction have been tried in some states. The attempted measures have ranged from educational to regulatory ones.¹⁶ Some relate to retention of the workforce or to high priority or underserved areas through the provision of both monetary and nonmonetary incentives and more rational transfer policies.

However, policy measures to improve the working and living conditions of health workers and to rationalize the deployment of personnel have not been a strong part of reforms. Again, the positive Tamil Nadu experience of creating a separate public health cadre leading to improved public health functions, has not (unlike the case of drugs logistics) been followed by other states. Under NRHM, some attempts have been made to hire consultants to fulfill basic administrative needs, such as accounting and information technology (IT), and to reduce the burden of these tasks on medical officers in the PHCs and CHCs. While the presence of these contract employees is generally appreciated by medical officers, they do not yet provide the significant and integrated approach to management that is needed by both public health and health services.

An ongoing, frequently voiced concern of senior health managers is the concern not to create new cadres of permanent health workers who may become difficult to discipline and may have low productivity.¹⁶ Consequently, the NRHM has tended to make new appointments on contractual terms, usually of one to three years duration.

However, excessive reliance on 'hire and fire' threats to ensure workforce performance belongs to an earlier generation of approaches to worker management. In more recent times, improved systems of performance management and review are starting to be implemented that involve workers in management and focus on quality

improvement and incentivisation at both individual and group levels. A change in mindset towards more modern and creative approaches to worker management is clearly needed.

A fourth set of changes relates to drawing the private sector into health provision for the public system. A variety of PPPs have been tried in the last two decades in order to implement improved management methods into the public system by devolving public services to private contractors. While the contracting out of ancillary services such as laundry, cleaning, food provision, and diagnostic testing have been going on for quite some time, the recent thrust has been to engage the not-for-profit sector as well as profitmaking contractors to provide other specific services. Private providers have been drawn in to provide health services, as in the Chiranjeevi scheme in Gujarat and NGOs and charitable trusts have taken up the responsibility of managing and upgrading the infrastructure of some of the public health facilities in seven states (Arunachal Pradesh, Assam, Bihar, Meghalaya, Madhya Pradesh, Orissa and West Bengal). The effectiveness of many of these partnerships has not been evaluated and their general replicability to address the issue of providing good quality services in hard to reach areas has not yet been proven.¹⁷

The lessons from many of these partnerships include the need for government health-sector managers to have the capacity to manage private contracts and the ability to effectively define and enforce the obligations of the private sector and NGO providers as well as the government functionary.¹⁸

A review of various reports by the MoHFW and other stakeholders working in the health arena provides a reasonable understanding of the implementation of the different reforms cited above. However, there is still a paucity of evaluative evidence to present a strong case on the effectiveness of many of these reforms. An in-depth understanding of the mechanism of

implementation of these reforms can serve as the scaffolding on which to build the future framework of management reforms in health for India. In the meanwhile, we have drawn from the existing evidence as well as the experiential knowledge of health managers to make the following recommendations.

4. Recommendations for Management/Regulatory Reform

Key Assumptions

The management / regulatory reforms recommended here are premised on the overall

assumption that Universal Health Coverage (UHC) will be implemented through a tax-based system, with both public and contracted-in private providers who will be integrated into the system. It will be cashless at the point of service. All patients will get the same services in the UHC system, with smart entitlement cards to facilitate both patient and service monitoring. In integrating both public and contracted-in private providers within a single system, it is necessary to move beyond ad hoc PPPs towards a better-regulated and managed system through new institutions and systematic capacity building in both sectors to design and manage contracts.

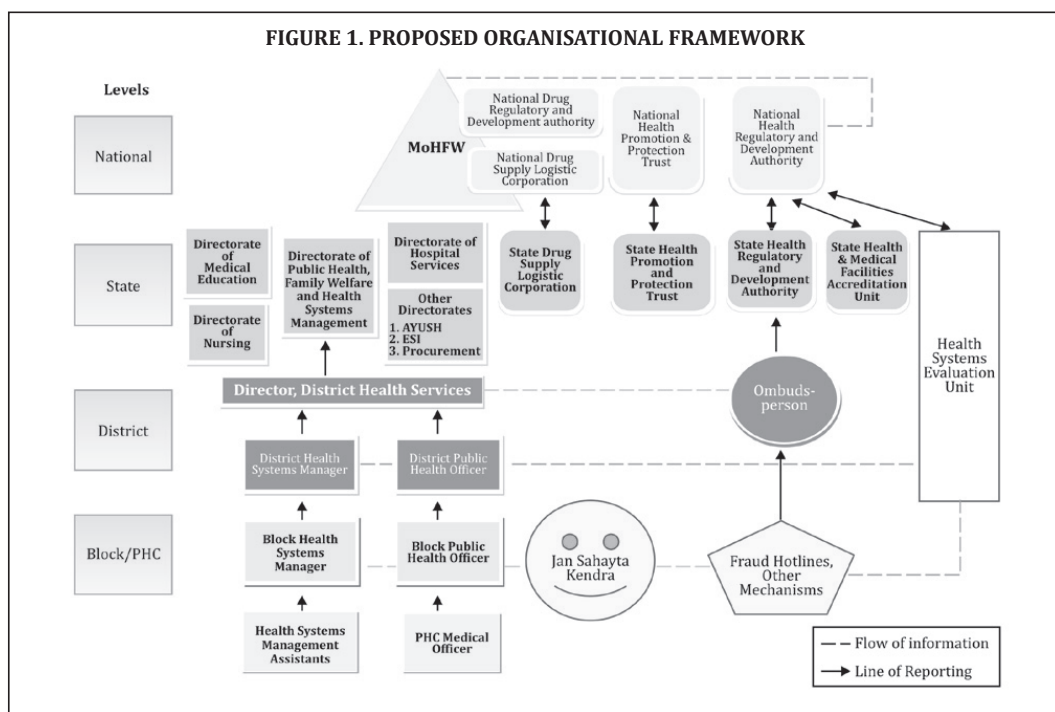
Table 1. Summary of The Scope of The Management/Regulation Recommendations

		Public Sector	UHC Private Sector	Non-UHC Private Sector
(1)	(2)	(3)	(4)	(5)
1.	National Health Regulatory and Development Authority (NHRDA)	Yes	Yes	Yes
a)	System Support Unit (SSU)	Yes	Yes	Yes
b)	National Health and Medical Facilities Accreditation Unit (NHMFUA)	Yes	Yes	Yes
c)	Health System Evaluation Unit (HSEU)	Yes	Yes	Yes
2.	National Health Promotion and Protection Trust (NHPPT)	Yes	Yes	Yes
3.	Health System portal	Yes	Yes	Yes
4.	Drugs and Medical devices Regulatory and Development Authorities	Yes	Yes	Yes
5.	Accountability to patients / community	Yes	Yes	Yes
6.	Health Systems Management and Public Health cadres	Yes	No	No
7.	Performance Management	Yes	No	No
8.	Drugs Supply Logistics Corporations	Yes	Can opt in	No

Management and regulatory improvements will therefore be required at the overall system level. In addition, reforms are also being recommended to improve the functioning of both public sector and private health institutions, as well as to smoothly integrate contracted-in private health institutions into the new UHC system. While all the recommendations below apply to the public sector institutions, some do not apply to either the contracted-in private providers or to the non-

UHC private providers. A summary of the scope of the recommendations is given in the following table.

The following diagram gives a snapshot view of the recommended organisational framework and the placement of the National Health Regulatory and Development Authority, HSEU along with other bodies described in later recommendations.



Recommendation 1: Establish a National Health Regulatory and Development Authority (NHRDA) statutorily empowered to regulate and monitor / audit both the public and the private sectors, and ensure enforcement and redressal.

The NHRDA will be linked to the Ministry of Health and Family Welfare (independent, similar to the Office of Governor, RBI vis a vis the Ministry of Finance) and will have strong statutory powers to regulate, monitor/ audit and ensure enforcement and redress for all providers. This authority will be supported at the state level

by State Health Regulatory and Development Authorities (SHRDAs) with corresponding powers. The entry of states into the UHC system will be predicated on their setting up SHRDAs with powers determined uniformly across all states.

This regulatory and development body will be responsible, inter alia, for:

- i. overseeing and enforcing contracts for public and private providers in the UHC system accreditation of all health providers
- ii. formulation of Legal and Regulatory norms for facilities, staff, scope, access, quality and rationality of services, and costs of care with clear norms for payment
- iii. standard treatment guidelines and management protocols for the for the National Health Package so as to control entry, quality, quantity, and price
- iv. development and enforcement of patients' charter of rights including ethical standards and institutions of a grievance redressal mechanism
- v. evolving and ensuring adherence to standard protocols for treatment with involvement of professional organisations
- vi. establishing and ensuring a system of regular audit of prescriptions and inpatient records, death audit and other peer review processes

The following three Units are envisioned under the NHRDA:

- i. **The System Support Unit (SSU):** This Unit should be made responsible for developing standard treatment guidelines,

management protocols, and quality assurance methods for the UHC system. It should also be responsible for developing the legal, financial and regulatory norms as well as the Management Information System (MIS) for the UHC system.

- ii. **The National Health and Medical Facilities Accreditation Unit (NHMFAU):**

This Unit should be responsible for the mandatory accreditation of all allopathic and AYUSH health care providers in both public and private sectors as well as for all health and medical facilities. This accreditation facility housed within the NHRDA will define standards for health care facilities and help them adopt and use management technologies. A key function of this Unit will be to ensure meaningful use of allocated resources and special focus should be given to information technology resources. There should be corresponding state-level data consortium and accreditation agencies (State Facilities Accreditation Unit) under the National FAU to oversee the operations and administrative protocols of health care facilities.

- iii. **The Health System Evaluation Unit (HSEU):**

This monitoring and evaluation unit should be responsible for independently evaluating the performance of both public and private health services at all levels - after establishing systems to get real time data for performance monitoring of inputs, outputs and outcomes.

The diagram below illustrates the division of functions and responsibilities of the three Units under the NHRDA.

The offices of ombudspersons at multiple levels, supported by an investigative staff and with statutory (including suo motu) powers, will constitute the outreach arm of these regulatory

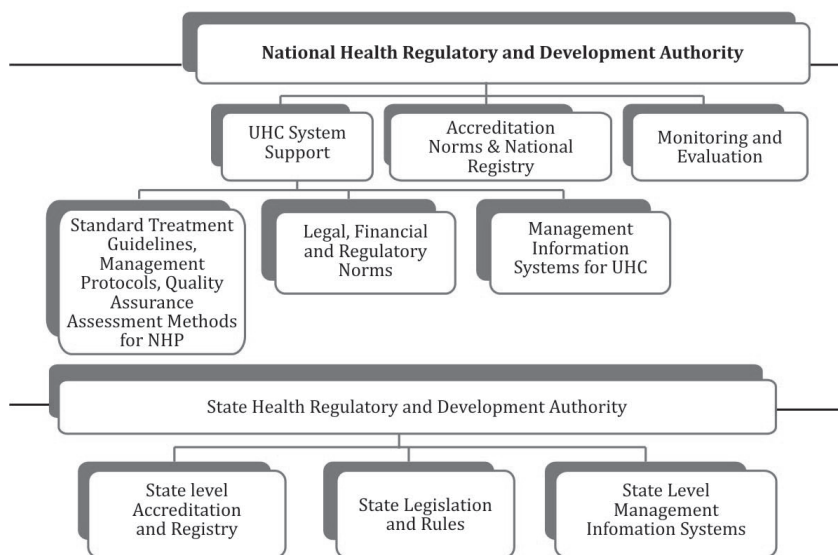
bodies. Fraud hotlines and other mechanisms will be set up to enable the community to reach out to these offices. Community participation mechanisms, such as Jan Sahayata Kendras, that will link citizens/users with these structures, are contained in the recommendations of the Chapter on Community Participation and Citizen Engagement.

Rationale

Regulation of the public and the private sector to ensure provision of assured quality control, scope and pricing of services is an essential management reform in the context of UHC. A structured regulatory framework that can monitor and enforce essential healthcare regulations to

control entry, quality, quantity and price is necessary. Saltman and Busse (2002) posited healthsector regulation as fulfilling two different purposes, historically driven policy objectives versus managerial mechanisms.¹⁹ While regulatory activity deriving from broad social and economic policy objectives tends to be normative and value-driven in nature, such valuedriven decisions tend to change relatively rarely, usually as a consequence of major historical events, such as wars, the end of dictatorships, or political revolutions. The emergence of the National Health Service in the United Kingdom and similar systems in Spain and Portugal, or, of the Unified Health System (SUS) in Brazil after the fall of dictatorships, are some examples. Such changes make it possible to put in place a broad umbrella of values and goals for regulation overall.

FIGURE 2. NATIONAL AND STATE HEALTH REGULATORY AND DEVELOPMENT AUTHORITIES



The second type of regulatory activity is concerned with the specific regulatory mechanisms through which decision-makers seek to attain different types of policy objectives. These management mechanisms are technical and focus on micro-level activities at the level of the sub-sector, facility or institution.

Bennett et al (1994) provide a framework of healthcare regulation identifying various mechanisms, for example, entry to market, quality and safety, quantity and distribution, price, public information and advertising, through which regulators attempt to fulfill health policy objectives.²⁰ Teerawattananon and colleagues later adapted this framework to describe health sector regulation in Thailand.²¹

What is clear from the different approaches to regulation cited above is that regulatory systems in health can be highly complex and that care must be taken to mesh policy goals and objectives to institutional mechanisms.

Recommendation 2: Mandate the accreditation of all health care providers (public and private, allopathic and AYUSH), and registration of all clinical establishments by the National Health and Medical Facilities Accreditation Unit (NHMFAU) of the NHRDA.

All public and private health providers must be accredited by a special unit, the National Health and Medical Facilities Accreditation Unit (NHMFAU), part of the National and State Health Regulatory and Development Authorities. All clinical establishments must be registered under the Clinical Establishments Act. Accreditation-based on benchmarks and standards for quality of

services, performance, facilities, infrastructure, manpower, machines and equipment and drugs-will be mandatory for all providers.

The NHMFAU will be mandated to do the following:

- * Define standards for healthcare facilities to qualify for different levels of the healthcare pyramid. Healthcare facilities will be required to receive NHMFAU accreditation every three years and will receive a score on how well they meet the required standards. The score will provide each healthcare facility with an objective score of performance and comparison to peer facilities. There will also be a process to adjust the health entitlement packages as per the needs assessed by structured review of patient volumes and disease burden.
- * Provide implementation support to health care providers to help them adopt, implement, and use certified Health Systems Management (HSM) technology. NHMFAU will gather data and conduct research to identify best practices on implementations of certified health systems management technologies and provide templates for effective use to healthcare facilities.
- * Establish criteria and a process to certify vendor HSM technology that can support meaningful use criteria. NHMFAU will work on defining a process for vendor certification, according to meaningful use criteria, and the vendor products for their applicability to diseases of national priorities.

Table 2. Health Sector Management Mechanisms

Regulating quality and effectiveness: assessing cost-effectiveness of clinical interventions; training health professionals; accrediting providers

Regulating patient access: gate-keeping; co-payments; general practitioner lists; rules for subscriber choice among third-party payers; tax policy; tax subsidies

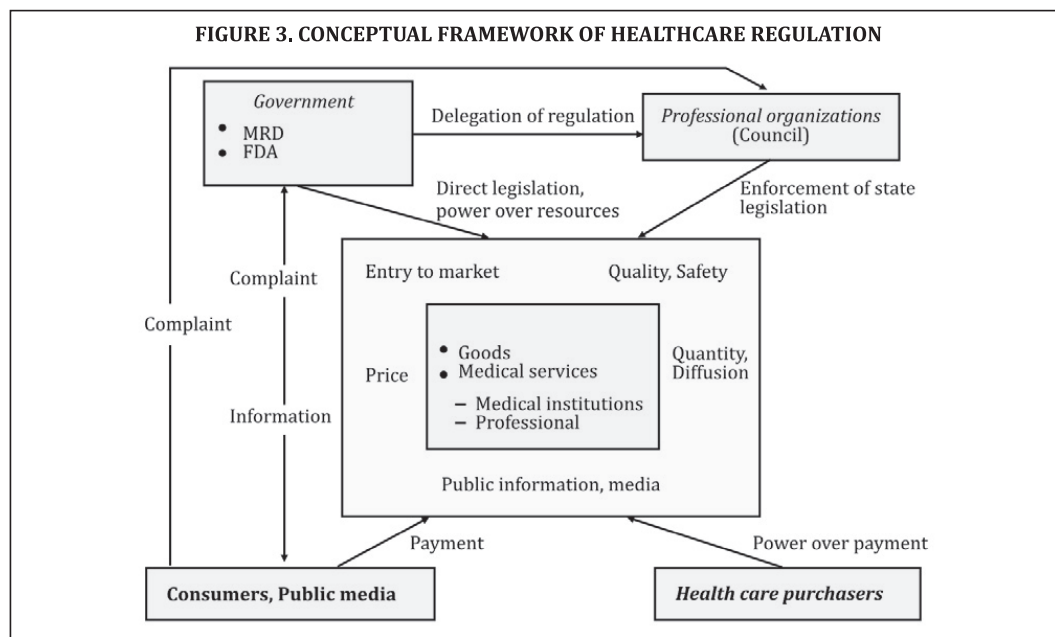
Regulating provider behaviour: transforming hospitals into public firms; regulating capital borrowing by hospitals; rationalizing hospital and primary care/home care interactions

Regulating payers: setting rules for contracting; constructing planned markets for hospital services; developing prices for public-sector health care services; introducing case-based provider payment systems, (e.g., diagnostic-related groups); regulating reserve requirements and capital investment patterns of private insurance companies; retrospective risk-based adjustment of sickness fund revenues

Regulating pharmaceuticals: generic substitution; reference prices; profit controls; basket-based pricing; positive and negative lists

Regulating physicians: setting salary and reimbursement levels; licensing requirements; setting malpractice insurance coverage

Source: Saltman and Busse (2002)¹⁹



Source: Bennett et al (1994)²⁰

Rationale

A robust system of accreditation and certification will be essential to address the inherent problem of information asymmetry in the health sector, the growing complexity that comes with the development and implementation of technology and finally, the major health problems that India faces today, including the co-existence of infectious and non-communicable diseases and the mix of multiple public and private providers. Such a system will have to be IT-enabled so that technology can be harnessed to ensure quality and accountability.

Recommendation 3: Establish a system to independently evaluate the performance of both public and private health services.

The recommended Health System Evaluation Unit (HSEU) is envisaged as an autonomous body, set up under the National and State Health Regulatory and Development Authorities, whose specific objective is to evaluate and guide the delivery by the health system at all levels of both the public and the private sector. This performance monitoring will use several methods including systematic data collection of health care delivery components (including preventive and promotive services) through predetermined indicators. Establishment of feed-back loops would support use of this data for evidence-based planning.

Other methods include innovative IT solutions that will help monitor the quality of health care delivery on a routine basis. The HSEU will use technology (IT platforms are detailed further in Recommendation 4 below) for data capture, processing, storage, reporting and analysis. The data will be collected on an ongoing basis and random checks will be performed as well. The aim is to evaluate the content and quality of the delivery of public and private health care systems.

The main sources, required for an integrated evaluation system include inter alia the collection of information on the status - scope, quality, access, effectiveness and responsiveness - of health care delivery (both public and private health care providers), proper functioning of diagnostic services, specific surveys related to Quality of Care (QoC) and financial monitoring. Relevant analysis from project and policy evaluation will highlight the outcomes of previous interventions, and the strengths and weaknesses of their implementation. This may be used to improve both the design and functioning of the existing system.

The HSEU will have operational units at the peripheral (block), district and the state levels with connections to the central observatory, the National Health Regulatory Development Authority (NHRDA). The HSEU units will be staffed by public health specialists and data management experts and will draw on external expertise as well as youth or older volunteers who can support the gathering of data and evidence. Each unit at the block and district levels would work in close partnership with civil society partners and community support mechanisms as well as the local ombudsmen of the State Health Regulatory and Development Authority (SHRDA). Such participatory engagements with the community will help foster local ownership.

The HSEU will be set up as an integrated, functionally responsive system at different levels rather than as a single hierarchical unit. Decentralization of the decision-making process will ensure timely and effective response to evidence needs and opportunities. In the context of decentralization and health sector reform, demands for monitoring the performance of the health sector necessitate clarity on planned targets and measurement of results. These processes require explicit standards for measuring performance, clear specifications of the relationship

between inputs and outputs, and use of valid indicators to compare actual achievements with planned targets and outcomes.

One of the main challenges for the HSEU system will be institutionalizing the process so that it reaches all levels, the center, state and periphery. The other challenge will be to ensure participatory engagement by multiple stakeholders and convergence with other relevant sectors such as nutrition, water and sanitation.

Rationale

A system for continuous evaluation needs to be set in place to inform managers, decision-makers and policy makers on the links between inputs, outputs and outcomes of health services and programs. Currently, program evaluations in the public health sector are stand-alone, not independent of program or service implementers, and rarely based on outcomes. The proposed HSEU is envisaged to fill this gap. HSEU will provide a basis for accountability in the use of development resources. Commitment, ownership as well as capacity building of the HSEU are important for a robust, efficient and effective health system.

Recommendation 4: Establish a National Health Promotion and Protection Trust (NHPPT) to play a catalytic role in facilitating the promotion of better health culture amongst the people, the health providers and the policy-makers.

This will be an autonomous entity at the national level with chapters in the states and will draw upon the strengths and experiences of similar efforts nationally and internationally. The NHPPT would be responsible for:

- * Facilitating the promotion of a culture of good health among citizens, providers of health services and care in the public and private sector, policymakers and opinion leaders, the media and stakeholders in health. This would be brought about by providing funding and technical support for new, continuing, and additional projects on the Social Determinants of Health (SDH) with key collaborators and stakeholders; and by developing policies and institutional frameworks that serve to act on SDH and promote good health through policies on tobacco usage, alcohol and processed food by drawing on local context and examples from international best practices.
- * Dissemination of health information on a variety of issues and diseases from the policy arena, research projects, civil society initiatives and other sources. This would also include information on the health system and accountability mechanisms via linkages with the HSEU and the National and State Health Regulatory and Development Authorities. Dissemination would also occur through the Jan Sahayta Kendras and health assemblies (see chapter on Community Participation and Citizen Engagement), and health promotion events at the grassroots level, by a variety of means including interpersonal communications, group and community outreach and mass communications, as appropriate. The idea of a television channel dedicated to health (akin to the Lok Sabha channel) may also be considered at the national and/or state level. Dissemination would include information to the public about new health products, healthy behaviours, relevant health promoting entitlements policies, as well as warnings against harmful products

and behaviours, and policies. Health information will be made available in natural and human-made disasters and other emergency situations.

- * Examining the health implications of other sectors including health impact assessments, thereby creating enabling environments for health. The details are discussed under the recommendations on Social Determinants of Health (SDH).
- * Collaboration with international partners on information-sharing related to SDH to ensure that the best practices, policies, and lessons from the global context are appropriately disseminated to Indian policymakers, practitioners and the public.

Rationale

The focus of health services in both the public and private sector has been on curative care with less or at times negligible emphasis on preventive and promotive care. Apart from provisioning all aspects of care, it is the responsibility of the public health authorities "to anticipate, monitor and avert health threats of all kinds." In other countries, specific agencies address issues as such occupational health and environmental health in the United States and most European countries have agencies to monitor water supply, solid waste and sewage disposal, housing, food supply and others that may impact health.⁴

We believe that a beginning needs to be made in this direction through the establishment of a Health Promotion Trust that can facilitate and catalyze public awareness about key social determinants of health, provide technical and expert advice to the ministry of health. It will also conduct key assessments and disseminate knowledge about the impacts of nonhealth sectors and policies on the health of people.

Recommendation 5: Establish a Health System portal to strengthen the use of information technology for better performance by both public and private sectors.

Information technology will be used as a major enabler for performance management including financial management through real time data flow to the HSEU, and through entitlement cards that will capture patient history and treatment. This will ensure full tracking of patients, portability of information, and lead to the creation of a central database with state wings, which in turn will provide information relevant for management of the health system such as health facility utilization rates. The system must guarantee data protection and patient privacy and ensure that ethical considerations in data collection, analysis and use are built in and enforced.

It will also be the backbone for other management innovations such as the use of electronic banking for financial management, the functioning of the HSEU and the NHRDAs and SHRDAs. IT-based monitoring systems for real time tracking of services like the use of entitlement cards by the patients and use of ebanking for transfer of funds will be applicable to both the public sector and the "contracted in" private sector as a measure of management control. In addition, the various regulatory bodies will also use IT-enabled systems to ensure that non-UHC private providers comply with regulatory requirements.

The institutional home for IT in the health system will be NHMFAU (mentioned previously in Recommendation 2), which will also do the following:

- * Oversee adoption of health information systems and define standards of meaningful use of resources and health management systems infrastructure. NHMFAU will

promote use of health systems management information systems and will define stages of meaningful use with stages organized over time. Stage I, meaningful use, will cover one to two years after introduction of health management information systems, Stage II will cover two to five years after introduction and Stage III will cover criteria after five years of introduction of health information management systems. Monitoring protocols and surveillance protocols will be developed and implemented. NHMFAU will oversee use of health systems management portal and its meaningful use.

- * Oversee information documentation, use and exchange between healthcare centers. NHMFAU will develop a Standards and Interoperability framework (S&I framework) to harmonize existing standards and improve sharing of standards across different organisations and federal agencies, making it easier to broaden interoperability through shared standards for data and services.

- * Ensure clinical interoperability of information to enable seamless transition of patient data between healthcare facilities. Best practices will be defined and disseminated to ensure optimal use of NHEC.
- * Define and promote standards of patient privacy and ethical use of patient data. NHMFAU will develop an accreditation process, standards and monitoring protocol to ensure patient privacy and ethical use.
- * Ensure that allied agencies can send and receive information from healthcare facilities. NHMFAU will develop procedures to monitor exchange of information with

public health agencies, research organisations, regulatory authorities and educational institutes.

- * Work to enable information analysis, coordination of health care strategies and work towards real-time epidemiology. NHMFAU will serve as a regional information exchange hub to allow for epidemiological analysis and real-time surveillance services.
- * Promote and document healthcare innovations in healthcare facilities. NHMFAU will be mandated to document innovations in the healthcare delivery seen in different healthcare facilities and develop a national database of healthcare innovations within the healthcare systems. NHMFAU will also conduct surveys of technology innovations in their area and exchange this information with other NHMFAU facilities.

Rationale

The use of IT is essential for effective management of the evolving UHC system. Given that the system is intended to cater to the needs of a billion people, and will have to navigate the complexities of a federal governance structure, multiple health systems, and a combination of public and private providers, effective use of IT is an absolute requirement to ensuring that the system is able to meet people's current and growing and changing needs. While the system cannot be introduced in one go, it will have to grow and evolve as the UHC itself evolves. A commitment to using IT and building up the capacity of the health system to use it well has to be made at the highest level.

Recommendation 6: Strengthen the Drugs and Medical Devices Regulatory Authority and expand its scope to include the Development function so as to better regulate the pharmaceuticals and medical devices sector.

This national level body will be responsible for providing a regulatory framework for the development, production, import, export, and use of pharmaceuticals and medical devices. Details are discussed under the recommendations in the chapter on Access to Medicines, Vaccines and Technology.

Recommendation 7: Engage the private sector for provision of health care through a well-defined "contracting in" mechanism, so as to harness the power of the formal private sector but with adequate checks and balances.

A well-defined "contracting in" mechanism is a pathway through which private-sector contributions may be effectively engaged for progress on universal coverage. "Contracting is a purchasing mechanism used to acquire a specified service, of a defined quality and quantity, at an agreed on price, from a specific provider, for a specified period."²²

A stronger partnership between the government as a purchaser and the private sector as a provider would be the guiding principle for these public-private partnerships. Private providers being contracted in for UHC would have to ensure that at least 75 per cent of outpatient care and 50 per cent of in-patient services are offered to citizens. These providers will be reimbursed at standard rates as per levels of services offered, and the NHRDA/SHRDAs would provide the strong regulatory framework and oversight necessary to supervise the contracted-in private sector. Accreditation through NHMFAU would ensure quality of care, rational interventions and medications, safeguarding of patients' rights and

ethical practices. The Health System Evaluation Unit, along with its strong linkages to community monitoring through the office of the ombudsperson, would assess how various inputs are deployed by the provider and track both immediate as well as longer-term outcomes. More details and the rationale are discussed under the recommendations in the chapter on Health Financing and Financial Protection.

Recommendation 8: Ensure strong linkages and synergies between management/regulatory reforms and accountability to patients and communities through systematic and institutionalized efforts.

The interface between the recommendations in this chapter and in the chapter on Community Participation and Citizen Engagement must be institutionalized through the establishment of strong links between the Jan Sahayata Kendras (detailed in the chapter on Community Participation and Citizen Engagement), and the hotlines and offices of health ombudspersons in the NHRDAs and SHRDAs. These must be clearly worked out, adequately funded and well resourced. They must also be linked to the HSEU's ongoing monitoring and evaluation mandate in order to ensure that community experiences are effectively reflected in the HSEU's monitoring and evaluation work and thereby in design changes and improvements.

Rationale

There is increasing awareness in the government of the need for community involvement not only to ensure voice and accountability to citizens but also to improve the performance of public systems and delivery of services. Under NRHM, there have been laudable attempts to strengthen community participation in planning and monitoring of health service provision. Nonetheless, one of the unresolved challenges is that

community involvement often is disconnected from the rest of the system, with the feedback loops remaining weak or non-existent.

We propose filling this gap by linking citizen voice and redressal mechanisms to the accountability mechanisms being built in through the national and state regulatory authorities.

Recommendation 9: Introduce a specialized state level Health Systems Management Cadre and All India and state level Public Health Service Cadres in order to strengthen the management of the UHC system and also give greater attention to public health.

The setting up of separate Health Systems Management (HSM) and Public Health cadres

that are well integrated with other departments and functionaries is recommended to address both the management and public health related inadequacies in the present system and to incorporate principles of professional management into decision-making in health institutions. This will give a strong thrust to the public health function-the preventive and promotive aspects of health-while also strengthening management.

The qualifications and experience of these proposed cadres have to be thought through carefully to determine appropriate levels so that they will mesh smoothly with the existing medical professionals. At the lower levels, these cadres will have a background in health management and / or public health, while at higher levels, they will have experience and credentials in both. The proposed cadre structure is as follows:

Proposed Health Systems Management Cadre

Level	Designation	Career Pathway	Qualifying Criteria	Reporting to	Functions	Remarks
Primary Health Center	Health System Management Assistants		Bachelor's Degree in Management	Block Health Systems Manager	* HR * IT * Finance Work in coordination with the Medical Officer (PHC)	Lateral entry possible for peripheral health workers/ paramedical staff fulfilling qualifying criteria
↓						
Block (Block Program Management Unit)	Block Health Systems Manager		Master's in Business Administration (MBA) with specialization in Health Management plus work experience (for defined time period)	District Health Systems Manager	* HR * IT * Finance * Community participation, * Quality assurance * PPP functions Work in coordination with Block Public Health Officer	Lateral entry possible for medical officers; AYUSH/ nursing / BRHC professionals fulfilling qualifying criteria
↓						



(Contd.)

Proposed Health Systems Management Cadre

Level	Designation	Career Pathway	Qualifying Criteria	Reporting to	Functions	Remarks
District (District Program Management Unit)	District Health Systems Manager	↓	Master's in Public Health plus work experience (for defined time period)	Director, District Health Services	* HR * IT * Finance * Community participation * Quality assurance * PPP functions * Planning * Procurement and logistics management Work in coordination with District Public Health Officer	
	Director, District Health Services	↓ ↓ ↓ ↓	Work experience (for defined time period) as District Public Health Officer/ District Health Systems Manager	Director, Public Health, Family Welfare and Health Systems Management	Supervision of all services * Preventive * Promotive * National Health Programs * Curative (at District Hospital /Sub-district Hospital / CHC/ PHC level) * Trainings	Overall incharge for the district. Will supervise the curative, public health, management services and the District Health Knowledge Institute
State (Directorate of Public Health, Family Welfare and Health Systems Management)	Deputy Directors, Joint Directors, Directors	↓ ↓	Work experience (for defined time period) as District Health Systems Manager / District Public Health Officer/ Director, District Health Services			


(Contd.)

Proposed Public Health Cadre

Level	Designation	Career Pathway	Qualifying Criteria	Reporting to	Functions	Remarks
Primary Health Center (PHC)	Medical Officer		MBBS, Induction training	Block Public Health Officer	<ul style="list-style-type: none"> * Preventive * Curative * Promotive Work in coordination with the Health System Management Assistants	
Community Health Center (CHC)	Medical Officer			Block Public Health Officer	<ul style="list-style-type: none"> * Preventive * Curative * Promotive Work in coordination with the Block Health System Manager	Medical Officers from CHC may follow the curative services pathway and move to subdistrict district hospitals
Block	Block Public Health Officer		Master's in Public Health plus work experience (for defined time period) at primary health care level	District Public Health Officer	<ul style="list-style-type: none"> * Preventive * Promotive * Supervision of curative services (at CHC/PHC level) Work in coordination with the Block Health Systems Manager	Lateral entry possible for qualified public health professionals with experience (AYUSH / nursing/ BRHC/ Epidemiologists etc.)
District	District Public Health Officer		Work experience (for defined time period)	Director, District Health Services	Supervision of all services <ul style="list-style-type: none"> * Preventive * Promotive * National Health Programs * Curative (at CHC/ PHC level) Work in coordination with the District Health Systems Manager	

(Contd.)

Proposed Public Health Cadre

Level	Designation	Career Pathway	Qualifying Criteria	Reporting to	Functions	Remarks
	Director, District Health Services		Work experience (for defined time period) as District Public Health Officer/ District Health Systems Manager	Director, Public Health, Family Welfare and Health Systems Management	Supervision of all services * Preventive * Promotive * National Health Programs * Curative (at District Hospital/ Sub-district Hospital/ CHC/ PHC level) * Trainings	Overall in-charge for the district. Will supervise the curative, public health, management services and the District Health Knowledge Institute
State (Directorate of Public Health, Family Welfare Systems Management)	Deputy Directors, Joint Directors, Directors			Work experience (for defined time period) as District Health Systems Manager/ District Public Health Officer/ Director, District Health Services		

The Health Systems Management Cadre will be responsible both for improving the management of institutions as well as working with the Public Health Cadre to strengthen the public health functions. Health Systems managers will be expected to provide significant management inputs for managing public sector service provision as well as the contracted-in private sector. (Oversight of these contracts would rest with the N/SHRDAs but their day to day management would be with the Health Systems managers).

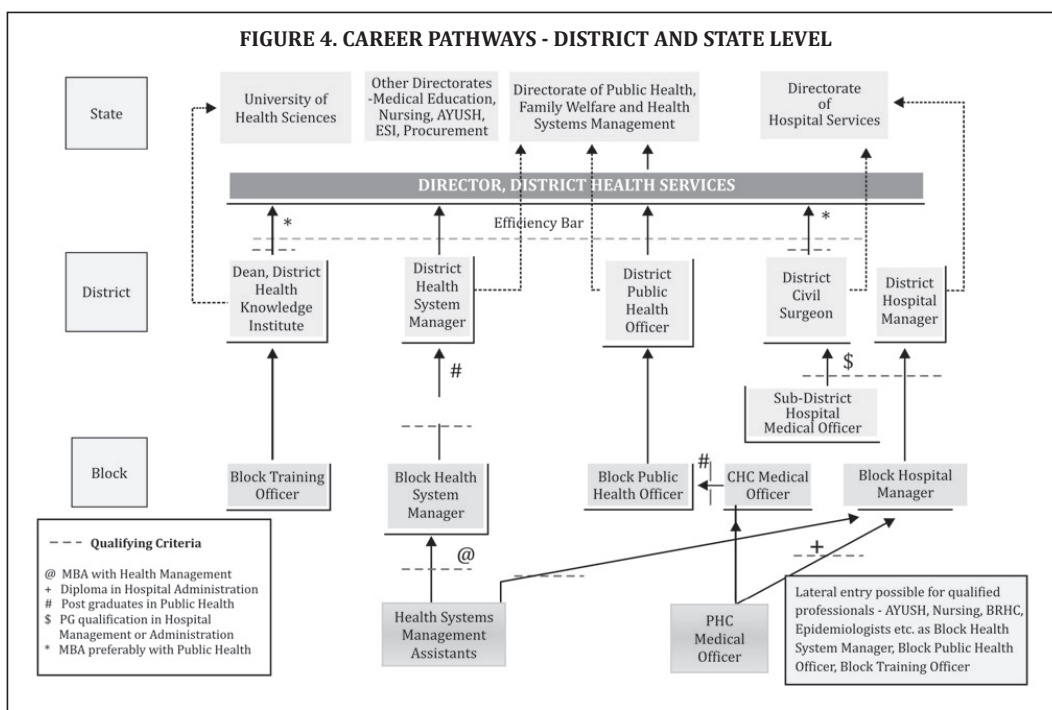
A major function of the HSM cadre will be to improve the quality of the functioning of health institutions by applying modern management methods in all areas. This will be especially important in the areas of facilities and service

quality improvement. They will be responsible for implementing quality assessment, improvement and quality assurance for public sector health institutions, assisting them at district and sub-district levels to achieve quality certification and accreditation and to sustain these once achieved. These functions would thus improve accountability in the system and move towards more timely and effective responses to the needs of the beneficiaries of public health services. In addition, the cadre would take over much of the managerial functions that are currently overburdening medical personnel in areas such as IT, finance, HR, planning and communication. The appointment of appropriately trained hospital managers at sub-district, district hospitals and medical college hospitals would improve the

managerial efficiency and also enable medical officers and specialists to concentrate on clinical activities.

The responsibility for implementing public health functions would rest primarily with the All India Public Health Service Cadre starting at the block and going up to the state and national level. The Block Public Health Officer would be in-charge at the block level and will supervise the preventive, promotive and curative services at the

PHC and CHC levels. The medical officers at these facilities would report to him. Public health function at the lower level would be conducted jointly by the health service providers at the sub-centers and PHCs, together with the Health System Management Assistants. The latter would also obtain some public health experience in this way. This cadre will be an All India cadre. The medical officers will be recruited at the State level and following a fixed duration of service within the state, will be eligible for all India transfers.



The Director, District Health Services will be the overall in-charge for the district. His role will be critical to effectively supervising the curative, public health, management functions and the District Health Knowledge Institute in the district. At the state level, there will be a separate Directorate of Public Health, Family Welfare and

Health Systems Management (DPH/FW/HSM) in addition to the Directorate of Hospital Services, Medical Education and others. The role of this Directorate (DPH/FW/HSM) would be to recruit, support and oversee the management of the health system, implement performance improvement measures and strengthen public health services.

It would be staffed by professionally trained health system managers and public health professionals who are promoted to the Directorate after a number of years of experience of planning, management and oversight of public health services at lower levels in both rural and urban areas.

Figure 4 presents an illustrative management structure showing the different strands of health professionals that could evolve at different levels of the health care delivery system. The organogram also shows the career paths for different cadres of health professionals with options both for promotion as well as shifting streams for advancement of careers.

Rationale

Since the early years following the establishment of the three- tier health service provision system within the public sector, concerns have been raised about its quality, scope and reach. The UHC is to be built upon a unified system including both public and private providers, but in order for the public-sector institutions to be able to hold up their end, there will have to be a serious, concerted attempt to improve their performance in a variety of ways.

Two major gaps currently exist in this regard - inadequate attention to the preventive and promotive aspects of health (the public health function), and weak management brought on by loading managerial functions onto medical officers from the PHC level upwards, who have almost never received management training or credentialing. While the spine of the health services in the states will always be the medical professionals within it, it is essential to fill both these gaps in creative and innovative ways drawing on the growing availability of people with management credentials and experience as well as with public health degrees (although in smaller numbers). Tamil Nadu state has made significant advances in this regard by passing a Public Health Act, and providing incentives and

career pathways as well as providing higher level leadership in public health. There is considerable evidence to suggest that, as a strategy, this has had significant payoffs in terms of improved public health.²³ However, although Tamil Nadu has been able to go a considerable distance in improving public health, its performance could probably improve significantly by systematic incorporation of modern management methods for handling human resources and logistics, strengthening quality assurance, further integration of IT, and strategic and medium term planning. The creation of a separate program management unit at the block, district and state level under the NRHM has also helped to increase management skills especially at the lower levels. However, currently these units function largely as a support cadre to the rest of the Health Department, and as contract staff in support functions, there are no attractive pathways for this important function.

It is important to note that, given the shortage of trained doctors at every level, it would be a misallocation of scarce resources to divert them to non-medical functions such as management including the management of public health, as is currently being done. Furthermore, as one moves to the higher levels of the health system at the district, state and national levels, clinical credentials are needed less and less as tasks and roles become more and more linked to management, oversight and planning.

The absence of dedicated staff has led to considerable 'ad hoc'ism' in the management of health institutions and an inability to diagnose and correct management failures of which there are many. Nowhere is this more visible than in the area of quality assurance. Although there is wide acknowledgement that the quality of public-sector health facilities (from sub-centres to multi-specialty hospitals) and services leaves a great deal to be desired, the challenge of quality is even now only being addressed in a very limited way.

Both NHSRC and UNFPA are making important attempts to introduce quality assurance into the system. Again, the absence of a cadre whose training and job descriptions include quality assurance means that these attempts are likely to remain limited in their ability to actually transform the public-sector health institutions and system in a sustained way towards improved quality. If the UHC is to move forward with a balanced combination of well-functioning public and private institutions, this will not be enough.

There is, therefore, an urgent need to revamp HR planning for the public-sector health system by focusing on the best ways to focus on neglected aspects of public health, strengthen management inputs from the lowest levels up to the top, and combine clinical, public health and management functions in more organic ways that generate attractive career pathways for all three.

Recommendation 10: Require the use of performance management methods to improve functioning of staff and personnel in public sector institutions.

An important function of the Health System Management cadre will be performance management of the human resources in the public health sector. The HSM cadre's responsibilities would include recruiting, inducting, training, and setting up apprenticeships for newly hired personnel; defining clear-cut career pathways; instilling dedicated and committed attitude through pro-active, coordinated mentoring and motivation programs; team building and providing autonomy and flexibility for executing responsibilities. The cadre would also be in charge of ongoing input/output assessments; adequate and timely monitoring; supportive supervision; performance appraisals and responsive feedback on assessments; and incentives, including those based on the vulnerability index, (e.g., higher payments for hard-to-reach

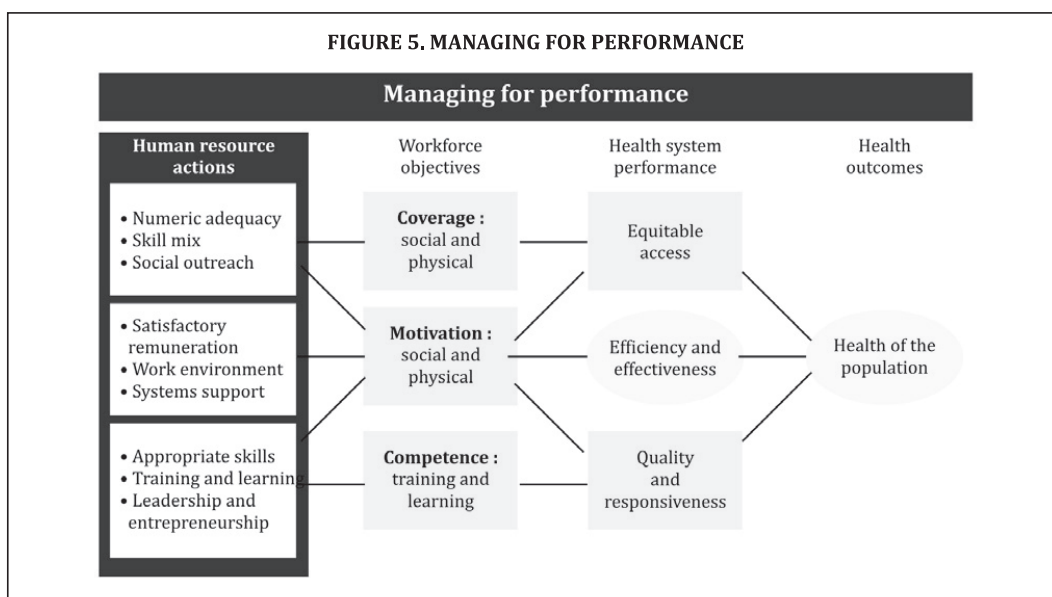
locations). Staff performance would also be supported by better working conditions and clearer systems for supervision and accountability (detailed by the subgroup working on Human Resources for Health).

Rationale

A growing emphasis on managing for results and obtaining value for money invested has heavily influenced health-sector performance assessment in a big way over the last two decades. Although 'results-based management' has limitations especially in diverting attention away from qualitative improvements and becoming a mechanical straitjacket when clumsily applied—the need to get the most return for the investment of public funds is growing. When well used, performance management methods can help to focus attention on the relation between inputs, processes, outputs and outcomes in the health sector.

"Performance management is best defined as the development of individuals with competence and commitment, working towards the achievement of shared meaningful objectives within an organisation that supports and shares their achievement."²⁴ In an ideal environment, these individuals are considered members of a team.²⁵

Performance management can be an invaluable tool for assessing the performance of individuals and groups or teams, and rewarding or sanctioning behaviour. The field of human resource management has evolved by leaps and bounds in the private sector. While examples of the use of outdated and exploitative methods are still plentiful, there are also new approaches to performance assessment that are built on more enlightened approaches and are mutually beneficial.



Source: Joint Learning Initiative (2004)²⁶

Health-sector managers in India (like their counterparts in other sectors) are very wary of creating regular staff positions on a large scale for fear of ending up with yet another category of workers who will have job security but without requirements for delivery. This wariness has led to reliance on contract and piece-rate workers, such as the ASHAs, on the assumption that job insecurity is the only method to ensure worker performance.

Modern human resource management methods suggest, however, that fear is only one possible goad to ensure work, and not necessarily the best one. Workers who function out of fear are typically poorly motivated to deliver more than the bare minimum, will not take risks or innovate, and cannot be trusted to work in teams. This insight was the basis of the labour system pioneered on a large scale in Japanese industry, where workers are viewed as critical contributors to quality and performance management in the system as a whole.

Modern performance management tools use a combination of methods that include both monetary and non-monetary incentives and individual and group rewards. As noted by Seagall (2000)²⁷ "In a situation where health workers get a respectable wage, acceptability of non-material rewards is much higher as employees value them more in the long term; these include peer recognition, a sense of making a contribution to the overall impact of the service, and solidarity with fellow workers."

The use of such tools does not mean that workers who slack off or shirk responsibility go scot-free, but effective HR management is not primarily based on fear. Instead it harnesses many other motivations that lie behind worker behaviour and starts from the presumption that most workers would like to do a decent job and be recognised for it. Those who attempt to beat the system can then be dealt with as they deserve without basing the entire HR system on the lowest common denominator.

Recommendation 11: Set up National and State Drugs Supply Logistics Corporations in order to strengthen the management of logistics and supply chains.

National and state-level utilities will be set up to ensure a transparent structure for bulk procurement and supply of adequate, rational, low cost, generic essential drugs down to the lowest levels which will be managed through an IT enabled system similar to the Tamil Nadu Medical Services Corporation Ltd., (TNMSC). All providers under the UHC (public and contracted-in private providers) will access generic drugs through this system, thereby ensuring significant cost savings and removing leakages from the drugs procurement and distribution system. This is discussed in detail in the chapter on Access to Medicines, Vaccines and Technology.

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NATIONAL URBAN HOUSING AND HABITAT POLICY 2007
Government of India, Ministry of Housing &
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NATIONAL URBAN HOUSING AND HABITAT POLICY 2007

PREAMBLE

Shelter is a basic human need next only to food and clothing. At the end of the 10th Five Year Plan, the housing shortage is estimated to be 24.7 million. However, urban areas in our country are also characterised by severe shortage of basic services like potable water, well laid out drainage system, sewerage network, sanitation facilities, electricity, roads and appropriate solid waste disposal. It is these shortages that constitute the rationale for policy focus on housing and basic services in urban areas. ***This policy intends to promote sustainable development of habitat in the country*** with a view to ensuring equitable supply of land, shelter and services at affordable prices to all sections of society. Given the magnitude of the housing shortage and budgetary constraints of both the Central and State Governments, it is amply clear that Public Sector efforts will not suffice in fulfilling the housing demand. In view of this scenario, the National Urban Housing and Habitat Policy, 2007 focuses the spotlight on multiple stake-holders namely, the Private Sector, the Cooperative Sector, the Industrial Sector for labour housing and the Services/Institutional Sector for employee housing. In this manner, the Policy will seek to promote various types of public-private partnerships for realising the ***goal of Affordable Housing For All***

I. THE NEED FOR POLICY

Urbanisation and Development

- 1.1 "Urban" in India is defined as a human settlement with a minimum population of 5000 persons, with 75% of the male working population engaged in non-agricultural activities and a population density of at least 400 persons per sq. km. Further, all statutory towns having a

Municipal Corporation, Municipal Council or Nagar Panchayat as well as a Cantonment Board are classified as "urban".

- 1.2 India's urban population in 2001 was 286.1 million, which was 27.8% of the total population. Over the previous five decades, annual rates of growth of urban population ranged between 2.7 to 3.8%. During the last decade of 1991-2001, urban population of India increased at an annual growth rate of 2.7%, which was 0.4% lower than that registered during the preceding decade.
- 1.3 The process of urbanisation in India is marked by increasing concentration in comparatively larger cities. In 2001, 68.7% of the total urban population was living in Class I cities (defined as cities having a population of over 100,000). The shares of medium and small towns in the total population stood at 21.9% and 9.4%, respectively.
- 1.4 The spotlight is focused on the mismatch between demand and supply of housing units. 99% of the housing shortage of 24.7 million at the end of the 10th Plan pertains to the Economically Weaker Sections (EWS) and Low Income Groups (LIG) sectors. Given the fact that 26.7% of the total poor in the country live in urban areas, the issue of affordability assumes critical significance. In terms of numbers, 26.7% of the total poor implies 80.7 million persons or about one-fourth of the country's total urban population.
- 1.5 Further, the National Sample Survey Organisation (NSSO) 61st Round reports that the number of urban poor has risen by 4.4 million persons, between 1993-94 to 2004-05. It is, therefore, of vital importance that a new National Urban Housing and Habitat Policy carefully analyses ways and means of providing the 'Affordable Housing to All' with special emphasis on the EWS and LIG sectors.

- 1.6 The number and proportion of cities with a population of one million or more has grown significantly in recent decades. From 12 in 1981 with 26.8% share of the total urban population, the number of million plus cities has increased to 35 in 2001 with 37% share of the total urban population.
- 1.7 The general trend towards urbanisation shows considerable disparity amongst various States/Union Territories (UTs) of India. Whereas States such as Goa, Gujarat, Maharashtra, Punjab and Tamil Nadu have attained over 35% urbanisation (Census: 2001) and are continuing to register growth rates higher than the annual national average; States like Himachal Pradesh (9.80%), Bihar (10.46%), Orissa (14.99%) and Uttar Pradesh (20.78%) have displayed low rates of urbanisation.

Rural To Urban Shift of Labour

- 1.8 The growth of the Indian workforce is also characterised by an increasing level of urbanisation. At the onset of the 21st century (2001), 32% of the total workforce resided in urban areas. According to the 2001 Census, 29% of the urban workforce falls in the category of "*main workers*" and the balance in the category of "*marginal workers*". The male-female composition of the urban workforce is structured in favour of male workers (the male-female ratio being 84:16 in 2001) although there has been some improvement in the volume of female employment. Further, it is of critical significance that 79% of the new jobs totaling 19.3 million between 1991-2001 were generated in urban areas and only 5 million jobs were generated in rural areas.
- 1.9 It is important to highlight the fact that the informal sector in urban areas is growing exponentially. In the decade 1991-2001, workers classified as "marginal workers" registered an increase of 360% as compared

to an increase of only 23% for workers classified as "main workers". As a consequence, the ratio of marginal workers to total workers increased from 2.2% in 1991 to 7.9% in 2001. Further, the proportion of female workers to total workers rose from 14.3% in 1991 to 16% in 2001. In a nutshell, the 1991-2001 decade has witnessed strong trends towards casualisation and feminisation of the urban workforce. Further, wage employment is being progressively replaced by sub-contracting.

Balanced Regional Development

- 1.10 As India's labour force witnesses a rural to urban shift, it is of critical importance that the rural and urban areas develop in a symbiotic manner. The way to bring about such a symbiotic development between rural and urban areas is by adopting "a Regional Planning approach". The objective of such an approach is to develop a symbiotic rural-urban continuum, which is ecologically sustainable. The Town & Country Planning Acts of some States provide an ideal basis for Regional Planning.
- 1.11 There is also a need to develop a special focus on the eight States of the North-Eastern Regional Council due to a lesser level of socio-economic development and on account of the highly sensitive ecology of the region.

New Integrated Townships and Green-Field Development

- 1.12 In view of the fact that 50% of India's population is forecasted to be living in urban areas by 2041, it is necessary to develop new integrated townships. These green-field townships should generally be located on comparatively degraded land excluding prime agricultural areas growing more than one crop with the help of assured

irrigation. These green-field townships should be located at a reasonable distance from medium or large existing towns.

- 1.13 Further, it is also important to develop mass rapid transport corridors between existing medium and large towns and new green-field towns so that the relationship between industry and commerce is developed to an optimum level.

Role of Housing

- 1.14 As per a Central Statistical Organisation (CSO) estimate, the Housing Sector contributed 4.5% to India's Gross Domestic Product (GDP) in 2003-04 at current prices. The contribution of housing in urban areas to the GDP in 2003-04 was 3.13%. Further, the spotlight is focused on the fact that 16% of the Indian work force is engaged in Construction and Transport Sectors. It is estimated that overall employment generation in the economy on account of additional investment in the Construction/Housing Sectors is eight times the direct employment (IIM Ahmedabad: 2005). In view of the substantial use of cement, steel, marble/ceramic tiles, electrical wiring, PVC pipes and various types of fittings; construction activity has a multiplier effect on industrial demand for these items.
- 1.15 At the advent of the 21st Century (2001), the housing stock in India stood at 50.95 million for 55.8 million urban households. Significant segments of this housing stock was characterised by congestion and obsolescence. Congestion is particularly acute in inner city slums and peripheral slums. According to the Census 2001, 61.82 million persons or 23.1% of the urban population resides in slums. The quality of housing stock in slums is extremely poor. An important reason for this is insecurity of tenure. Slums are also severely deficient in

basic services such as potable water, sanitation, sewerage, storm water drainage and solid waste disposal.

- 1.16 Given the degraded habitat in which slum dwellers live and the frequent episodes of illness characterising slum families, it is of vital importance that special attention is paid to urban health and hygiene on the one hand and social and preventive medicine on the other hand. In order to improve the quality of life in urban areas, it is of critical significance that the housing stock is improved through urban renewal, in situ slum improvement and development of new housing stock in existing cities as well as new townships. Further, the enhancement of housing stock must be accompanied with high quality provision of basic services. It is a well established fact that safe, hygienic and spacious provisioning of housing duly buttressed with adequate basic services and a congenial habitat promotes significant improvement in productivity of workers.

Housing Needs

- 1.17 The magnitude of housing shortage was estimated by a Technical Group in the context of formulation of the 11th Five Year Plan. The Technical Group estimated the housing shortage at the end of the 10th Plan to be around 24.7 million for 67.4 million households. The Group further estimated that 99% of this shortage pertains to EWS & LIG sectors. During the 11th Plan, the Group estimated that the total housing requirement (including backlog) will be to the tune of 26.53 million units for 75.01 million households.
- 1.18 Whereas more than 23% of the urban population resides in slum (Census: 2001), a much higher proportion of the urban population of metropolitan cities lives in slums; it is estimated that 55% of the population of Mumbai lives in slums. It is

of critical importance that the strategy of in-situ slum upgradation is adopted for preponderant proportion of the slum dwellers, since they provide valuable services to residents living close to their own dwelling places.

- 1.19 The Working Group on Urban Housing pertaining to the 11th Plan made different assumptions on unit cost of construction of houses in million plus cities and other urban areas for estimating the investment required for overcoming the housing shortage. The total estimated investment for meeting the housing requirement upto 2012 was estimated to be of the order of Rs.3,61,318.10 crores consisting of Rs.1,47,195 crores for mitigating housing shortage at the beginning of 11th Plan and Rs.2,14,123.10 crores for new additions to be made during the 11th Plan period (this includes construction of pucca houses & upgradation of semi-pucca and kutcha housing units).

Magnitude of Poverty

- 1.20 Non-affordability of housing by economically weaker sections of society and low income families in urban areas is directly linked with the magnitude of urban poverty. Poverty in India has declined from 320.3 million in 1993-94 to 301.7 million in 2004-05. While there has been a decline of 18 million persons in the total numbers of the poor in India, the NSSO reports that the number of the urban poor has risen by 4.4 million persons during the same period. One fourth of the country's total urban population, numbering 80.7 million persons is below the poverty line. The urban poor constitute 26.7% of the total poor in the country. The fact that the number of urban poor has risen is in stark contrast with rural poverty, where both the total number of rural poor and its incidence *vis-à-vis* the rural population has fallen.

- 1.21 The urban poor have limited access to basic services. According to the 2001 census, there is a 9% deficiency in drinking water, 26% in toilets and 23% in drainage. It is quite understandable that most of this shortage pertains to Slums.

Development of Sustainable Habitat

- 1.22 Development of sustainable habitat is closely related to the adoption of 'the Regional Planning approach' while preparing Master Plans of towns/ cities, District Plans and Regional/Sub-Regional Plans. It involves maintenance of the ecological balance in terms of a symbiotic perspective on rural and urban development while developing urban extensions of existing towns as well as new integrated townships. Promotion of sustainable habitat is closely linked with reserving a significant proportion of the total Master Plan area as 'green lungs of the city', (e.g., Master Plan for Delhi 2021 provides 20% of green areas), protecting water bodies with special emphasis on the flood plains of our rivers and developing green belts around our cities. It will be desirable to pursue a goal of 20-25% recreational land use area (excluding water bodies) which has been prescribed for Metro-cities by the Urban Development Plan Formulation and Implementation Guidelines (UDPFI) in order to enhance the sustainability of human settlements. Recreational land use refers to parks, playfields and other open space such as specified park, amusement park, maidan, a multipurpose open space, botanical garden, zoological parks, traffic parks, etc. It is also necessary to estimate the Gross Geographic Product (GGP) of a given sub-region and endeavour to enhance it while developing new urban settlements. The new Habitat Policy recognises the sustainability limits of existing urban

settlements. It also seeks to emphasise the mutual inter-dependence between towns and villages.

- 1.23 The new Habitat Policy reaffirms the importance of small and medium urban agglomerates/towns which have potential for future urban growth. The new Policy seeks to accelerate the development of such small and medium towns which can serve as generators of economic momentum while at the same time striving to reduce the rate of migration to existing large cities.

Policies & Programmes

- 1.24 In 1991, India adopted a more 'inclusive' view of economic development by emphasising that it must integrate with the global economy. In pursuance of this, it reduced custom duties and welcomed Foreign Direct Investment (FDI) in several sectors of the economy. The National Housing Policy, 1994 was a product of this economic point of view. The 1994 Policy in its section on "Goals" sought to increase supply of land serviced by basic minimum services with a view to promoting a healthy environment. The National Housing & Habitat Policy, 1998 laid greater emphasis on the aspect of "Habitat" as a supplementary focus to housing. The emphasis on "providing" housing continued in this Policy with emphasis on both quality and cost-effectiveness especially to vulnerable sections of society. The New Urban Housing and Habitat Policy seeks to enhance the spotlight on 'habitat' with a 'Regional Planning approach' as well as further deepen the role of Government as a 'facilitator' and 'regulator'. Moreover, the new Policy lays emphasis on earmarking of land for the EWS/LIG groups in new housing projects. The new Urban Housing & Habitat Policy lays emphasis on Government retaining its role in social housing so that affordable housing is made available to EWS and LIG of the population as they lack affordability and are hopelessly out priced in urban land markets.
- 1.25 (a) The various policies adopted by the Central Government, from time to time, were accompanied by initiation of various programmes and schemes. The National Slum Development Programme (NSDP) had provision for adequate and satisfactory water supply, sanitation, housing, solid waste management, primary and non-formal education. The scheme provided additional central assistance to States to supplement the resources of the State Government for provision of basic infrastructure and services in slum areas. The Swarna Jayanti Shahari Rozgar Yojana (SJSRY) was designed to provide gainful employment to the urban poor by encouraging setting up of self-employment ventures and provision of wage employment opportunities for families below poverty line in urban areas. The Two Million Housing Programme (TMHP) was launched with the objective of 'housing for all' with particular emphasis on the needs of economically weaker sections and low income group categories. The Valmiki Ambedkar Awas Yojana (VAMBAY) aimed at providing subsidies for construction of housing and sanitation for urban slum dwellers living below poverty line in different towns/cities all over the country.
- 1.25 (b) The above mentioned policies and programmes have yielded fairly positive results in the area of housing and habitat. Some increase has been noticed in the supply of serviced land, shelter and related infrastructure. For example, in the first four years of the 10th Plan period, financial assistance was provided for construction of 4,42,369 dwelling units under VAMBAY

scheme. Similarly, total number of beneficiaries under NSDP and SJSRY were 45.87 million and 31.77 million respectively during the same period. The period 1991 to 2001 witnessed a net addition of 19.52 million dwelling units in the urban housing stock (Census: 2001) involving average annual construction of 1.95 million houses. The share of ownership housing in urban areas has increased from 63% in 1991 to 67% in 2001 (Census: 2001). It is important to note that households having one room accommodation declined significantly in urban areas from 39.55 per cent to 35.1 per cent during the period 1991 to 2001. This is a result of upward mobility in accommodation indicating a robust economy and accelerated supply of improved housing stock.

Jawaharlal Nehru National Urban Renewal Mission

- 1.26 The recently launched Jawaharlal Nehru National Urban Renewal Mission (JNNURM) supports 63 cities (7 mega cities, 28 metro cities and 28 capital cities and towns of historical/religious importance) across the country in terms of perspective plans called City Development Plans (CDPs) for specifying infrastructure gaps relating to water, sanitation, sewerage, drainage and roads on the one hand and deficiencies in housing and basic services on the other hand. On the basis of City Development Plans, the JNNURM seeks to fill up the gaps in infrastructure and deficiencies in housing and basic services through appropriate investments. The Mission approach is reform based with releases being made subject to specified reform agenda being implemented. The Mission is reforms driven, fast track planned development of identified cities with focus on efficiency in urban infrastructure, services delivery mechanism,

community participation and accountability of urban local bodies (ULBs) to citizens. JNNURM seeks to encourage private sector participation with the Government providing viability gap funding through the Mission for large projects where the open tendering process shows specific shortage in economic viability. In addition to these 63 cities, urban infrastructure and slums are also being addressed in the remaining Non-Mission cities through the Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT) and Integrated Housing and Slum Development Programme (IHSDP).

- 1.27 The Basic Services for the Urban Poor (BSUP) seeks to provide a garland of 7 entitlements/services - security of tenure, affordable housing, water, sanitation, health, education and social security - in low income settlements in the 63 Mission Cities. The Integrated Housing and Slum Development Programme (IHSDP) seeks to provide the aforementioned garland of 7 entitlements/services in towns/cities other than Mission cities.

Focus Areas

- 1.28 The National Urban Housing and Habitat Policy, 2007 seeks to use the perspective of Regional Planning as brought out in the 74th Amendment Act in terms of preparation of District Plans by District Planning Committees (DPCs) and Metropolitan Plans by Metropolitan Planning Committees (MPCs) as a vital determinant of systematic urban planning. The policy seeks to promote a symbiotic development of rural and urban areas. In this regard, the policy seeks to ensure refinement of Town and Country Planning Acts (wherever required) and their effective implementation.

- 1.29 The core focus of this Policy is provision of "**Affordable Housing For or All**" with special emphasis on vulnerable sections of society such as Scheduled Castes/Scheduled Tribes, Backward Classes, Minorities and the urban poor.
- 1.30 This Policy takes note of the substantive gap between demand and supply both for housing and basic services. This Policy seeks to assist the poorest of poor who cannot afford to pay the entire price of a house by providing them access to reasonably good housing on rental and ownership basis with suitable subsidisation. The Policy seeks to enhance the supply of houses especially for the disadvantaged, duly supplemented by basic services.
- 1.31 This Policy seeks to develop innovative financial instruments like development of Mortgage Backed Securitisation Market (RMBS) and Secondary Mortgage Market. It also seeks to attract Foreign Direct Investment (FDI) in areas like integrated development of housing and new township development.
- 1.32 This Policy draws from innovations in the area of housing and infrastructure in India and elsewhere. It also gives a menu of actionable points which inter-alia includes Public-Private-Partnerships, conservation of natural resources and formulation of regulations & bye-laws that are environment-friendly, investment-friendly and revenue-generating.
- 1.33 This Policy seeks to emphasise appropriate fiscal concessions for housing and infrastructure.
- 1.34 This Policy seeks to accelerate construction activities for giving a boost to employment for vulnerable sections of society.
- 1.35 This Policy aims to promote development of cost-effective, quality approved building materials and technologies with a view to bringing down the cost of EWS/LIG houses.
- 1.36 This Policy aims to complement poverty alleviation and employment generation programmes for achieving the overall objective of "**Affordable Housing For All**" with sustainable development.
- 1.37 This Policy dwells upon the roles of various stakeholders and specific action required pertaining to Land, Finance, Legal and Regulatory Reforms as well as Technology Support and Transfer.
- 1.38 This Policy seeks to accelerate the development of small and medium towns which can serve as a generators of economic momentum with the objective of reducing the rate of migration to large cities.
- 1.39 The Policy lays special emphasis on the development of North-Eastern States on account of the fragile ecology of the North-Eastern Region as well as the need to accelerate the pace of its socio-economic progress. In this manner, the Policy seeks to improve accessibility to the North-Eastern Region.

II. AIMS

2. The National Urban Housing and Habitat Policy aims at:

Urban Planning

- i) Encouraging State Governments, Urban Local Bodies, Development Authorities to periodically update their Master Plans and Zoning Plans which should, inter-alia adequately provide for housing and basic services for the urban poor.
- ii) Promoting balanced urban-rural planning by following the Regional Planning Approach, take the whole State/UT as a region, under the Town & Country Planning Acts in the States.

- iii) Planning of Mass Rapid Transit Systems (MRTS) at the city Metropolitan Planning Area and Sub-region levels.

housing through a pro-active financial policy including micro-finance and related self-help group programmes.

Affordable Housing

- iv) Accelerating the pace of development of housing and related infrastructure.
- v) Creating adequate housing stock both on rental and ownership basis with special emphasis on improving the affordability of the vulnerable and economically weaker sections of society through appropriate capital or interest subsidies.
- vi) Using technology for modernising the housing sector for enhancing energy and cost efficiency, productivity and quality. Technology would be harnessed to meet the housing needs of the poor. The concept of 'green' and 'intelligent' buildings would be put in place on the ground. Technological advances would be disseminated for preventing and mitigating the effects of natural disasters on buildings, e.g., in case of earthquakes, floods, cyclones, etc.

Increase flow of Funds

- vii) Promoting larger flow of funds from governmental and private sources for fulfilling housing and infrastructure needs by designing innovative financial instruments.
- viii) Designing suitable fiscal concessions in congruence with the Housing and Habitat Policy with appropriate monitoring mechanism to ensure that the concessions are correctly targeted and utilised.
- ix) Removing legal, financial and administrative barriers for facilitating access to tenure, land, finance and technology.
- x) Shifting to a demand driven approach and from subsidy based housing schemes to cost recovery-cum-subsidy schemes for

Spatial Incentives

- xi) Innovative spatial incentives like relaxation of Floor Area Ratio (FAR) for ensuring that 20-25% of the FAR are reserved for EWS / LIG and issuance of Transferable Development Rights (TDR) for clearance of transport bottlenecks in the inner-city areas and availability of additional FAR in Outer Zones will be promoted with a view to meeting the housing shortage amongst EWS/ LIG.
- xii) Careful review of authorised Floor Area Ratio (FAR) in line with international practices for allowing more efficient use of scarce urban land by construction of high rise buildings.

Increase Supply of Land

- xiii) Facilitating accessibility to serviced land and housing with focus on economically weaker sections and low income group categories.
- xiv) Suitable restructuring for enabling both institutions at the State and Centre levels as well as the private sector for increasing supply of land. Special Provision for SC/ST/OBC/Minorities/Disabled
- xv) Special efforts for catering to the needs of Scheduled Castes, Scheduled Tribes, Other Backward Classes, Minorities, Disabled persons, slum dwellers, street vendors other informal sector workers and other vulnerable sections of the society in relation to housing and access to basic services.

Special Provision for Women

- xvi) Involving women at all levels of decision making for ensuring their participation in formulation and implementation of housing policies and programmes.

- xvii) Addressing the special needs of women headed households, single women, working women and women in difficult circumstances in relation to housing serviced by basic amenities.

Employment Generation

- xviii) Upgradation of construction skills and accelerated development of housing and infrastructure sectors for giving an impetus to employment generation.

Public-Private Partnerships

- xix) Forging strong partnerships between public, private and cooperative sectors for accelerated growth in the Housing Sector and sustainable development of habitat.

Management Information System

- xx) Establishing a Management Information System (MIS) in the Housing Sector for strengthening monitoring of building activities in the country.

Healthy Environment

- xxi) Developing cities/towns in a manner which promotes a healthy environment, encouraging use of renewable energy resources and ensuring effective solid waste management in collaboration with persons involved in recycling activities.
- xxii) Protecting our cultural heritage and architecture as well as promoting traditional skills with suitable adaptation to modern technologies.

III. ROLE OF GOVERNMENT, URBAN LOCAL BODIES AND OTHER AGENCIES

3. It will be the endeavour of the Central Government in collaboration with governments in States/UTs, Urban Local Bodies and other agencies to implement the aims of the National Urban Housing

and Habitat Policy, 2007 through action-oriented initiatives at all levels of Government. Towards this end, Annual Action Plans will also be prepared at various levels.

3.1 The Central Government would (in consultation with State Governments):

Create a Supportive Environment

- (i) Act as a 'facilitator' and 'enabler' with significant actionable steps being taken by State Governments, Urban Local Bodies, Parastatals and Private & Co-operative Sector and Non-Government Organisations.
- (ii) Advise and guide respective State Governments to adopt and implement the National Urban Housing & Habitat Policy, 2007 in a time bound manner.
- (iii) Promote balanced regional development in the country by suitably decentralising functions relating to development of the Housing Sector and promotion of an ecologically sound habitat.
- (iv) Act as an enabler and facilitator by developing suitable financial instruments for promotion of housing for the EWS and LIG groups serviced by basic amenities.
- (v) Promote Action Plans for creation of adequate infrastructure facilities relating to water, drainage, sanitation, sewerage, power supply and transport connectivity.
- (vi) Develop economically viable housing promotion models and standards for provision of physical, social and economic services.

Legal & Regulatory Framework

- vii) Promote systematic planning at the City, Metropolitan Area, District and Regional levels.

- viii) Encourage adoption of critical urban reforms relating to municipal laws, building bye-laws, simplification of legal and procedural frameworks, property title verification system and allied areas.
- ix) Promote an innovative policy for safeguarding the rights of street vendors with appropriate restrictions in the public interest.
- x) Promote improvements for elimination of ambiguities in transaction of conveyance deeds, lease deeds, mortgages, gifts, partition deeds and allied property-related documents.
- xi) Promote the observance of the National Building Code (NBC), 2005.

Housing Finance

- xii) Devise macro-economic policies for enabling accelerated flow of resources to the housing and infrastructure sector.
- xiii) Develop suitable fiscal concessions in collaboration with the Ministry of Finance for promotion of housing and urban infrastructure with special focus on EWS/LIG beneficiaries combined with a monitoring mechanism for effective targeting. Further, facilitate viability gap funding of integrated slum development programmes with the consent of Planning Commission and Ministry of Finance.
- xiv) Encourage Foreign Direct Investment in the urban housing and infrastructure sectors.
- xv) Develop convergence between urban sector initiatives and financial sector reforms.

Supply & Management of Land

- xvi) Develop a National Land Policy for optimal use of available resources including enhanced supply of serviced land for sustainable development.

Environment and Ecology

- xvii) Promote appropriate ecological standards for protecting a healthy environment and providing a better quality of life in human settlements. Special attention will be paid to housing in coastal areas in order to promote fragile ecology. Further, adequate mangrove and allied plantations will be promoted in coastal areas especially those which are in high disaster-prone zones to avoid loss to life from natural disaster.

Management Information System

- xviii) Develop a nation-wide Management Information System (MIS) relating to housing and allied infrastructure for well informed decision making.

Research & Development

- xix) Promote Research & Development (R&D) relating to alternate building materials and technologies as well as energy conservation practices in the housing sector.
- xx) Take appropriate steps for standardisation and quality marking of building materials.

3.2 The State Government would (in consultation with Urban Local Bodies):

Create a Supportive Environment

- i) Prepare the State Urban Housing & Habitat Policy (SUHHP).
- ii) Act as a facilitator and enabler in collaboration with ULBs/parastatals/ Private Sector/Co-operative Sector/NGOs with regard to Integrated Slum Development Projects as well as Integrated Township Development Projects. Further, the State Government will ensure suitable flow of financial resources to potential EWS/LIG beneficiaries as well as undertake viability gap funding of large housing and habitat development projects.

- iii) Prepare medium term and long term strategies for tackling problems relating to provision of adequate water supply, drainage, sewerage, sanitation, solid waste management, power supply and transport connectivity.
- iv) Promote and incentivise decentralised production and availability of local building materials.
- v) Prepare and update Master Plans along-with Zonal Plans, Metropolitan Plans, District Plans and the State level Regional Plan by respective agencies with provision of adequate land for urban poor.
- vi) Promote balanced regional development by observing appropriate prudential norms.
- xii) Promote in-situ slum upgradation with partnership between the Central Government, State Government, Urban Local Bodies, Banks/MFIs and potential beneficiaries.

Skill Upgradation

- xiii) Facilitate training and skill upgradation of construction workers.

Management Information System

- xiv) Develop appropriate Management Information System for different level of governance.

Research & Development (R&D)

- xv) Promote R&D activities in the field of building materials and technologies and promote their use in housing and infrastructure projects.

Legal & Regulatory Framework

- vii) Review the legal and regulatory regime for introducing simplification and rationalisation with a view to giving a boost to housing and supporting infrastructure.
- viii) Enable urban local bodies to take up regulatory and development functions.
- ix) Take all necessary steps for implementation of the State Urban Housing & Habitat Policy.

Public-Private Partnerships

- x) Promote well designed Public-Private Partnerships for undertaking housing and infrastructure projects.
- xi) Encourage Cooperative Group Housing Societies, Employees Organisations, labour housing promotion organisation, Non-Government Organisations (NGO) and Community Based Organisations (CBO) to have Partnerships with Urban Local Bodies/Parastatals in relation to housing related micro-finance and housing development.

Optimum Utilisation of Land

- xvi) Promote optimal utilisation of land by innovative special incentives like relaxation of FAR for ensuring that 20-25% of the FAR are reserved for EWS/ LIG units or issuance of Transferable Development Rights for clearance of transport corridors and availability of FAR in outer zones.
- xvii) Consider for upward review the presently authorised Floor Area Ratio (FAR) in line with international practice of making more efficient use of scarce urban land through construction of high rise buildings in consonance with densities specified in statutory Master Plans.

Integrated Townships, Urban Extensions & SEZs

- xviii) Develop Greenfield towns & integrated urban housing extensions of existing towns with complementary infrastructure or Special Economic Zones (SEZs) with both FDI and national investments in housing and infrastructure.

- xix) Ensure that such fully integrated housing projects are well connected by MRTS corridors.

3.3. The Boards The Urban Local Bodies/ Development Authorities/Housing Boards would (in consultation with all stakeholders):

Create a Supportive Environment

- i) Develop capacity building at the local level to design and take up inner-city development scheme, in-situ slum upgradation projects and slum relocation projects through suitable training programme.
- ii) Implement Central and State sector schemes pertaining to housing and infrastructure sector at the city level with appropriate provision for EWS and LIG beneficiaries in the Master Plan as well as Zonal Plans.
- iii) Enforce regulatory measures for planned development in an effective manner.
- iv) Check the growth of unauthorised colonies, new slums, unauthorised constructions, extensions of existing properties and commercialisation of residential areas.

Urban Planning

- v) Ensure that Development Plans/Master Plans as well as Zonal Plans and Local Area Plans are made and updated regularly so that adequate provision is made for the homeless as well as slum dwellers.
- vi) Prepare Master Plan and Metropolitan Plans in consonance with the concerned District Plan and the State Regional Plan.
- vii) Identify city specific housing shortages and prepare city level Urban Housing & Habitat Action Plans for time bound implementation. Wherever necessary and feasible, ULBs as well as other parastatal would provide viability gap funding especially for EWS/LIG housing and

supporting infrastructure so as to ensure better affordability by the poor and financial viability of slum upgradation projects.

- viii) Promote planning and development of industrial estates along with appropriate labour housing colonies serviced by necessary basic services.
- ix) Incorporate provisions of model building bye-laws prepared by Town & Country Planning Organisation (TCPO) and National Building Code in their respective building bye-laws. Make suitable provisions in the Building Bye-laws for innovative energy conservation practices and mandatory rain water harvesting for specified owners of buildings.
- x) Devise capacity building programmes at the local level.

Public-Private Partnerships

- xi) Promote participatory planning and funding based on potential of local level stakeholders.
- xii) Develop suitable models for private sector's assembly of land and its development for housing in accordance with the Master Plan.
- xiii) Promote Residents' Welfare Associations (RWAs) for specified operation and maintenance of services within the boundaries of given colonies as well as utilise their assistance in developing an early warning system relating to encroachments.
- xiv) Involve RWAs/CBOs in collaboration with conservancy organisations at the local level for effective cleaning of streets/lanes and solid waste disposal at the colony level.

Special Programme for Disadvantaged Sections

- xv) Devise innovative housing programmes for meeting the housing shortage with special focus on vulnerable groups.

Environment and Ecology

- xvi) Devising adequate safeguards for promoting a healthy environment with special emphasis on 'green lungs' of the city in terms of parks, botanical gardens and social forestry as well as green belts around cities/towns.

Security & Safety

- xvii) Ensure Safety & Security in residential and institutional areas which may include construction of boundary walls around housing colonies as well as installation of security stems.

3.4 Banks and Housing Finance Institutions (HFIs) would:

Outreach

- i) Reassess their strategies to be more inclusive in terms of both low-income beneficiaries belonging to EWS and LIG as well as extend/intensify their coverage in low income neighbourhoods.

Housing Finance

- ii) Promote innovative financial instruments like development of Mortgage Backed Securitisation Market (MBSM), and Secondary Mortgage Market.
- iii) Enhance / strengthen the income spread of their housing loans portfolio to increasingly cover BPL and EWS beneficiaries.
- iv) Adopt a more flexible and innovative approach in relation to credit appraisal norms.
- v) Develop financial products which encourage EWS and LIG housing beneficiaries to take insurance cover.
- vi) HFIs could also look at ploughing part of their resources towards financing slum improvement and upgradation programmes.

Special Programmes for Vulnerable Sections

- vii) Provide loans at concessional rate of interest to specified persons for purchasing a house site or house.
- viii) Devise innovative housing finance schemes for targeting the EWS and LIG segments of the housing market with suitable subsidy support from the Central and State Governments.
- ix) Promote MFIs and Self Help Groups for mobilising savings and playing a significant role in the housing finance sector. Provide housing loans to EWS and LIG segments as a priority sector of banking as in the case of rural development programmes.
- x) Encourage potential EWS and LIG beneficiaries to form Cooperative Group Housing Societies.

3.5 Public agencies/parastatals would:

- i) Revisit their strategy of operations and chart out a role relating to land assembly and development of fully serviced land with essential services.
- ii) Design multiple products to suit clients requirements.
- iii) Forge partnerships with the private sector and cooperatives for housing and infrastructure development especially with reference to Below Poverty Line (BPL)/EWS and LIG segments of the market.
- iv) Use land as a resource for housing with special focus on the urban poor.
- v) Reduce their dependence on budgetary support in a phased manner and access loans through better product development and implementation on the one hand and better bankability in terms of escrow account and land mortgage on the other hand.

3.6 Cooperative and Private Sectors would:

- i) Undertake land assembly and development with special focus on housing with complementary basic services.
- ii) Design public-private partnerships for slum reconstruction on a cross subsidisation basis.
- iii) Augment housing stock at an accelerated rate both on ownership and rental basis with a view to overcoming shortage of EWS/LIG housing units.

IV. ROLE OF RESEARCH & DEVELOPMENT, STANDARDISATION AND TECHNOLOGY TRANSFER ORGANISATIONS

4. Research and Development, Standardisation and Technology Transfer Organisations would:

- i) Undertake research to respond to different climatic conditions with a focus on transition from conventional to innovative, cost effective and environment friendly technologies.
- ii) Develop and promote standards in building components, materials and construction methods including disaster mitigation techniques.
- iii) Intensify efforts for transfer of innovative technologies and materials from lab to field.
- iv) Accelerate watershed development to conserve water, stop soil erosion and regenerate tree cover in order to improve habitat.

V. SPECIFIC AREAS OF ACTION

5.1 Land

- i) Land assembly, development and disposal will be encouraged both in the public and private sectors.
- ii) Assembly of land for specified use as per Master Plan will be done by observing the best norms of Regional Planning. District Plans and Metropolitan Plans will be prepared in compliance with the stipulations

of the 74th Constitutional Amendment Act. District Plans and Metropolitan Plans will function as sub set of the Regional Plan.

- iii) Private Sector will be allowed to assemble a reasonable size of land in consonance with the Master Plan/Development Plan of each city/town.
- iv) 10 to 15 percent of land in every new public/private housing project or 20 to 25 percent of FAR / Floor Space Index (FSI) which is greater will be reserved for EWS/LIG housing through appropriate legal stipulations and spatial incentives.
- v) A Special Action Plan will be prepared for urban slum dwellers with special emphasis on persons belonging to SC/ST/OBCs/Minorities/Economically weaker Sections /physically handicapped and Minorities. Due consideration would be given so that Safai Karamcharies and Scavengers are not geographically and socially segregated.
- vi) Beneficiary-led housing development will be encouraged. Suitable percentage of land developed by the Public Sector will be provided at institutional rates to organisations like Cooperative Group Housing Societies, which provide housing to their members on a no-profit no-loss basis. Employee Welfare Organisations will also be promoted since they operate on a no-profit no-loss basis. A special package will also be worked out for Labour Housing.

5.2 Finance

- i) In order to ensure that 10 to 15 percent of land or 20 to 25 percent of FAR / FSI whichever is greater is earmarked in every new public/private housing project, appropriate spatial incentives will be developed by Urban Local Bodies (ULBs) and Development Authorities.

- ii) A Secondary Mortgage Market may be promoted by the Reserve Bank of India(RBI)/National Housing Bank (NHB). This will enhance transparency and flexibility in the housing market.
- iii) Residential Mortgage Based Securitisation (RMBS) need to be nurtured through NHB, Scheduled Banks and Housing Finance Corporation (HFCs).
- iv) A Model Rent Act will be prepared by the Government of India to promote rental housing on the principle that rent of a housing unit should be fixed by mutual agreement between the landlord and the tenant for a stipulated lease period prior to which, the tenant will not be allowed to be evicted and after the expiry of the said lease period, the tenant will not be permitted to continue in the said housing unit.
- v) The feasibility of a National Shelter Fund to be set up under the control of the National Housing Bank for providing subsidy support to EWS/LIG housing would be examined in consultation with Ministry of Finance. The NHB will act as a refinance institution for the housing sector.
- vi) Housing and Urban Development Corporation Ltd. (HUDCO) will be directed to observe the aims and objectives listed in its Memorandum of Association and Articles of Association with a view to encouraging EWS/LIG housing.
- vii) Efforts should be made to encourage Foreign Direct Investment (FDI) from Non Resident Indians (NRIs) and Persons of Indian Origin (PIOs) in the housing and infrastructure sector in consultation with the Ministry of Finance and RBI.
- viii) Suitable fiscal concessions for promoting the housing sector may be developed by the Ministry of Housing & Urban Poverty Alleviation in collaboration with the NHB and the Ministry of Finance.
- ix) Central Government and Governments of States/UTs will promote innovative forms of public-private partnerships.
- x) States/UTs will be advised to develop 10 years perspective Housing Plans with emphasis on EWS and LIG sectors.
- xi) Special financial and spatial incentives would be developed for inner-city slum redevelopment schemes.
- xii) The Central and State/UT Governments would develop a special package of incentives for in-situ slum upgradation.
- xiii) In order to facilitate RMBS transactions, stamp duty on the instruments of RMBS across all states would be rationalised.
- xiv) Rental housing provides a viable alternative option to the home seekers and the house providers alike. Incentives are to be provided for encouraging lendings by financial institutions, HFIs and Banks for rental housing. Also, Companies and Employers will be encouraged to invest in the construction of rental housing for their employees.
- xv) Plan Funds and other assistance for housing and infrastructure would be dovetailed according to the Action Plan prepared and adopted by the States under their State Urban Housing and Habitat Policy (SUHHP). This would bring about synergies in the operation of various schemes and funding sources.
- xvi) Micro-Finance Institutions (MFIs) would be promoted at State level to expedite the flow of finance to urban poor. In this regard, suitable mechanisms would be evolved to develop simplified norms for prudential rating and providing finance to MFIs. Adequate regulation of MFIs would be undertaken to ensure that MFIs do not burden the poor by charging usurious interest rates and their operations are kept transparent.

5.3 Legal and Regulatory Reforms

- i) Model Guidelines will be developed by the Central Government for use by States/UTs for regulation of land supply with a view to reducing speculation in land and hazardous development in urban areas and along inter-city transport corridors.
- ii) In line with Central Government's decision to repeal the Urban Land Ceilings Act, the States (who have not already repealed the Act) will be encouraged to repeal the said Act.
- iii) A single window approach would be developed by the Urban Local Bodies/parastatals for approval of Building Plans and securing Certificates in collaboration with the Council of Architects or their State/UT chapters.
- iv) Adoption of the Model Municipal Law prepared by the Central Government with suitable modifications, if required, at the State/UT level needs to be encouraged.
- v) Revision of Master Plans would be done periodically with wide public participation and should take care of the expansions of the city due to urbanisation.
- vi) Awareness generation and advocacy for increased use of the Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002 and the Recovery of Debts due to Banks and Financial Institutions Act, 1993 (DRT Act) to ensure expeditious recovery of housing debts.
- vii) Stamp Duty reforms should be initiated to bring incidence of duty in all States/UTs at par.
- viii) Property Tax reform based on unit area method needs to be encouraged in all States/UTs and ULBs.
- ix) States will be encouraged to adopt the Model Cooperative Housing Act.
- x) All States would be encouraged to refine/enact a Town and Country Planning Act in order to promote Regional Planning at the State/UT level.
- xi) States/UTs would be encouraged to use Information Technology for maintaining urban land records and providing non-encumbrance certificates on the basis of e-enabled data and digitised certification.
- xii) States/UTs will be encouraged to enact Apartment Ownership Acts.
- xiii) States/UTs will be encouraged to undertake urban reforms listed under the JNNURM.
- xiv) A Citizen's Charter should be developed to safeguard the interests of customers *vis-à-vis* housing schemes offered by both the public and private sectors.
- xv) The land revenue records of the States/UTs would be computerised and put on Geographic Information System (GIS) mode within a time frame.
- xvi) Environmental safeguards in respect of housing and construction projects will be considered in consultation with Ministry of Environment and Forests and modalities for compliance of their guidelines will be worked out.

5.4 Technology support and its transfer

- i) States would be encouraged to prepare detailed city maps on the basis of the GIS mapping through satellite data, aerial survey and ground verification.
- ii) Low energy consuming and using renewal form of energy for construction techniques and rain-water harvesting technologies will be encouraged.
- iii) Use of prefabricated factory made building components will be encouraged for mass housing, so as to achieve speedy, cost effective and better quality construction.

- iv) Central and State/UT Governments should promote low cost, local building materials based on agricultural and industrial wastes, particularly those based on fly ash, red mud and allied local materials.
- v) Enforcement of the Building Code/Building Guidelines relating to disaster resistant planning and technologies will be taken up and specific elements in different disaster prone zones will be made compulsory.
- vi) Transfer of proven, cost-effective building materials and technologies would be encouraged by transfer from lab to land.
- vii) States/UTs will be encouraged to include new building materials in their schedule of rates.
- viii) Demonstration houses using cost effective materials and alternate technologies will be got constructed by the Building Materials and Technology Promotion Council (BMTPC) set-up by the Central Govt. and by other appropriate Public/Private Sector agencies.
- ix) Use of wood has already been banned by the Central Public Works Department (CPWD). State PWD Departments need to take similar steps in this direction. Use of bamboo as a wood substitute and as a general building component would be encouraged.
- ii) Development of a Mass Rapid Transit System (MRTS) at the sub-regional level around metropolitan cities will be encouraged.
- iii) All States would be encouraged to develop a 'Habitat Infrastructure Action Plan' for all cities with a population of over 1,00,000.

5.6 Sustainability Concerns

5.5 Infrastructure

- i) Efforts will be made to encourage ULBs/Development Authorities and other concerned agencies to follow the Urban Development Plans Formulation and Implementation (UDPFI) Guidelines issued by the Ministry of Urban Affairs and Employment in 1996 in order to improve the quality of Master Plans/Development Plans, Zonal Plans and Local Area Plans of all cities/ towns. The States will be advised to prepare a dynamic plan with provision for review every five years.
- ii) Green belts will be developed around cities with a view to maintaining the ecological balance.
- iii) Suitable green recreational areas like zoo, lakes and gardens will be earmarked /developed for public visits in the Master Plan of each city/town.
- iii) Water bodies will be protected with special emphasis on keeping the flood plains of tropical rivers free from construction or encroachments.
- iv) Efforts will be made to ensure that Master Plans protect large depressions from being filled up since they are natural drainage points for conservation of water and can be developed as suitable water bodies.
- v) Efforts will be made to encourage cities/towns to keep a significant proportion of the total Master Plan area as 'green lungs of the city'.
- vi) Efforts will be made to encourage States/UTs to develop Sub-regional / Special Area Development Plans for areas with fragile ecological characteristics on the basis of Environment Impact Assessment (EIA) so as to take care of all environmental concerns at the planning stage itself in consultation with the Ministry of Environment & Forests.
- vii) Growth of a city beyond reasonable limits imposes unbearable strain on its services. City planners would be encouraged to lay down norms for development of urban sprawls and satellite townships.

- viii) Reduction in the rate of in-migration into mega and metro cities is urgently needed through preparation of State/UT level regional Plans based on fast transport corridors for balanced growth.
- ix) Model bye-laws will be developed to promote the use of renewable energy sources particularly solar water heating systems in residential and commercial buildings.
- x) Poverty and unemployment are detrimental to the well balanced growth of urban settlements. States/UTs Governments and local authorities will be encouraged to formulate and implement poverty alleviation and employment generation programmes based on skills' training especially in the services sector.

5.7 Employment issues relating to the Housing Sector

- i) Efforts will be made to provide good quality training to construction workers with a view to improving their skills in tandem with technological advancements in the construction sector.
- ii) The Construction Industry is one of the biggest employers of women workers and is perhaps their biggest exploiter in terms of disparity in wages. Concerted efforts will be made to upgrade the skills of women construction workers, induct them at supervisory levels and also develop them as contractors. Both public and private agencies would be encouraged to take a lead in this. Training institutions will be requested to enroll women trainees on a preferential basis.
- iii) Efforts will be made to get States/UTs to enact legislation on the pattern of the Building & Other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996 of the Central Government with a view to ensuring that adequate measures are undertaken by

employers for the occupational health and safety of all workers especially women engaged in construction activities. Efforts will also be made to ensure use of modern techniques and modern safety equipment at construction sites with strict penalties for non-compliance.

- iv) Construction companies/public authorities will be directed to provide adequate support services like crèches and temporary rest accommodation with appropriate toilet facilities at construction sites.
- v) Effort will be made to get States/UTs to enact legislation on the pattern of the Building & Other Construction Workers Welfare Cess Act, 1996 of the Central Government and ensure adequate provision for skills upgradation of construction workers.
- vi) States/UTs will be encouraged to adopt a decentralised pattern of training for ensuring better coverage.

5.8 Slum improvement and upgradation

- i) The Jawaharlal Nehru Urban Renewal Mission has started to play a vital role both in slum improvement as well as in-situ slum rehabilitation along with provision of security of tenure, affordable housing and basic services to the urban poor.
- ii) Specially designed slum improvement programmes will also be encouraged which focus on upgrading of basic services and environment improvement of urban slums with a participative, in-situ slum rehabilitation approach.
- iii) Inner-city slum redevelopment programmes for creating a better environment would be encouraged with cross subsidisation and special incentives.
- iv) Land pooling and sharing arrangements would be encouraged in order to facilitate land development and improvement of basic amenities in slums.

- v) Release of Transferable Development Rights and additional FAR would be carefully considered for accelerating private investment in provision of shelter to the poor. Community Based Organisations (CBOs), Non-Governmental Organisations (NGOs) and Self-Help Groups (SHGs) would be involved in partnership with the Private Sector.
- vi) The Policy gives primacy to provision of shelter to the urban poor at their present location or near their work place and efforts will be made to ensure that rights provided are non-transferable for a period of 10-15 years.
- vii) Only in cases, where relocation is necessary on account of severe water pollution, safety problems on account of proximity to rail track or other critical concerns relocation of slum dwellers will be undertaken. In such cases, special efforts will be made to ensure fast and reliable transportation to work sites.
- viii) Income generating activities in slums, which are non-polluting, will be encouraged on a mixed land use basis. Efforts will be made to structure such activities as an integral part of housing and habitat projects.
- ix) The process for integrating the Valmiki Ambedkar Awas Yojana (VAMBAY) and the environment improvement scheme titled National Slum Development Programme (NSDP) has been undertaken through the Basic Services to the Urban Poor (BSUP) in Mission Cities and Integrated Housing & Slum Development Programme (IHSDP) in Non-Mission cities. Efforts will be made to remove hurdles faced by the States/UTs in implementing these integrated schemes. Further, efforts will also be made to enhance funds under IHSDP as well as develop a new scheme for meeting water, drainage, sanitation and sewerage concerns in slums located in smaller towns with a population below 5 lakhs.
- x) Formation of Group Cooperative Housing Societies of urban poor and slum dwellers will be encouraged across the country for providing better housing serviced by basic amenities through thrift and credit based CBOs.

6. VI. ACTION PLAN

- 6. i) The Central Government will encourage and support the States to prepare a State Urban Housing and Habitat Policy and also a State Urban Housing & Habitat Action Plan. This may include passing of specific Acts by the States/UTs (with legislature) for achieving the housing policy objectives through legal & regulatory reforms, fiscal concessions, financial sector reforms and innovations in the area of resource mobilisation for housing and related infrastructure development at the State/UT level.
- ii) In order to augment sustainable and affordable housing stock alongwith related infrastructure like water, drainage, sanitation, sewerage, solid waste management, electricity and transportation, the Action Plans of States/UTs should focus on accelerated flow of funds for housing (including various cost-effective slum-related options) and infrastructure. The State/UT Action Plan should also encourage promotion of planned and balanced regional growth, creation of sustainable employment opportunities, protection of weaker sections/ vulnerable groups preferably in their present residential location, conservation of urban environment and promotion of public private partnerships.

- iii) The State/UT level Policy and Plan should also provide a road map pertaining to institutional, legal, regulatory and financial initiatives in relation to (i) supply of land (ii) modification of Acts/Bye-laws (iii) promotion of cost effective building materials and technologies (iv) infrastructure development and (v) in situ slum development. Further, the Action Plan should make specific provision for use of information technology for planning, MIS and online e-connectivity in a time bound manner.
- iv) The State/UT level Policy and Plan should also indicate concrete steps for motivating, guiding and encouraging a participatory approach involving all stakeholders like CBOs, NGOs, State parastatals, ULBs, Cooperative Sector and Private Sector in order to synergise community, cooperative and private resources alongwith Government resources.
- v) A Monitoring framework at the State/UT level should be set up to periodically review the implementation of the Policy and concomitant Action Plan.
- vi) At the local level, cities should prepare 15-20 years perspective plans in the form of City Development Plans which take into account the deficiencies in housing and

urban infrastructure with special emphasis on the urban poor and indicate a vision based on various levels of spatial plans - Master Plan and Zonal Plans, Metropolitan Plan, District Plan and State/UT based Regional Plan - alongwith an investment plan for their implementation.

- vii) A High Level Monitoring Committee at the Central Government level would be set up to periodically review the implementation of the National Urban Housing & Habitat Policy 2007 and make amendments/modifications considered necessary.

VII. THE ULTIMATE GOAL

The ultimate goal of this Policy is to ensure sustainable development of all urban human settlements, duly serviced by basic civic amenities for ensuring better quality of life for all urban citizens. The Action Plan at the State/UT level in this regard must be prepared with the active involvement of all stakeholders. The National Urban Housing and Habitat Policy, 2007 also lays special emphasis on provision of social housing for the EWS/LIG categories so that they are fully integrated into the mainstream of ecologically well-balanced urban development.

BOOK REVIEWS

Jodhka, Surinder S. *Caste in Contemporary India*, Avantika Printers Private Limited, New Delhi, 2015, Pp. xvii+252, Price: Rs. 695/-.

This is a study of the nature of caste, particularly the scheduled castes, in India at the end of six decades after the promulgation of the republican constitution. Based on empirical enquiry in rural and urban Punjab and areas near about, it tries to show that the traditional bases of caste - mainly purity and hierarchy - have greatly weakened. What remain are mainly the senses of status and power.

The treatise begins with a review of the scholars' - mainly western - exposition of the phenomenon of caste, followed by a series of empirical enquiries by the author, in the first decade of this century, into the situation in rural Punjab, followed by similar enquiries into the situation in urban areas nearby.

The investigations in the rural areas of the Punjab show that, at the end of six decades since the promulgation of the Constitution, which declared untouchability as unconstitutional, this most important characteristic of the notion of purity has largely disappeared in both private and public behaviour, though some traces of it continue to characterise the behaviour of certain sections of the caste Hindu, and even non-Hindu, population, not only in rural areas but also among urban educated classes. Caste was also characterised by hierarchy of occupations. This too has largely disappeared due to the decline of the *Jajmani* system as well as the changing economy characterised by the technological changes in agriculture and non-agricultural activities. The Dalits have migrated from villages to towns, from farm occupations to non-farm, have come to possess some land and have taken to education in a communally organised manner when the general state facilities were found inadequate to the task.

Untouchability is literally now a thing of the past: there is not, and fortunately cannot be, a possibility of avoiding touching a person of the caste. The sense of pollution is also largely gone, though there are people, rural and urban, educated and otherwise, who symbolically practice it, by having different utensils for the ex-untouchables or not allowing them into their kitchen. Indeed, the term untouchable, to describe the caste, is no longer used. The word used is *Dalit* (Depressed Class). Incidentally, the author quotes Ms Mayavati using this expression in a public meeting in her early years, and though he does not say so, he appears to imply that this expression is of relatively recent origin. But, there were the Dalit Panthers in Maharashtra in the early 1970s, when it appears to have been used as an adjective. It is possibly later that it was used as a noun. I have not tried to find out when this expression was first used; but I have seen its use by Dr. Ambedkar in one of his articles in Marathi ["Is Gandhi a Mahatma?", *Chitra*, Diwali number, October, 1938] as far back as 1938.

The other characteristic of untouchability, hierarchy, has also undergone sea change. The caste based occupation system in which some castes were designed to do certain types of work that were "unclean" (like scavenging and skinning dead animals, etc.) as well as other occupations like sweeping streets, and of course casual as well as attached labour on farms of the non-Dalits, have also seen a significant change. The Dalits have ceased to work as attached labour of farmers (the *Jajmani* system is gone) and have largely moved from the villages to towns to do other types of work. Even where they still do some of these works, they prefer to do it in villages other than where they are resident, for understandable reason.

This is true to a much greater extent in towns. The author has made special investigation into not only the occupational pattern of the Dalits in rural Punjab, but also their entrepreneurship in this matter, both in rural and urban areas. It shows that

the dominant entrepreneurship in urban areas was in petty shop-keeping. In all other enterprises it was in smaller measures.

I wish the author had used the Economic Census data for this purpose for both rural and urban Punjab as well as for the two towns, Panipat and Shahrampur, available to us. The Economic Census of 2005 as well as of 1998, give the classification of non-farm enterprises owned by Dalits (SCs) in great detail. I am presenting these data at the end of this article, in aggregative form (to save space), for the state of Punjab and the two districts of Panipat in Haryana and Shahrampur in Uttar Pradesh, which he has investigated.

The data show that in the whole state of Punjab, in both rural and urban areas, the largest entrepreneurship amongst Dalits was in petty shop keeping (Trade). Nearly half the enterprises were in trade, followed by manufactures which accounted for about one fifth of the total number of Dalit owned enterprises. This was about the same in both rural and urban areas, though there were fifty per cent more entrepreneurial units owned by Dalits in rural than in urban areas.

The trading establishments relate to small shops, selling pan, bidi, tobacco, tea leaves, etc., and grocery items, and petty groceries. Manufactures relate mainly to small tea stalls that account for nearly one fifth of all manufacturing units. This is noteworthy in view of the fact that it runs counter to the notion of untouchability. It is not as if their clients are only Dalits. Not only in urban areas where the shop keeper's caste or any origin is not relevant to the customer, but also in rural areas, particularly in bus stands and market places, the caste factor appears irrelevant.

The second most important manufacturing activity is Tailoring (apparel making). This is of equal importance in rural and urban areas. It is interesting since this is not a traditional occupation of the Dalits. This is noticed in many other

states as well. It is interesting that compared to only seven years before, in 1998, according to the Economic Census of that year, there was a great increase in this activity amongst the Dalits across the country in 2005. This needs some explanation. An enterprise next in importance in the Punjab is Tanning, etc., which accounts for about one-tenth of all manufacturing units. Interestingly, this appears more important in urban than in rural areas; there were twice as many such units in urban Punjab than in rural Punjab. Like in all other enterprises, the average number of workers per enterprise in this was also small, a little over one person in rural areas and a little over two persons in urban areas. This is a traditional occupation of a section of the Dalits; but it is practiced more in urban areas where the caste identity is not very known.

Another aspect that the author highlights is education. One of the major deprivations of the bulk of the lower castes, and specifically the Dalits, in Indian society was education. It is a pity that the governments of the country till very recent times had not made a determined effort to open schools in all villages and dissuade children of school going age from dropping out of school. In the Punjab, like in some other regions, socio-religious groups took up this task and this has made a major contribution. But, it has two unhappy aspects. Firstly it is confined to particular caste amongst the Dalits, (Adi Dharamies, mainly Chamars) and the other Dalit castes have fallen behind. Second, the spread of education, particularly high school and college and technical education amongst this Dalit caste has caused jealousy among some other backward caste Hindu groups who have not taken to education with equal enthusiasm. This jealousy has been a cause of caste conflict. This is very visible in Tamil Nadu, for instance.

Education has resulted in giving the Dalits a sense of recognition of its great importance in not only pulling themselves out of poverty and

deprivation but also giving them respectability that they so much needed. This is exactly what Ambedkar was propagating. This has led to Dalit religious sects receiving donations from successful Dalit families in the country and abroad and spending the money in putting up schools, colleges and technical institutions, as well as hospitals, which are open to all but appear to be greatly used by Dalits. The book gives detailed evidence of this in the Punjab.

These are very positive developments in caste bound India, where the practice of purity in social behaviour and occupational hierarchy has lost most of its impact. It gives scope to support the idea that the spread of education, urbanisation and diversification of occupations amongst Dalits will ultimately lead to its disappearance. But the book provides evidence to hesitate before coming to such a very desirable outcome. There is evidence that while literally untouchability has vanished, there are many households, in both urban as well as rural areas, not allowing their Dalit domestic helps to enter their kitchens, of keeping separate utensils for serving their Dalit servants or guests. The Gurudwaras and temples, while admitting Dalits, do not allow them to participate in communal Bhajans, or sit along with all others in the Langars. If Dalits, out of frustration, build their own Gurudwara, the caste Sikhs or Hindus would not care to enter these. The caste Hindu/Sikh shop keepers would refer to similar shops run by Dalits as 'those Dalit Shops'! In urban apartment house, the neighbours of Dalits would advise their children not to socialise with the Dalit children or enter their house/apartment. And, most pernicious of all, the modern industrial house, while recruiting technical/administrative staff, would, suddenly on discovering that an equally qualified applicant is a Dalit, will not give him/her a job! And they tell the author in interviews that this can lead to

poor performance mainly because of the social incompatibility of those with other caste employees!

This persistence of caste has led to strengthening of caste considerations in democratic political elections. Such caste feelings have resulted in a strong sense of caste in political representation. The reservation of seats in elected bodies in villages and towns and in the state as a whole has strengthened the sense of relevance and power amongst Dalits. This is what is expressed in the reactions of the activists amongst Dalits, interviewed by the author, who would like to forget their caste but appear helpless since better education amongst Dalits appear to lead to jealousy based violence against them. Weddings between similarly educated Dalit and non-Dalit young men and women have often been the causes of such violence. Is it any wonder that such behaviour has resulted in strengthening of caste feeling amongst not only caste Hindu groups but also Dalits?

Reading all this, one begins to wonder, what the phenomenon of caste is based on. In Indian society, there are visible differences amongst different castes in the vocabulary and accent of the same language, in the way the same food item is cooked, in the manner the same rituals are practised. But, even when due to education and urbanisation, all these disappear, caste remains! So, what is it due to? The author's careful empirical study leads a reader to begin wondering about it. After every 'difference' disappears, caste appears to stay in the consciousness of the caste Hindu, as if it is imprinted in their DNA! While any sane individual will wish all castes to receive education, good health services and live in better economic condition, if caste persists in the psyche, one wonders how it can be got rid of.

One wonders if the only ultimate solution is not widespread inter-caste marriage, which fortunately has no colour bar in this country.

developments as well as the persisting inhibitions about it, leading to the perceptive reader wondering how it might end.

This very able empirical study of caste in India provides not only excellent evidence of the changing phenomenon of caste, the positive

Nilakantha Rath
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Table 1. The Total Number of Non-farm Enterprises in Punjab, Rural and Urban, and Number of Workers in Each, in 2005

Non-farm Enterprise Category	Number of Units			No. of workers in the Units		
	Rural	Urban	Total	Rural	Urban	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Primary	55749(11.12)	6563(1.14)	62312(5.80)	117336(10.98)	16492(1.01)	133828(4.95)
Mining	423(0.08)	189(0.03)	612(0.06)	2381(0.22)	722(0.04)	3103(0.11)
Manufacture	81260(16.21)	111169(19.39)	192429(17.91)	275060(25.75)	486694(29.79)	761754(28.19)
Energy, water	2487(0.50)	970(0.17)	3457(0.32)	18005(1.69)	16512(1.01)	34517(1.28)
Construction	4297(0.86)	4677(0.82)	8974(0.84)	6088(0.57)	7745(0.47)	13833(0.51)
Trade, all	205990(41.09)	289592(50.52)	495582(46.12)	272483(25.51)	525220(32.15)	797703(29.52)
Hotels etc	7581(1.51)	18113(3.16)	25694(2.39)	13711(1.28)	40483(2.48)	54194(2.01)
Transport, post	28573(5.70)	36140(6.30)	64713(6.02)	40108(3.75)	73105(4.47)	113213(4.19)
Services, all	15235(3.04)	32045(5.59)	47280(4.40)	31241(2.92)	92586(5.67)	123827(4.58)
Public Admin	99776(19.90)	73753(12.87)	173529(16.15)	291911(27.32)	374186(22.90)	666097(24.65)
Total	501371(100)	573211(100)	1074582(100)	1068324(100)	1633745(100)	2702069(100)

Table 2. The Total Number of Non-farm Enterprises Owned by the SCs, in Punjab, Rural and Urban, and Number of Workers in Each, in 2005

Non-farm Enterprise Category	Number of Units			Number of Workers		
	Rural	Urban	Total	Rural	Urban	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Primary	4862(4.90)	493(0.75)	5355(3.24)	8747(6.63)	866(0.82)	9613(4.06)
Mining	76(0.08)	31(0.05)	107(0.06)	154(0.12)	65(0.06)	219(0.09)
Manufacture	18694(18.82)	13277(20.14)	31971(19.35)	28628(21.70)	28459(27.08)	57087(24.09)
Energy, water	95(0.10)	44(0.07)	139(0.08)	177(0.13)	281(0.27)	458(0.19)
Construction	1573(1.58)	1004(1.52)	2577(1.56)	1977(1.50)	1225(1.17)	3202(1.35)
Trade, all	49263(49.60)	30759(46.66)	80022(48.43)	58219(44.14)	42915(40.84)	101134(42.68)
Hotels etc	1937(1.95)	2816(4.27)	4753(2.88)	2758(2.09)	4294(4.09)	7052(2.98)
Transport, post	6868(6.91)	7063(10.70)	13931(8.43)	7739(5.87)	8398(7.99)	16137(6.81)
Services, all	2552(2.57)	2627(3.99)	5179(3.13)	3496(2.65)	4299(4.09)	7795(3.29)
Public Admin	13402(13.49)	7807(11.84)	21209(12.84)	20011(15.17)	14273(13.58)	34284(14.47)
Total	99322(100)	65921(100)	165243(100)	131906(100)	105075(100)	236981(100)

Table 3. The Total Number of Manufacturing Enterprises and Number of Workers in Each, Rural and Urban, in Punjab in 2005

Manufacturing Sectors	Number of Units			Number of Workers		
	Rural	Urban	Total	Rural	Urban	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Food and beverages	28317(34.85)	20528(18.47)	48845(25.38)	70339(25.57)	57047(11.72)	127386(16.72)
Tobacco products	7(0.01)	57(0.05)	64(0.03)	8(0.00)	381(0.08)	389(0.05)
Textiles	2815(3.46)	10833(9.74)	13648(7.09)	30831(11.21)	99377(20.42)	130208(17.09)
Wearing apparel	15698(19.32)	16168(14.54)	31866(16.56)	22046(8.01)	31800(6.53)	53846(7.07)
Tanning and dressing of leather	1421(1.75)	3357(3.02)	4778(2.48)	2433(0.88)	9336(1.92)	11769(1.54)
Wood, cork, straw products	4362(5.37)	4478(4.03)	8840(4.59)	10833(3.94)	11920(2.45)	22753(2.99)
Paper and paper products	199(0.24)	944(0.85)	1143(0.59)	4914(1.79)	6414(1.32)	11328(1.49)
Publishing and printing	971(1.19)	3499(3.15)	4470(2.32)	1519(0.55)	11099(2.28)	12618(1.66)
Coke, refined petroleum	85(0.10)	55(0.05)	140(0.07)	274(0.10)	228(0.05)	502(0.07)
Chemicals and chemical products	321(0.40)	1173(1.06)	1494(0.78)	4777(1.74)	8441(1.73)	13218(1.74)
Rubber and plastic	325(0.40)	1669(1.50)	1994(1.04)	2084(0.76)	13348(2.74)	15432(2.03)
Nonmetal minerals (glass, ceramic, clay)	3352(4.13)	1179(1.06)	4531(2.35)	62610(22.76)	4924(1.01)	67534(8.87)
Basic metals	938(1.15)	2868(2.58)	3806(1.98)	8247(3.00)	27850(5.72)	36097(4.74)
Fabricated metals	3643(4.48)	7577(6.82)	11220(5.83)	9212(3.35)	38304(7.87)	47516(6.24)
Machinery and equipment	5367(6.60)	8776(7.89)	14143(7.35)	14677(5.34)	41611(8.55)	56288(7.39)
Office, accounting, computing equipment	7(0.01)	36(0.03)	43(0.02)	36(0.01)	189(0.04)	225(0.03)
Electrical machinery	2337(2.88)	2526(2.27)	4863(2.53)	7128(2.59)	9541(1.96)	16669(2.19)
Radio, TV, communication equipment	570(0.70)	956(0.86)	1526(0.79)	873(0.32)	3190(0.66)	4063(0.53)
Medical, precision, optical, clocks and watches	97(0.12)	645(0.58)	742(0.39)	211(0.08)	3114(0.64)	3325(0.44)
Motor vehicles, trailers	112(0.14)	563(0.51)	675(0.35)	2007(0.73)	11975(2.46)	13982(1.84)
Other transport equipment	397(0.49)	3407(3.06)	3804(1.98)	2193(0.80)	49312(10.13)	51505(6.76)
Furniture and others	9778(12.03)	19430(17.48)	29208(15.18)	17326(6.30)	46097(9.47)	63423(8.33)
Recycling	141(0.17)	445(0.40)	586(0.30)	482(0.18)	1196(0.25)	1678(0.22)
Total	81260(100)	111169(100)	192429(100)	275060(100)	486694(100)	761754(100)

Table 4. The Total Number of Manufacturing Enterprises Owned by the SCs and the Total Number of Workers in Each, Rural and Urban, in Punjab in 2005

Manufacturing Sectors	Number of Units			Number of Workers		
	Rural	Urban	Total	Rural	Urban	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Food and beverages	4337(23.20)	2067(15.57)	6404(20.03)	6167(21.54)	3324(11.68)	9491(16.63)
Tobacco products	2(0.01)	3(0.02)	5(0.02)	2(0.01)	3(0.01)	5(0.01)
Textiles	1376(7.36)	873(6.58)	2249(7.03)	2334(8.15)	2720(9.56)	5054(8.85)
Wearing apparel	6105(32.66)	2710(20.41)	8815(27.57)	7745(27.05)	4596(16.15)	12341(21.62)
Tanning and dressing of leather	1063(5.69)	2062(15.53)	3125(9.77)	1334(4.66)	4551(15.99)	5885(10.31)
Wood, cork, straw products	771(4.12)	495(3.73)	1266(3.96)	1255(4.38)	1079(3.79)	2334(4.09)
Paper and paper products	30(0.16)	66(0.50)	96(0.30)	87(0.30)	149(0.52)	236(0.41)
Publishing and printing	263(1.41)	265(2.00)	528(1.65)	334(1.17)	510(1.79)	844(1.48)
Coke, refined petroleum	11(0.06)	6(0.05)	17(0.05)	30(0.10)	8(0.03)	38(0.07)
Chemicals and chemical products	31(0.17)	61(0.46)	92(0.29)	454(1.59)	151(0.53)	605(1.06)
Rubber and plastic	57(0.30)	137(1.03)	194(0.61)	124(0.43)	355(1.25)	479(0.84)
Nonmetal minerals (glass, ceramic, clay)	551(2.95)	126(0.95)	677(2.12)	2212(7.73)	198(0.70)	2410(4.22)
Basic metals	164(0.88)	175(1.32)	339(1.06)	267(0.93)	576(2.02)	843(1.48)
Fabricated metals	711(3.80)	754(5.68)	1465(4.58)	1135(3.96)	2122(7.46)	3257(5.71)
Machinery and equipment	647(3.46)	637(4.80)	1284(4.02)	1294(4.52)	1556(5.47)	2850(4.99)
Office, accounting, computing equipment	3(0.02)	4(0.03)	7(0.02)	18(0.06)	5(0.02)	23(0.04)
Electrical machinery	343(1.83)	150(1.13)	493(1.54)	432(1.51)	322(1.13)	754(1.32)
Radio, TV, communication equipment	141(0.75)	109(0.82)	250(0.78)	183(0.64)	215(0.76)	398(0.70)
Medical, precision, optical, clocks and watches	18(0.10)	77(0.58)	95(0.30)	19(0.07)	219(0.77)	238(0.42)
Motor vehicles, trailers	14(0.07)	22(0.17)	36(0.11)	28(0.10)	90(0.32)	118(0.21)
Other transport equipment	117(0.63)	156(1.17)	273(0.85)	144(0.50)	1124(3.95)	1268(2.22)
Furniture and others	1859(9.94)	2155(16.23)	4014(12.56)	2938(10.26)	4347(15.27)	7285(12.76)
Recycling	80(0.43)	167(1.26)	247(0.77)	92(0.32)	239(0.84)	331(0.58)
Total	18694(100)	13277(100)	31971(100)	28628(100)	28459(100)	57087(100)

Table 5. Total Number of Non-farm Enterprise Units and the Workers Employed in those in Panipat District, in 2005

Non-farm Enterprise Cate- gories	No. of Enterprise Units			No. of Workers in the Units		
	Rural	Urban	Total	Rural	Urban	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Primary	774(3.96)	303(1.30)	1077(2.51)	2119(3.70)	751(0.98)	2870(2.14)
Mining	16(0.08)	52(0.22)	68(0.16)	181(0.32)	133(0.17)	314(0.23)
Manufacture	4083(20.88)	4654(20.00)	8737(20.40)	28232(49.27)	35209(45.72)	63441(47.24)
Energy, water	124(0.63)	53(0.23)	177(0.41)	694(1.21)	238(0.31)	932(0.69)
Construction	192(0.98)	81(0.35)	273(0.64)	210(0.37)	140(0.18)	350(0.26)
Trade, all	8846(45.23)	12090(51.96)	20936(48.89)	12479(21.78)	22257(28.90)	34736(25.86)
Hotels etc	581(2.97)	1024(4.40)	1605(3.75)	1156(2.02)	2260(2.93)	3416(2.54)
Transport, post	1621(8.29)	1725(7.41)	3346(7.81)	2128(3.71)	3379(4.39)	5507(4.10)
Services, all	442(2.26)	1100(4.73)	1542(3.60)	1109(1.94)	3406(4.42)	4515(3.36)
Public Admin	2877(14.71)	2188(9.40)	5065(11.83)	8988(15.69)	9240(12.00)	18228(13.57)
Total	19556(100)	23270(100)	42826(100)	57296(100)	77013(100)	134309(100)

Table 6. Number of Non-farm Enterprise Units and the Number of Workers Employed in those Units that are Owned by the Scheduled Caste, in Panipat District, in 2005

Non-farm Enterprise Cate- gories	No. of Enterprise Units			No. of Workers in the Units		
	Rural	Urban	Total Result	Rural	Urban	Total Result
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Primary	41(2.23)	5(0.49)	46(1.61)	71(2.88)	9(0.46)	80(1.81)
Mining	3(0.16)	3(0.29)	6(0.21)	6(0.24)	3(0.15)	9(0.20)
Manufacture	352(19.14)	197(19.37)	549(19.22)	516(20.91)	657(33.52)	1173(26.49)
Energy, water	3(0.16)	2(0.20)	5(0.18)	3(0.12)	2(0.10)	5(0.11)
Construction	18(0.98)	11(1.08)	29(1.02)	20(0.81)	23(1.17)	43(0.97)
Trade, all	969(52.69)	443(43.56)	1412(49.44)	1196(48.46)	724(36.94)	1920(43.56)
Hotels etc	38(2.07)	63(6.19)	101(3.54)	55(2.23)	104(5.31)	159(3.59)
Transport, post	191(10.39)	150(14.75)	341(11.94)	209(8.47)	176(8.98)	385(8.69)
Services, all	30(1.63)	34(3.34)	64(2.24)	41(1.66)	55(2.81)	96(2.17)
Public Admin	194(10.55)	109(10.72)	303(10.61)	351(14.22)	207(10.56)	558(12.60)
Total Result	1839(100)	1017(100)	2856(100)	2468(100)	1960(100)	4428(100)

Table 7. Total Number of Non-farm Enterprise Units and the Workers Employed in those, in Saharanpur District, in 2005

Non-farm Enterprise Cate- gories	No. of Enterprise Units			No. of Workers in the Units		
	Rural	Urban	Total	Rural	Urban	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Primary	17(0.03)	33(0.07)	50(0.05)	65(0.06)	87(0.09)	152(0.08)
Mining	271(0.53)	183(0.39)	454(0.46)	528(0.50)	398(0.41)	926(0.46)
Manufacture	17494(34.27)	11629(24.92)	29123(29.81)	41919(40.01)	28721(29.36)	70640(34.87)
Energy, water	4(0.01)	40(0.09)	44(0.05)	12(0.01)	110(0.11)	122(0.06)
Construction	322(0.63)	379(0.81)	701(0.72)	591(0.56)	652(0.67)	1243(0.61)
Trade, all	24049(47.11)	26194(56.13)	50243(51.42)	41963(40.06)	49805(50.92)	91768(45.30)
Hotels etc	64(0.13)	580(1.24)	644(0.66)	160(0.15)	1286(1.31)	1446(0.71)
Transport, post	1176(2.30)	1910(4.09)	3086(3.16)	2071(1.98)	3628(3.71)	5699(2.81)
Services, all	460(0.90)	1492(3.20)	1952(2.00)	1100(1.05)	3442(3.52)	4542(2.24)
Public Admin	7190(14.09)	4224(9.05)	11414(11.68)	16353(15.61)	9683(9.90)	26036(12.85)
Total	51047(100)	46664(100)	97711(100)	104762(100)	97812(100)	202574(100)

Table 8. Number of Non-farm Enterprise Units and the Number of Workers Employed in those Units that are Owned by the Scheduled Caste, in Saharanpur District, in 2005

Non-farm Enterprise Cate- gories	No. of Enterprise Units			No. of Workers in the Units		
	Rural	Urban	Total	Rural	Urban	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Primary	4(0.03)	9(0.16)	13(0.07)	25(0.10)	34(0.33)	59(0.16)
Mining	86(0.64)	22(0.39)	108(0.57)	137(0.53)	40(0.38)	177(0.49)
Manufacture	5312(39.76)	1100(19.74)	6412(33.87)	11085(43.05)	2319(22.20)	13404(37.03)
Energy, water	1(0.01)	3(0.05)	4(0.02)	1(0.00)	12(0.11)	13(0.04)
Construction	98(0.73)	25(0.45)	123(0.65)	192(0.75)	35(0.34)	227(0.63)
Trade, all	6107(45.71)	3580(64.25)	9687(51.17)	10699(41.55)	6328(60.57)	17027(47.04)
Hotels etc	16(0.12)	47(0.84)	63(0.33)	32(0.12)	88(0.84)	120(0.33)
Transport, post	268(2.01)	194(3.48)	462(2.44)	431(1.67)	347(3.32)	778(2.15)
Services, all	95(0.71)	123(2.21)	218(1.15)	287(1.11)	246(2.35)	533(1.47)
Public Admin	1373(10.28)	469(8.42)	1842(9.73)	2858(11.10)	998(9.55)	3856(10.65)
Total	13360(100)	5572(100)	18932(100)	25747(100)	10447(100)	36194(100)

Note: Figures in brackets are percentages to total.
Source: *Economic Census*, CSO, 2005.

Competitiveness versus Happiness

Everyone is talking about competition these days, be they economists, business houses, automobile producers and drivers, mobile providers, school children and even cycle riders. The reference point may be different though. Ever since 2004 the World Economic Forum (WEF) also comes up with a report on country level competitiveness, entitled: *The Global Competitiveness Report*. The report for the year 2015-16 is asking the countries to recover from global financial crisis using competitiveness as an institution. To quote from the Report, '...the analysis in this chapter has demonstrated the importance of competitiveness-understood as the driver of higher productivity in supporting growth and economic resilience.' (p. 32). This approach itself may be debatable on several levels. After all, 2009 global financial crisis itself was an outcome of non-competitive nature of the economies. Krugman [1994, 2009] had argued long back that 'treating competitiveness among countries just like companies' is totally wrong. He calls it an obsession. Much before the 2009 world financial crisis, he not only challenged the very idea that 'nations have to compete with one another like businesses', but also went on to argue that 'competitiveness is a meaningless word when applied to national economies'. Instead of treating competition in trade, economies are being asked to use it for assessing 'productivity' as a measure of efficiency; wherein the country-wise resource endowments (including human capital), and cultural and historical backdrops can make all the difference to the production processes and productivity levels. Under the notion of competitiveness, invariably it is argued that the growth rate of living standards essentially equals the growth rate of domestic productivity-which is a wrong way to start the analysis. Krugman argues that the 2009 is case of our professional blindness to predict possibility of financial crisis due to 'catastrophic failure in market economies'.

According to him, it is all driven by the notion of a vision of capitalism as a perfect or nearly perfect system, which itself is questionable.¹

The Global Competitiveness Report starts with the premise that 'As a country becomes more competitive, productivity will increase and wages will rise with advancing development. Countries will then move into the efficiency-driven stage of development, when they must begin to develop more-efficient production processes and increase product quality because wages have risen and they cannot increase prices' (p. 37 ff). Using as many as 114 indicators on competitiveness, grouped into 12, called as 'pillars of competitiveness', 140 countries are ranked by these pillars and also by an aggregate country level index. Almost all the indicators (barring a few) stand out in favour of implying positive aspects of competitiveness, which are notionally expected to enhancing efficiency, productivity and resilience.

But exclusion of indicators depicting strong negative or non-competitive nature of the economy would amount to a biased state of measuring the degree of competitiveness. Whatever be the measures of competitiveness, the methodology should also demand that country wise indices of Non-competitiveness should have been constructed and compared.

Non competitiveness may be because of differences in the productive carrying capacities of different nations, or cultural differences. Several major factors such as lack of equal exchange opportunities, (e.g., between small exporting country versus large importing country), not well defined property rights between countries (resulting in differences in trade options under WTO, not having equal bargaining powers in trade, inequity in exchange rate management, and

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inability to restrain dumping and sanctions on trade, etc.), missing or wrong information, (e.g., internationally missing well defined values of natural resources by region, resource and time), and several negative externalities, (e.g., dumping of pollutants across country boundaries, over exploitation of resources leading to depletion of natural resources such as forests, fish or corals, or effects of over-emphasised chemical fertilisers and pesticides leading to soil degradation, water pollution, etc.) do contribute to non-competitiveness. Barring a few, under the first pillar called 'Institutions', all other remaining eleven pillars directly refer to competitiveness as viewed from enhanced productivity, efficiency and building resilience. One would have liked to see the indicators of degradation and depletion of water, soil or air qualities, or green house gas emissions, or impact of population pressure, or ethnic characteristics of the regions and countries to be equally important as negative or non-competitive pressures on the economies. Stated formally, the transpose or opposite of Competitive scores do not reflect non-competitiveness.

What does this Global Competitiveness Index include? Three basic elements: Basic Requirements, Efficiency Enhancers, and Innovation & Sophistication factors. They are, in turn, based on several measurable indices (pillars as called by WEF). The twelve pillars are grouped under the three headings as: Basic requirements, Efficiency Enhancers, and Innovation and Business Sophistication. The pillars are named as: Institutions; Infrastructure; Macroeconomic environment; Health and primary education; Higher education and training; Goods market efficiency; Labor market efficiency; Financial market development; Technological readiness; Market; Business sophistication; and finally, Innovation. For each country, an Aggregate score is built in the range of 0 to 7.

While the report admits that there are no agreements on factors driving slowdown of economic growth, the competitive indices point at some factors, according to the Report. Noticeably, they include only the basic socio-economic input measures-be they institutions, markets or innovations. They are all positive indicators.

On similar lines, when it comes to outcomes, performance or welfare measures of countries, there are several other global indicators. Most people would jump to mention about welfare, measured with objective indicators such as income and wealth inequality, spatial disparity, gender inequality and so on. There are global reports such as UNDP's Human Development Report, WEF's Gender Gap Report, or the World Development Report of the World Bank and such others, which go into some aspects of such human well being measures.

But, a recent report edited by Helliwell et al., (2015): *World Happiness Report-2015* is one that takes the approach of accounting for demographic transition, neuro-economic facet of human mind, subjective welfare, the role of civil society and social capital. Expectedly, some of these, including freedom to make life choices or freedom from corruption, may also influence competitiveness or the lack of it. Initiated since 2011 after Bhutan brought out its well acclaimed Gross National Happiness Report, the report accounts for both emotional (subjective well-being: happiness, smiling or laughter, enjoyment, feeling safe at night, feeling well-rested, and feeling interested, and several negative aspects such as pain, anger, protests), and life evaluation aspects, (e.g., GDP per capita, social support, healthy life expectancy, freedom to make life choices, generosity, and freedom from corruption). In a way, this report internalises both positive and negative drivers of happiness. Certainly, such a report is a welcome addition to the understanding of well-being measured as happiness.

The method of indexing itself is quite complex, as it is purely based on perceptions. One would have liked that such as report also accounts for people's perceptions about income inequality, gender inequality and spatial inequality, which are otherwise measured as statistical attributes for normative value judgments. One can see the difficulty in doing so, because of the complexity of additivity of subjective and cardinal welfare measures.³ Also, many of the psychological factors or subjective welfare indicators mentioned above do indirectly reflect upon these tangible measures. This report covers as many as 158 countries. Specifically, both emotional and life evaluation aspects of happiness are put together using a 'subjective indexing method'. Six major variables are scored for each country, and a seventh indicator called 'Dystopia' is used to add the distance from the world's lowest national average. The six indicators are: GDP per capita (in logarithms), Social support, Healthy Life Expectancy at birth, Freedom to make choices, Generosity and Perception of corruption. The negative and positive measures are separated. Additive scores with a maximum of 10 are constructed for each country.

Some comments on the estimated indices of Competitiveness can be offered. The Competitive scores are in the range of 0 to 7. Taking the median score of 4.19, the countries below this average competitive score are mainly from Sub-Saharan countries, followed by Latin American, and a few Emerging developing countries in the lowest range; while the Advanced economies (with the exception of Saudi Arabia, Qatar, UAR, Malaysia, China and India and a few other countries) are invariably above this average. SAARC countries such as Pakistan, Bangladesh, Bhutan, Nepal are also in the 'Below the median' range. Of the BRIC countries Brazil is below this median, which is a surprise, mainly attributable to its low indicators under Basic requirements such as institutions and infrastructure.

The Indian situation on competitiveness can be summarised. It is explained most by good market size, and least by Technological readiness. No wonder, these two are the major factors for talking about Make in India versus Made in India debate in India. The overall Indian rank was 71 in 2014-15 which has improved to 55 in 2015-16. India improved its rank structure in Basic requirements such as institutions, infrastructure, health and primary education and macro-economic environment. On matters of business sophistication or higher education, the scope seems to be lagging. Needless to mention that all these are to be addressed if one wants to talk of Make in India.

With respect to the Happiness scores, many Asian countries such as Sri Lanka, India, Cambodia, Bangladesh, Myanmar, China, Pakistan and Nepal are below the median score (5.268). Among the BRIC countries, Brazil, which is below median for the competitiveness index, surprisingly tops the list in happiness index, mainly because of huge social support and for being far above the world minimum as Dystopia. Indian score on Happiness is 4.565, which is above global average. Interestingly, about 0.5 of this score is explained by 'Healthy life expectancy', 0.4 by 'Freedom to make life choices', 0.6 by 'GDP per capita', and 0.33 by social supports. A score of 2.31 is assigned for life evaluation which includes improvement in expectation of life (the minimum being 2.10).

Though a comparison of these two reports is not much logical, a question arises as to 'whether competitiveness raises the degree of happiness'. For examining this, the estimates in these two reports and the Figure below on these two indicators at the country level are worth taking a look.

The Figure showing the two scores for as many as 133 countries (leaving out missing scores for some countries in either of the Reports), indicates that for almost all countries with above the median

level in Competitive scores their corresponding Happiness rates are below the Competitive Scores. Only among the countries which lie below the median level of Competitiveness, their corresponding Happiness scores are either just matching, closer or even higher. This shows the regressiveness of happiness associated with competitive nature of the countries. Secondly, the relationship for Happiness being explained by Competitiveness as viewed from an estimated regression suggests that: the elasticity is less than unity (0.9359). This prompts a message that competitiveness does not necessarily enhance the rate of happiness in the same or higher proportions. Rather, the transfer from competitiveness to happiness is a regressive one.

$\text{Log (Happiness)} = 0.1499 + 0.9359 \text{ Log(Competitiveness)}$; Corr.= 0.72: note: all the estimated coefficients are statistically significant at 1% level.

The foregoing analysis sends out five separate messages. First, it is necessary also to include all those factors that affect negatively the degree of competitiveness. Second, cross country comparisons be restricted to groups of those with similar cultural and historical backdrops. Third, measures of competitiveness be separated for trade related and productivity related factors. Fourth, happiness measures should also internalise some of the welfare measures such as income or consumption per capita, income and gender inequality, etc. Finally, Happiness does not grow in consonance with competitiveness; rather, the response is regressive.

In summary, it is clear that the attempts to link competitiveness with well-being or happiness

need to develop a common methodology to overcome the deficiencies in the methods, and to make such reports more usable.

NOTES

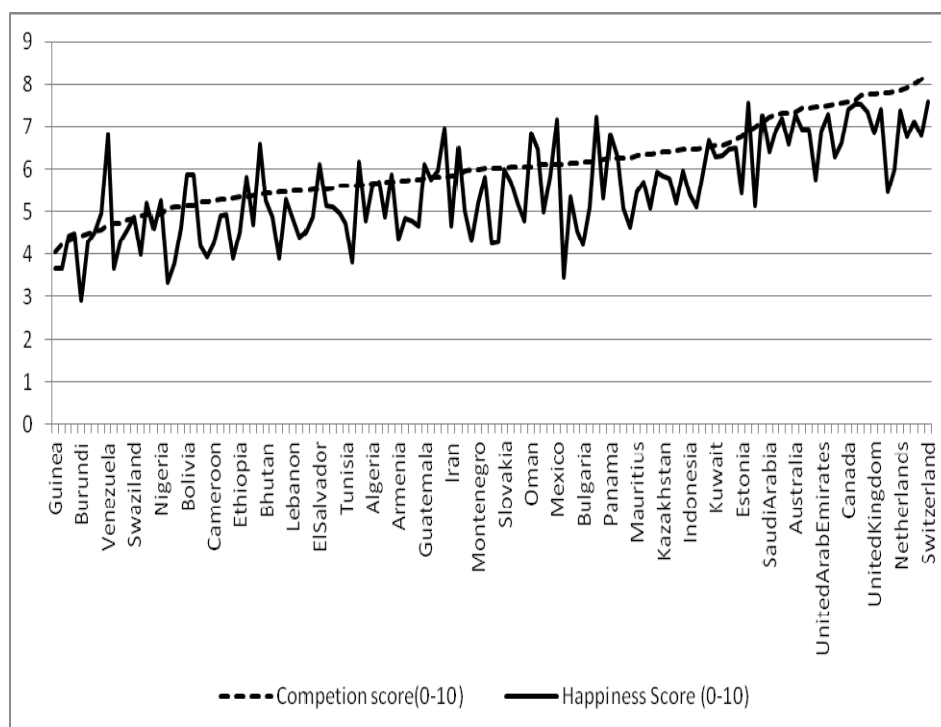
1. Referring to the 2009 financial crisis, Krugman [2009, p. 3] took the view that 'economists have turned a blind eye to the limitations of human rationality that often lead to bubbles and busts; to the problems of institutions that run amok; to the imperfections of markets - especially financial markets - that can cause the economy's operating system to undergo sudden, unpredictable crashes; and to the dangers created when regulators don't believe in regulation'. According to him, some economists claimed that free market economy would never go astray, and few others argued that any major deviations from the path of prosperity could and would be corrected by the all-powerful Fed.

2. A major debate took place in the economic literature starting from the earliest works of Jevons, Menger and Walras around 1870's to Lange and Sweezy in 1934, all about measurements of welfare, and its measures as cardinal and ordinal concepts. Thus, also arose the question of their additivity as dealt by scholars like Debreu in 1954 and Von-Neumann and Morgenstern in 1947.

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Note: For sake of comparison, the Competitive Scores which are in the range of (0-7) have been scaled up to the range of (0-10), while the Happiness Scores are in the range (0-10).

Bhattacharjee, Govind, *Special Category States of India*, Oxford University Press, 2016, Pp. xxi+532, Price: Rs. 507/-.

There is a clamour for special category status by a number of States on various grounds. Bihar and Odisha have been demanding the status for a considerable period of time on the grounds that they are extremely backward. Andhra Pradesh has been demanding the status to meet disadvantages of having to build the infrastructure in the new State after the bifurcation and losing of the capital Hyderabad to Telengana. Telengana too has been demanding the status to meet the disadvantages of the new State and to on the grounds of backwardness. The analysis of the rationale for according special category status requires objective analysis of asymmetric arrangements in Indian federalism. It also calls for a detailed understanding of the history of the

states to unravel the constraints and reasons for unviability. The time is also opportune for examining the rationale and consequences of according special category status. This book is an attempt to fill this vacuum and succeeds in the task to a considerable extent.

The eleven states out of the 29, which have been given the special category status so far are "...impoverished and mostly resource starved" and "... they lay at the periphery of India's economic development". They were created at different points of time in the history of independent India to overcome their inherent handicaps. The criteria used by the national Development Council for according the special category status included (i) hilly and difficult terrain, (ii) sparsity of population and predominance of tribal population, (iii) strategic location in terms of contiguity to borders with

neighbouring countries, (iv) infrastructure and economic backwardness and (v) unviable state finances. The benefits to these States from special category status mainly flowed in terms of liberal central assistance and tax exemptions for investments in these states. The author argues that this is an "unimaginative solution" relying solely upon generous transfers without erecting a structure of monitoring and evaluation and ignoring their structural weaknesses and capacity constraints. The author concludes that the time is opportune to review the entire arrangement of according special category status and correct the distortions and overhaul system and install a system of accountability.

The author states that the objective of the book is to explore the reality of special category states, analyze the roots of their backwardness and examine their distinct ethnic, cultural and historical identities, and to analyse the asymmetric arrangements made to deal with their inherent problems. After a detailed introduction in which the author sets out the objectives of the book, the rationale and circumstances leading to and the special features needed for according special category status is described. The chapter highlights the problems with the prevailing transfer system. It describes multiple institutions involved in making transfers, encroachment of the Finance Commission's mandate by the Planning Commission, problems with the grants for centrally sponsored schemes and aberrations of plan transfers given directly to implementing agencies bypassing the State budgets.

The description of special category states in the framework of asymmetrical federalism in India is rather sketchy. Asymmetrical status to some states is accommodated in the Constitution itself as a part of accession and there are arrangements to safeguard the identities and promote developments in the tribal and backward areas under Schedule V and VI of the Constitution. In this part of the analysis, there is not much

analysis of the problems of scheduled areas and the failure of the Union government to allocate adequate resources to these areas under Article 275 (i) to these areas which fall outside the recommendation of the Finance Commissions. The author does not deal with many discretionary asymmetric actions by the ruling Union government favouring the States ruled by the same party or the allies and discriminating against the others. The book also makes references to asymmetrical arrangements in Canadian and Spanish federations. On the international experience with asymmetric federalism, the author could have referred to the rich analysis in Richard Bird, *Fiscal Fragmentation in Decentralized Countries: Subsidiarity, Solidarity and Asymmetry*. Edward Elgar, 2007.

The history, ethnicity, record of insurgency and law in each of the individual special category states analysed by the author are interesting. These provide a glimpse of individual traits and identities of the States and the institutional constraints on development. The first special category states - Assam, Nagaland and Jammu and Kashmir are analysed in one chapter. Other North-eastern States are analysed in another chapter and there are separate chapters on Sikkim, Himachal Pradesh and Uttarakhand. The author has put in considerable effort in gathering information on the history and institutions in these States and this is an important reference material for future researchers. The chapter on institutional framework and policies for special category states presents various special dispensations such as Backward Region Grant Fund (which was available for some general category States as well), North-eastern Council and Ministry of Development of North Eastern Region (MDONER), non-lapsable Central Pool of resources, and Autonomous District Councils. The analysis provides a useful analysis of the history and institutions. The analysis of public finances in the special category states, however, does not bring out any new insights.

The main criticism of the author is that dealing with backwardness and inherent disadvantages of the State by bracketing them into special category is unimaginative and it relies solely upon generous transfers without erecting a structure of monitoring and evaluation and ignoring their structural weaknesses and capacity constraints. One would have expected the author to explore the right approach to deal with their inherent problems without adversely impacting the incentives and accountability.

The major shortcoming of the book, however, is that it does not incorporate most recent developments in Indian federal landscape in its mainstream analysis and this is because changes have been too fast to accommodate them. In fact, there has been a sea change in the landscape of inter-governmental finance due to (i) the abolition of the Planning Commission and discontinuation of Gadgil formula grants, (ii) The Finance Commission asserting its Constitutional role and making transfers to cover the entire revenue account requirements of the States without making a distinction between plan and non-plan, (iii) discontinuation of the practice of bypassing the states and routing all grants for centrally Sponsored Schemes through the Consolidated Funds of the States, and (iv) consolidation and rationalisation of Centrally Sponsored Schemes based on the recommendation of the NITI Ayog Committee chaired by the Chief Minister of Madhya Pradesh. In this sense, much of the discussion on plan grants - its evolution, and the variables and the weights employed - is only of historical interest. In fact, after the acceptance of the recommendation by the 12th Finance Commission that the Union government should desist from giving loans to the States, even the advantage of grant-loan component has lost its meaning.

The main advantage associated with the special category status is the tax exemption for manufacturing units located in them. This is also

a cause of severe distortions. The book does not analyse this aspect at all. Of course, in most of the North-eastern States, tax preference has failed to attract productive investments. However, this has been a major source of distortion in both Himachal Pradesh and Uttarakhand as industries in the neighbouring Punjab, Haryana and Uttar Pradesh have simply migrated to these states.

There are also some factual inaccuracies in the study. Contrary to the statement on p. 6, Article 280 of the Constitution is not the article for sharing the taxes between the Union and States. This is an article providing for the appointment of the Finance Commission every five years (or earlier as may be required). Article 270 is the relevant article. Similarly, Article 275 is not the mechanism for automatic devolution. This is meant for giving only the grants in aid of revenues to the States. The Finance Commission is not mandated to reduce inter-regional disparity or promote better fiscal management (p. 6). Article 280 simply states, "The Commission shall determine their procedure and shall have such powers in the performance of their functions as the Parliament may by law confer on them". The terms of reference too do not specify that the objective should be to reduce inter-regional disparities. The theoretical argument for general purpose transfer is to enable every state to provide comparable level of public services at comparable tax rates and this is not the same thing as reducing regional disparities. The author states that Article 282 enables the Union government to give grants for any public purpose. This issue of whether or not giving grants under Article 282 is legitimate has been a matter of considerable debate. In fact, some Constitutional experts (K. K. Venugopal) consider the practice as not legitimate for two reasons. First, all grants - both for revenue and capital and general and specific purpose can be given under Article 275 and therefore, there is no need for a separate provision. Second, Article 282 merely enables giving grants by the *Union or the States* for any public purpose even when the

purpose is not within their respective legislative competence. Finally, the author states that the transfers are determined by the Finance Commission by the three guiding principles of ensuring equalisation, equity, and efficiency (p. 9). These concepts themselves are vague and not clearly defined and the past finance commissions have used varied indicators for tax devolution.

Despite these minor glitches, this is a very useful book both for the students and scholars in the area. There are few studies that give a sense of history and this book is extremely useful to understand the history and reasoning behind special categorisation. Furthermore, most fiscal studies on States simply ignore special category states or assume that they simply do not exist and

confine their analysis to general category States. As mentioned above, the author has painstakingly put together and analysed history as well as institutions in each of the special category States and that is extremely useful to the policymakers to understand their developmental constraints. It also shows clearly that the approach of according special category status has not succeeded in overcoming their developmental constraints and the practice of providing liberal transfers has only helped to soften their budget constraints with an adverse impact on accountability.

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DR. R.M. HONAVAR - AN OBITUARY

Vikas Chitre

Dr. Ramdas M. Honavar, Emeritus Fellow of the School and former Chief Economic Adviser, Ministry of Finance, Government of India, passed away on 27 June 2016 after a brief terminal illness in Portugal, where he was living with his daughter, Minal, for the past few years. He had just turned 93 at the time of his demise. As his daughter wrote to us on his demise, "Although physically very debilitated before the terminal illness, he remained avidly interested in current events and keen to discuss politics, economics and tennis." She further wrote: "Despite the serious nature of his illness and the very high doses of medication he received, his mental faculties remained acute. He remembered the day after the Brexit vote, 3 days before he passed away, to ask me how it had gone and the exact number of votes polled."

Born on May 25, 1923, in Honavar in Karnataka, Dr. Honavar did his B.A. from Fergusson College in Pune and his M.A. and Ph.D. from the Bombay School of Economics. He was selected in the first batch of Fulbright scholars from India in 1950 and went to University of Iowa where he studied mathematics and statistics.

He began his career by joining the Indian Economic Service of the Government of India, and was placed in the Ministry of Commerce and Industry. He was deputed to the World Bank during 1965-1968, after which he returned to the Ministry of Finance as Economic adviser and worked in that position till 1973. From 1973 to 1976, he was posted in the High Commission for India, London, as Economic Minister.

Dr. Honavar participated on behalf of the High Commission for India in a Seminar on Industry, Employment in Developing World, organised by the Overseas Development Institute, in November 1974 in Oxford. He presented one of the four

lead papers in the seminar, entitled, "Development and Employment: the Case of India". The Report of the Seminar, which includes the paper, was published in 1975. [Honavar, 1975, Pp. 36-52] In the paper, he observed that employment growth had fallen far short of the requirements and even short of the targets both because investment rates have been much lower than the targeted ones and further because of non-use of labour intensive technology outside of agriculture, construction and railways. While the scope of creating jobs in steel, machine building and heavy chemicals was greatly limited because of the nature of the existing technology, the potential of village and small industries to create more jobs in consumer goods like textiles, shoes, sugar and drugs was also limited because village and small industries, in spite of their other advantages, if any, tended to be so inefficient that they tended to be wasteful of both labour and capital. Thus, the employment created by large enterprises would be proportionately more; it did not increase more than proportionately because the large foreign owned enterprises would not be interested in labour intensive techniques but merely adopt "the path of least resistance to transplant whatever they knew to the Indian soil" and new domestic entrepreneurs very often "were importers of yesteryear whose business had been disrupted by the import substitution policy of the government" and "[n]othing was more convenient than to enter into a manufacturing arrangement with the firm which had earlier supplied the imports". In public sector enterprises also the experience in introducing labour intensive technology was not particularly good partly due to the inherently capital intensive nature of these projects but in part also "due to the orientation of the engineers in these projects and their anxiety to be as sophisticated as their counterparts abroad."

Vikas Chitre is President of the *Indian School of Political Economy*.

The author is grateful to Dr. Mrinalini (Minal) Honavar, Dr. Honavar's daughter, for providing to him details about Dr. Honavar's life through a number of e-mails, and to her and to Prof. N. Rath for going through an earlier draft of this write-up.

Dr. Honavar was the Chief Economic Adviser from 1977 to 1980. As Chief Economic Adviser, he was part of a team led by the then Minister of Finance, Shri H.M. Patel, along with Dr. Manmohan Singh, who was then the Finance Secretary, on September 27, 1978, which called on Mr. Robert McNamara, then President of the World Bank Group and was present in a meeting on October 10, 1978, when Mr. McNamara called on the Finance Minister. Many years later, in 1989, when we organised a Conference on Open Economy Macroeconomics at the Gokhale Institute, at which we organised a special public lecture by Dr. Montek Singh Ahluwalia, when I was about to display my audacity to introduce Dr. Honavar to Montek Singh at the end of the lecture, the latter fondly exclaimed, "Hey! What do you mean confronting me with my former boss?"

After retiring from the Indian Economic Service, Dr. Honavar worked from 1981 to 1991 as Director of Institute for Financial Management and Research (IFMR) in Chennai. In 1986, Government of Karnataka established a Finance Commission under the Chairmanship of Dr. Honavar "to go into the problems of income and expenditure in respect of zilla parishads and mandal panchayats and to make recommendations regarding the pattern of assistance from the government to zilla parishads and mandal panchayats" [Shivaramu, 1997, p. 13]. He co-authored and contributed chapters in a number of books published by IFMR. Some of these are: *Intervention and poverty: An economic assessment of poverty eradication and unemployment alleviation programmes (1987)*; *New International Economic Order and Systemic Reforms: An Analysis of India's Negotiating Concerns (1988)*; *National development banks and technological development in India (1989)*.

He was a Founder Member of Indian Council for Research on International Economic Relations, New Delhi, and a Life Member of Institute for Social and Economic Change, Bangalore. He

worked on the Board of Directors of the Bank of Maharashtra, after nationalisation, and on the Board of Directors of LIC Investment Fund.

Dr. Honavar settled in Pune after completing his stint at the IFMR. Very soon, he associated himself with the Gokhale Institute and the Indian School of Political Economy. He was a member of the Board of Management of Gokhale Institute from 1993, when the Institute was accorded the status of a Deemed University, till 2005. With Dr. Honavar's long experience in government and his constant urge for elevating the quality of research and education in the country, I greatly benefited from his thoughtful guidance and unstinted support, as Director of the Institute. And so did the Institute.

Dr. Honavar had an even longer association with the Indian School of Political Economy. He was appointed the Honorary Director of the School on March 1, 1993 and was elected as an Honorary Fellow of the School in the annual meeting of the Council of the School on 26 June of the same year. He worked as Honorary Director of the School, in a number of short stints, when called upon by the School. He continued to be re-elected as Honorary Fellow of the School at the end of each of his terms till June 2011, when he expressed his desire to withdraw from active participation in the management of the School on account of his advancing age. While the Council of the School respected his wish, it unanimously decided to confer on him the status of Emeritus Fellow of the School. The School greatly benefited from his balanced advice and keen scholarship. He wrote one long paper, entitled, "India: A Country of the Future?" apart from four Review articles and 14 Book Reviews for this *Journal* and worked as a referee for a number of papers submitted to it. The large number of Review articles and Book Reviews reflect his fondness for reading new books.

He always liked to discuss with us any new books that he had read, and would like to know what we were reading or writing. He would frequently raise simple but penetrating questions about economy, politics, governance, policy, world events. For example, he would ask: How would literacy increase productivity? Why do voters vote the way they vote? In fact, the latter question prompted the School to provide a small grant to the Centre for the Study of Developing Societies in Delhi, to insert a few questions in their exit polls to attempt to find an answer to that question in the context of the elections in Bihar in 2004 and 2005, to unravel if the voters voted on the basis of caste considerations or the performance of the incumbent government. A paper entitled, "Caste Dynamics and the Political Process in Bihar" based on the findings of that study has been published in this *Journal* in 2008.

In his paper, published in the Oct-Dec 1995 issue of the *Journal*, Dr. Honavar traces in detail the development experience of India and China during the first four decades of development after the countries became free from foreign yoke. [Honavar, 1995, pp. 601-648] In fact, as his daughter recalls, he often used to discuss why China progressed and India did not. As the data for the two countries compared, meticulously put together by Dr. Honavar, ends in 1985 or at the latest in the first half of the 1990s, while China's development experience was found to be superior to that of India, the truly spectacular strides of the Chinese economy under Deng Xiaoping's programme of reform and opening up of the economy to world trade and foreign capital are not touched upon. Dr. Honavar has brought out very clearly how during this period of successes and failures of the early planning experience in China (given the nature of the central command economy) as well as India (given the dominant role assigned to the public sector which yet suffered from shortage of resources) and, with mistakes, imbalances and hardships of various kinds, how the Chinese performance was vastly superior to

the Indian because they depended on learning by doing ("in the process they acquired a great deal of know-how, though they had to re-invent the wheel often") whereas the Indians sought ready-made technology from abroad.

The discussion brings out Dr. Honavar's views about, and perceptive analysis of the shortcomings of, India's development strategy in the pre-New Economic Policy decades. He further analysed the slow industrial growth in India as follows: "Since the rest of the economy was dependent on public sector growth, overall industrial growth was also limited. As India was a democratic state, government could not extract investible resources from the economy as China did. Also, as it was a mixed economy, signals from the market did matter to the private sector. In the absence of demand from the private sector, the ability of the public sector units to go on producing outputs in accordance with the targets laid down was limited."

Similarly, exports also did not grow. "This was partly because investment in traditional items like textiles was not made, as no opportunities for export expansion were perceived and also because a policy for reservation for handlooms was pursued in order to promote employment. New items of manufactures on which export hopes were pinned were high cost and uncompetitive. As the allocation of national output was not always in the hands of the state, it could not squeeze for exports a surplus out of a limited output for fear of exerting an inflationary pressure on prices."

The performance of the public sector in technology development was not adequate "due to lack of adequate resources for Research & Development (R&D), lack of continuous commitment of top management, an unwillingness to

risk failure [for fear of being charged with wasting resources] and the differing technological predictions of the foreign collaborators who came in the wake of foreign assistance needed by these projects."

On the other hand, "the elaborate regulatory set up for the private sector, to achieve diverse objectives like prevention of concentration of economic power and the growth of monopolies, provision of incentives to encourage domestic equipment manufacturing, protection to other domestic industries for conservation of foreign exchange, the achievement of balanced regional development, etc., succeeded in slowing down industrial growth considerably and generated a whole host of problems. Each authority concerned with a particular objective took its own time to decide the matters, and, in the process, the gestation period of projects got lengthened. As a consequence, the project costs went up and the viability of many of them got affected adversely, creating the problem of sick industrial units over a period of time. The anti-monopoly regulatory regime led to small and uneconomic units being set up which prevented realisation of economies of scale."

One area in which China was undoubtedly more successful than India, according to Dr. Honavar, was with regard to limiting the growth of population. He argued that the Chinese could bring down the birth rate by steeply lowering the death rate and the infant mortality rate, thus increasing the survival rate due to the tremendous increase in the health care (China had thrice the number of doctors and twice the number of hospital beds per thousand persons than India), the state taking over the responsibility of old people, disappearance of the household's need for man power due to collectivisation of agriculture,

banning of child labour, steep increase in women's participation in labour force, great strides in female literacy and education, and finally, the one child norm, pressed through incentives for child support and employment and "peer and official" pressure for abortion in case of a second pregnancy.

China's performance in poverty eradication was much better than India's because of constitutional guarantee of fulfillment of basic needs to citizens; permanent residential registration, guaranteed employment in urban areas, access to rationed essential consumer items, health care and retirement and disability provisions in urban areas; and in rural areas through the provision of productive assets through land reforms and equality of distribution and transfer of grain to the poorest areas to ensure minimum nutritional intakes and prevention of severe destitution, provision of shelter, health care and education.

On water management projects, the grave consequences of the neglect of which even now continues to hound our country every now and then, he wrote: "The kind of urgency and people's involvement in the execution of water management projects, seen in China, was completely absent in India because the implementing agents were not the Communist cadres but a cadre of engineers who lived in a timeless world."

Dr. Honavar also discussed at length the difference in the political system and the political economy of the two countries which was responsible for the difference in the pace of development in the two countries. He stated that "Mao was fond of saying, perhaps with an exaggerated sense of strength of the Communist Party, China was a blank sheet of paper on which the Chinese Communists could write whatever they wanted." Having said that, however, he

brings out the disagreements between Mao Ze Dong, on the one hand, who believed in a liberalised strategy of growth, and Zhou En Lai and Deng Xiao Ping, who "believed that decentralisation would lead to imbalance and chaos, and that centrally coordinated effort was necessary, if rapid and orderly growth was to be achieved."

On the other hand, he argues that in India, "Nehru genuinely believed in the vision of an egalitarian Socialist Society. With his death his vision seems to have lost its thrust. ... His daughter and her successors used elimination of poverty and egalitarianism as instruments for electoral victories. Money had to be provided for employment generation programmes, for making small and marginal farmers viable, for developing tiny and village industries, for sustaining tribals, and so on. And this had to be done without affecting adversely capitalists, large farmers, the white collar middle class and organised labour who were involved in the organised productive process. This juggling led inevitably to inflation, because larger expenditures had to be undertaken in the name of socialist development without mobilising additional resources from those who benefited from this development; and since the various programmes oriented towards the development of the poor were implemented without conviction, the results were naturally inadequate. Thus, India had neither high growth nor a high degree of equality."

Similar was the case in regard to the approach to regional development in the two countries. "Although initially heavy industrial investment had been undertaken in China in the backward regions in the West and the South both for regional development and for strategic considerations, the disappointing results led the authorities to pursue a policy of investing more where the return was

higher. However, the greater gain from such was appropriated by the state and transferred to the less productive regions, thus minimising regional tensions. Such a policy was virtually impossible in India, because of the inability of the central government to transfer the larger gains from such an effort to other areas because of this regional feeling. Resources had to be spread evenly, and therefore, thinly to contain regional and caste susceptibilities. This often slowed down the pace of development."

"Development became increasingly a by-product of political manipulations to secure and remain in power."

On reading these last three passages now, I recall a long telephonic conversation with Dr. Honavar on the future of India during which I surmised that the course of India's reform and development will be governed by the minimum which those in the centre (mainstream) considered necessary to 'bribe' those in the periphery to prevent the latter from revolting so that a semblance of social stability is somehow preserved. Dr. Honavar listened to me patiently and quietly, without agreeing or arguing with me.

What is not known at all, and what I just learnt from his daughter's e-mail, was his interest in and support for education of women. He and Mrs. Honavar donated funds regularly to a girls' school in Pune (it is a large establishment with a junior college now) and he directly supported the college education of another girl student.

After his wife's demise, Dr. Honavar used to live in his bungalow all by himself even at a very advanced age. He used to visit the School once in a while to chat with us. There was always something new which he had to say or discuss. So, we always looked forward to his visits.

He used to love gardening. (He would every time check with me whether our coconut tree has yet borne any coconuts.)

Once, only a few years ago, while working in his garden he fainted or fell down. After this incident, his daughter, who lives in Portugal with her family, decided to take him with her to Portugal. Even when he was away in Portugal, once in a while, he would send an e-mail about a new book which he had read and would enquire whether we could get it reviewed for our journal. Now, he would visit us once a year or so. While he had become considerably feeble physically, even those visits were filled with his usual affection, warmth and excited narration and discussion of what he had been reading or thinking.

And now on, even those visits will not be there.

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